GEL Laboratories LLC
a member of The GEL Group INC

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January 28, 2019

Mr. Robert F. Howe
Brookhaven National Laboratory
Building 462
Upton, New York 11973-5000

Re: Project - OU3 B96
Chain of Custody - 40650
Project Manager -V. RACANIELLO
Account # - 22486
Release # -468816

SDG: 40650

Dear Mr. Howe:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on January 12, 2019. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4453.

Sincerely,

Kaitlyn Stone for
Edith Kent
Project Manager

Purchase Order: 310464
Chain of Custody: 40650
Enclosures

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Case Narrative

Case Narrative
for
Brookhaven National Laboratory (310464)
SDG: 40650
Work Order: 468816

January 28, 2019

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample Receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on January 12, 2019 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
468816001	40650-001
468816002	40650-002
468816003	40650-003
468816004	40650-004
468816005	40650-005

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: GC/MS Volatile.

Kaitlyn Stone for
Edith Kent
Project Manager

Chain of Custody

Page 1 of 1

BROOKHAVEN
NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 40650

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

468816

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: ~~Test America~~ GEL
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: ~~13715 Rider Trail N.~~
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: ~~Earth City~~ St: ~~MO~~ Zip: ~~63045~~
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: ~~Ivan Vania~~
1 E. Kramer	Sampler: [signature]	Phone: ~~314-298-8566~~
2		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD USE TB-1 for GC# 40647-

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals
001	E	G	095-151	0	1/10/19	1330	W	RTW-1 Influent	40 ML	SC	3	HCL					X				
002	E	G	095-152	0		1332	W	RTW-1 Effluent	40 ML	SC	3	HCL					X				
003	E	G	095-153	0		1350	W	RTW-2 Influent	40 ML	SC	3	HCL					X				
004	E	G	095-155	0		1400	W	RTW-3 Influent	40 ML	SC	3	HCL					X				
005	E	G	095-157	0		1405	W	RTW-4 Influent	40 ML	SC	3	HCL					X				
~~006~~	~~E~~	~~G~~	~~TB-1~~	~~0~~			~~W~~	~~Trip Blank~~	~~40 ML~~	~~SC~~	~~3~~	~~HCL~~					~~X~~				

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Miller 1/11/19	Print	Print
Signature 1500	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Kaitlyn Stone 1/12/19	Print	Print
Signature Kaitlyn Stone 0850	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: BRKL	SDG/AR/COC/Work Order: 468816
Received By: ~~ZKW~~ KS 1/12/19	Date Received: 1/12/19
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 6583 4854 0388 - 4" 6583 4854 0322 - 2" 6583 4854 0311 - 17" (Rad.) 6583 4854 0333 - 2" 6583 4854 0344 - 1" 6583 4854 0355 - 2" 6583 4854 0300 - 1"

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		/	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		/	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		/	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		/	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		/	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	/			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	/			Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP:_____
4	Daily check performed and passed on IR temperature gun?	/			Temperature Device Serial #: IR3-18 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe) KS 1/12/19
6	Samples requiring chemical preservation at proper pH?			/	Sample ID's and Containers Affected: 468808-002 (40654-003) sampled States Preserved w/ Nitric. Sample not preserved. If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	/			If Yes, are Encores or Soil Kits present for solids? Yes___ No / NA___ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA / (If unknown, select No) Are liquid VOA vials free of headspace? Yes / No___ NA___ Sample ID's and containers affected: Please see below
8	Samples received within holding time?	/			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?			/	ID's and containers affected: Sample Desc. 468832-007.01 COC: EB-1 label: FRB-1 468832-006.02 COC: FRB.1 Label: EB-1
10	Date & time on COC match date & time on bottles?			/	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe) 468833 - Filters → no time on samples.
11	Number of containers received match number indicated on COC?	/			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided?			/	
13	COC form is properly signed in relinquished/received sections?	/			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

40640-001 (2 of 3)
40641-001 (4 of 6)
40638-008 (1 of 3) 003 (1 of 3) 009 (1 of 3)
40639-009 (1 of 3) 004 (1 of 3) 005 (1 of 3)

~~40636-009 (1 of~~ KS 1/12/19
40648-002 (1 of 3)
40656-004 (1 of 3)
006 (3 of 3)

PM (or PMA) review: Initials B/ ast Date 1/14/19 Page 1 of 1

ast 1/14/19

GL-CHL-SR-001 Rev 6

Work Order Containers

Sample ID: 468816001
Client Sample ID: 40650−001
Description: 095−151 Water

Label: 468816001.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler
21−JAN−19 15:12:46	Patrick Yib	Transfered custody to batch 1841910
21−JAN−19 15:12:46	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
23−JAN−19 00:09:02	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 468816001.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler
21−JAN−19 15:12:46	Patrick Yib	Transfered custody to batch 1841910
21−JAN−19 15:12:46	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
23−JAN−19 00:09:02	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 468816001.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler
21−JAN−19 15:12:46	Patrick Yib	Transfered custody to batch 1841910
21−JAN−19 15:12:46	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
23−JAN−19 00:09:02	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Sample ID: 468816002
Client Sample ID: 40650−002
Description: 095−152 Water

Label: 468816002.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 468816002.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler
21−JAN−19 15:12:46	Patrick Yib	Transfered custody to batch 1841910
21−JAN−19 15:12:46	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
23−JAN−19 00:09:02	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 468816002.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler

Work Order Containers

Sample ID: 468816003
Client Sample ID: 40650−003
Description: 095−153 Water

Label: 468816003.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler
21−JAN−19 15:12:46	Patrick Yib	Transfered custody to batch 1841910
21−JAN−19 15:12:46	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
23−JAN−19 00:09:02	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 468816003.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 468816003.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler

Sample ID: 468816004
Client Sample ID: 40650−004
Description: 095−155 Water

Label: 468816004.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler
21−JAN−19 15:12:46	Patrick Yib	Transfered custody to batch 1841910
21−JAN−19 15:12:46	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
23−JAN−19 00:09:02	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 468816004.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 468816004.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler

Sample ID: 468816005
Client Sample ID: 40650−005
Description: 095−157 Water

Label: 468816005.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler
21−JAN−19 15:12:46	Patrick Yib	Transfered custody to batch 1841910
21−JAN−19 15:12:46	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
23−JAN−19 00:09:02	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Work Order Containers

Sample ID: **468816005**
Client Sample ID: **40650−005**
Description: **095−157 Water**

Label: 468816005.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 468816005.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

12−JAN−19 14:12:46	Kaitlyn Stone	Changed sample location from Barcode Generated to Volatiles Cooler

Data Review Qualifier Definitions

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 28−JAN−19

Project Specific Qualifier Definitions for GEL Client Code: BRKL

Qualifier	Qualifier Definition	Department	Fraction
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.		
J	Value is estimated		
P	Organics−−The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.	Organics	
C	Analyte has been confirmed by GC/MS analysis	Organics	Pesticide
B	The target analyte was detected in the associated blank.	Organics	
E	Concentration of the target analyte exceeds the instrument calibration range	Organics	
A	The TIC is a suspected aldol−condensation product	Organics	Semi−Volatile
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
N	Metals−−The Matrix spike sample recovery is not within specified control limits	Inorganics	
*	A quality control analyte recovery is outside of specified acceptance criteria		
N	Organics−−Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor	Organics	Semi−Volatile
H	Analytical holding time was exceeded		
**	Analyte is a surrogate compound	Organics	
<	Result is less than value reported		
>	Result is greater than value reported		
UI	Gamma Spectroscopy−−Uncertain identification	Radiological	
BD	Results are either below the MDC or tracer recovery is low	Radiological	
h	Preparation or preservation holding time was exceeded		
R	Sample results are rejected		
Z	Paint Filter Test−−Particulates passed through the filter, however no free liquids were observed.	General Chemistry	General Chem
d	5−day BOD−−The 2:1 depletion requirement was not met for this sample	General Chemistry	
B	Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL	Inorganics	Metals
^	RPD of sample and duplicate evaluated using +/−RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.		
D	Results are reported from a diluted aliquot of the sample	Organics	
N/A	RPD or %Recovery limits do not apply.		
ND	Analyte concentration is not detected above the detection limit		
E	%difference of sample and SD is >10%. Sample concentration must meet flagging criteria	Inorganics	Metals
M	M if above MDC and less than LLD	Radiological	
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
FA	Failed analysis.	Radiological	Bioassay
E	General Chemistry−−Concentration of the target analyte exceeds the instrument calibration range	General Chemistry	General Chem
JNX	Non Calibrated Compound	Organics	Volatile
UJ	Compound cannot be extracted	Organics	Semi−Volatile

Project Specific Qualifier Definitions for GEL Client Code: BRKL

Qualifier	Qualifier Definition	Department	Fraction
UJ	Gamma Spectroscopy−−Uncertain identification	Radiological	Rad
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.		
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.	Radiological	
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.	Radiological	
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.	Radiological	
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies	Inorganics	Metals
N1	See case narrative		
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.	Inorganics	
Y	QC Samples were not spiked with this compound	Organics	
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.	General Chemistry	General Chem
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.	Radiological	Rad
**	Analyte is a Tracer compound	Radiological	
B	The target analyte was detected in the associated blank.	General Chemistry	
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor	Organics	Volatile
e	5−day BOD−−Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes	General Chemistry	General Chem
M	REMP Result > MDC/CL and < RDL	Radiological	

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Laboratory Certifications

List of current GEL Certifications as of 28 January 2019

State	Certification
Alaska	17−018
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA024
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122019−1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	9904
Pennsylvania NELAP	68−00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−18−13
Utah NELAP	SC000122018−27
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Volatile Analysis

Case Narrative

GC/MS Volatile
Technical Case Narrative
Brookhaven National Laboratory (BRKL)
SDG #: 40650
Work Order #: 468816

Product: **Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometer Applicable to EPA Method 524.2**
Analytical Method: EPA 524.2
Analytical Procedure: GL-OA-E-022 REV# 14
Analytical Batch: 1841910

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
468816001	40650-001
468816002	40650-002
468816003	40650-003
468816004	40650-004
468816005	40650-005
1204202508	Method Blank (MB)
1204202509	Laboratory Control Sample (LCS)
1204202510	468818001(40651-001) Post Spike (PS)
1204202511	468818001(40651-001) Post Spike Duplicate (PSD)
1204203591	Method Blank (MB)
1204203592	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Laboratory Control Sample (LCS) Recovery
The LCS/and or LCSD (See Below) recovery was not within the acceptance limits for all analytes. The unacceptable analyte was not detected in the samples associated with the laboratory control sample. Therefore, the data were reported.

Sample	Analyte	Value
1204203592 (LCS)	1, 1-Dichloropropene	136* (70%-130%)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

BRKL007 Brookhaven National Laboratory (310464)

Client SDG: 40650 GEL Work Order: 468816

The Qualifiers in this report are defined as follows:

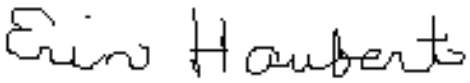
* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
J Value is estimated
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Erin Haubert**

Date: 05 FEB 2019 **Title: Data Validator**

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 13:30**	**Matrix:**	**W**
Lab Sample ID:	**468816001**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**095-151**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40650-001**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 16:04**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 16:04**				
Data File:	**012219V8\8G214.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 13:30**	**Matrix:**	**W**
Lab Sample ID:	**468816001**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**095-151**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40650-001**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 16:04**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 16:04**				
Data File:	**012219V8\8G214.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		2.15	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 13:32**	**Matrix:**	**W**
Lab Sample ID:	**468816002**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**095-152**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40650-002**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 16:35**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 16:35**				
Data File:	**012219V8\8G215.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 13:32**	**Matrix:**	**W**
Lab Sample ID:	**468816002**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**095-152**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40650-002**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 16:35**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 16:35**				
Data File:	**012219V8\8G215.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 13:50**	**Matrix:**	**W**
Lab Sample ID:	**468816003**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**095-153**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40650-003**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 17:07**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 17:07**				
Data File:	**012219V8\8G216.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 13:50**	**Matrix:**	**W**
Lab Sample ID:	**468816003**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**095-153**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40650-003**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 17:07**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 17:07**				
Data File:	**012219V8\8G216.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		1.50	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 14:00**	**Matrix:**	**W**
Lab Sample ID:	**468816004**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**095-155**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40650-004**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 17:38**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 17:38**				
Data File:	**012219V8\8G217.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		1.19	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 14:00**	**Matrix:**	**W**
Lab Sample ID:	**468816004**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**095-155**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40650-004**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 17:38**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 17:38**				
Data File:	**012219V8\8G217.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		1.49	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 14:05**	**Matrix:**	**W**
Lab Sample ID:	**468816005**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**095-157**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40650-005**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 18:10**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 18:10**				
Data File:	**012219V8\8G218.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		0.680	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 14:05**	**Matrix:**	**W**
Lab Sample ID:	**468816005**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**095-157**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40650-005**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 18:10**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 18:10**				
Data File:	**012219V8\8G218.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	J	0.240	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Quality Control Summary

Volatile

Surrogate Recovery Report

SDG Number: 40650

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	DCED4 %REC	TOL %REC	TOL %REC	BFB %REC	BFB %REC
1204202509	LCS for batch 1841910	90	90	102			
1204202508	MB for batch 1841910	100	92	89			
468816001	40650-001	96	91	83			
468816002	40650-002	99	91	82			
468816003	40650-003	98	90	83			
468816004	40650-004	101	93	82			
468816005	40650-005	96	91	84			
1204203592	LCS for batch 1841910	93	91	84			
1204203591	MB for batch 1841910	102	90	87			
1204202510	40651-001PS	100	87	94			
1204202511	40651-001PSD	92	90	99			

Surrogate		Acceptance Limits
DCED4	= 1,2-Dichloroethane-d4	(70%-130%)
TOL	= Toluene-d8	(70%-130%)
BFB	= Bromofluorobenzene	(70%-130%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40650
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1841910
Matrix: WATER
Lab Sample ID 1204202509
Instrument: VOA8.I
Analysis Date: 01/22/2019 09:48
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1841910

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	20.0	0.0	22.2	111	70-130
74-87-3	LCS	Chloromethane	20.0	0.0	19.2	96	70-130
75-01-4	LCS	Vinyl chloride	20.0	0.0	17.4	87	70-130
74-83-9	LCS	Bromomethane	20.0	0.0	19.0	95	70-130
75-00-3	LCS	Chloroethane	20.0	0.0	17.4	87	70-130
75-69-4	LCS	Trichlorofluoromethane	20.0	0.0	17.9	89	70-130
75-35-4	LCS	1,1-Dichloroethylene	20.0	0.0	19.7	98	70-130
75-09-2	LCS	Methylene chloride	20.0	0.0	22.8	114	70-130
1634-04-4	LCS	tert-Butyl methyl ether	20.0	0.0	20.0	100	70-130
156-60-5	LCS	trans-1,2-Dichloroethylene	20.0	0.0	20.5	102	70-130
75-34-3	LCS	1,1-Dichloroethane	20.0	0.0	23.9	119	70-130
156-59-2	LCS	cis-1,2-Dichloroethylene	20.0	0.0	23.8	119	70-130
594-20-7	LCS	2,2-Dichloropropane	20.0	0.0	23.8	119	70-130
74-97-5	LCS	Bromochloromethane	20.0	0.0	23.7	119	70-130
67-66-3	LCS	Chloroform	20.0	0.0	21.4	107	70-130
71-55-6	LCS	1,1,1-Trichloroethane	20.0	0.0	21.8	109	70-130
563-58-6	LCS	1,1-Dichloropropene	20.0	0.0	25.5	128	70-130
56-23-5	LCS	Carbon tetrachloride	20.0	0.0	23.4	117	70-130
107-06-2	LCS	1,2-Dichloroethane	20.0	0.0	20.2	101	70-130
71-43-2	LCS	Benzene	20.0	0.0	24.9	125	70-130
79-01-6	LCS	Trichloroethylene	20.0	0.0	24.3	122	70-130
78-87-5	LCS	1,2-Dichloropropane	20.0	0.0	23.8	119	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40650
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1841910
Matrix: WATER
Lab Sample ID 1204202509
Instrument: VOA8.I
Analysis Date: 01/22/2019 09:48
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1841910

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
74-95-3	LCS	Dibromomethane	20.0	0.0	24.6	123	70-130
75-27-4	LCS	Bromodichloromethane	20.0	0.0	23.2	116	70-130
10061-01-5	LCS	cis-1,3-Dichloropropylene	20.0	0.0	21.9	109	70-130
108-88-3	LCS	Toluene	20.0	0.0	22.7	114	70-130
10061-02-6	LCS	trans-1,3-Dichloropropylene	20.0	0.0	20.6	103	70-130
79-00-5	LCS	1,1,2-Trichloroethane	20.0	0.0	22.8	114	70-130
142-28-9	LCS	1,3-Dichloropropane	20.0	0.0	21.6	108	70-130
127-18-4	LCS	Tetrachloroethylene	20.0	0.0	24.5	122	70-130
124-48-1	LCS	Dibromochloromethane	20.0	0.0	22.7	114	70-130
106-93-4	LCS	1,2-Dibromoethane	20.0	0.0	22.1	110	70-130
108-90-7	LCS	Chlorobenzene	20.0	0.0	21.0	105	70-130
100-41-4	LCS	Ethylbenzene	20.0	0.0	22.1	110	70-130
95-47-6	LCS	o-Xylene	20.0	0.0	21.1	106	70-130
100-42-5	LCS	Styrene	20.0	0.0	21.3	106	70-130
75-25-2	LCS	Bromoform	20.0	0.0	22.5	112	70-130
98-82-8	LCS	Isopropylbenzene	20.0	0.0	20.0	100	70-130
79-34-5	LCS	1,1,2,2-Tetrachloroethane	20.0	0.0	19.5	97	70-130
96-18-4	LCS	1,2,3-Trichloropropane	20.0	0.0	18.9	94	70-130
108-86-1	LCS	Bromobenzene	20.0	0.0	21.8	109	70-130
103-65-1	LCS	n-Propylbenzene	20.0	0.0	22.3	111	70-130
108-67-8	LCS	1,3,5-Trimethylbenzene	20.0	0.0	19.8	99	70-130
95-49-8	LCS	2-Chlorotoluene	20.0	0.0	21.8	109	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40650
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1841910
Matrix: WATER
Lab Sample ID 1204202509
Instrument: VOA8.I
Analysis Date: 01/22/2019 09:48
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1841910

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
106-43-4	LCS	4-Chlorotoluene	20.0	0.0	20.3	102	70-130
98-06-6	LCS	tert-Butylbenzene	20.0	0.0	19.8	99	70-130
95-63-6	LCS	1,2,4-Trimethylbenzene	20.0	0.0	19.7	99	70-130
135-98-8	LCS	sec-Butylbenzene	20.0	0.0	20.3	102	70-130
99-87-6	LCS	4-Isopropyltoluene	20.0	0.0	20.1	101	70-130
541-73-1	LCS	1,3-Dichlorobenzene	20.0	0.0	21.3	106	70-130
106-46-7	LCS	1,4-Dichlorobenzene	20.0	0.0	20.0	100	70-130
104-51-8	LCS	n-Butylbenzene	20.0	0.0	19.4	97	70-130
96-12-8	LCS	1,2-Dibromo-3-chloropropane	20.0	0.0	20.0	100	70-130
87-68-3	LCS	Hexachlorobutadiene	20.0	0.0	20.3	101	70-130
91-20-3	LCS	Naphthalene	20.0	0.0	19.7	98	70-130
87-61-6	LCS	1,2,3-Trichlorobenzene	20.0	0.0	20.9	104	70-130
120-82-1	LCS	1,2,4-Trichlorobenzene	20.0	0.0	21.2	106	70-130
630-20-6	LCS	1,1,1,2-Tetrachloroethane	20.0	0.0	21.8	109	70-130
95-50-1	LCS	1,2-Dichlorobenzene	20.0	0.0	21.2	106	70-130
179601-23-1	LCS	m,p-Xylenes	40.0	0.0	44.4	111	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: **40650**
Sample Type: **Post Spike**
Client ID: **40651-001PS**
Matrix: **W**
Lab Sample ID **1204202510**
Instrument: **VOA8.I**
Analysis Date: **01/23/2019 20:14**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1841910**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
127-18-4	PS	Tetrachloroethylene	20.0	0.210	J	23.1	114	70-130
75-71-8	PS	Dichlorodifluoromethane	20.0	0.00	U	18.8	94	70-130
74-87-3	PS	Chloromethane	20.0	0.00	U	19.3	97	70-130
75-01-4	PS	Vinyl chloride	20.0	0.00	U	17.3	86	70-130
74-83-9	PS	Bromomethane	20.0	0.00	U	18.7	93	70-130
75-00-3	PS	Chloroethane	20.0	0.00	U	17.5	88	70-130
75-35-4	PS	1,1-Dichloroethylene	20.0	0.00	U	20.6	103	70-130
75-09-2	PS	Methylene chloride	20.0	0.00	U	22.9	115	70-130
1634-04-4	PS	tert-Butyl methyl ether	20.0	0.00	U	20.8	104	70-130
156-60-5	PS	trans-1,2-Dichloroethylene	20.0	0.00	U	20.8	104	70-130
75-34-3	PS	1,1-Dichloroethane	20.0	0.00	U	23.3	116	70-130
156-59-2	PS	cis-1,2-Dichloroethylene	20.0	0.00	U	23.9	120	70-130
594-20-7	PS	2,2-Dichloropropane	20.0	0.00	U	22.4	112	70-130
74-97-5	PS	Bromochloromethane	20.0	0.00	U	23.7	118	70-130
71-55-6	PS	1,1,1-Trichloroethane	20.0	0.00	U	23.0	115	70-130
563-58-6	PS	1,1-Dichloropropene	20.0	0.00	U	24.7	123	70-130
56-23-5	PS	Carbon tetrachloride	20.0	0.00	U	23.3	117	70-130
107-06-2	PS	1,2-Dichloroethane	20.0	0.00	U	20.5	102	70-130
71-43-2	PS	Benzene	20.0	0.00	U	25.4	127	70-130
79-01-6	PS	Trichloroethylene	20.0	0.00	U	24.0	120	70-130
78-87-5	PS	1,2-Dichloropropane	20.0	0.00	U	25.4	127	70-130
74-95-3	PS	Dibromomethane	20.0	0.00	U	24.8	124	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40650
Sample Type: Post Spike
Client ID: 40651-001PS
Matrix: W
Lab Sample ID 1204202510
Instrument: VOA8.I
Analysis Date: 01/23/2019 20:14
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1841910

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
75-27-4	PS	Bromodichloromethane	20.0	0.00	U	23.9	119	70-130
10061-01-5	PS	cis-1,3-Dichloropropylene	20.0	0.00	U	21.0	105	70-130
108-88-3	PS	Toluene	20.0	0.00	U	22.0	110	70-130
10061-02-6	PS	trans-1,3-Dichloropropylene	20.0	0.00	U	18.5	93	70-130
79-00-5	PS	1,1,2-Trichloroethane	20.0	0.00	U	21.3	106	70-130
142-28-9	PS	1,3-Dichloropropane	20.0	0.00	U	21.1	106	70-130
124-48-1	PS	Dibromochloromethane	20.0	0.00	U	21.7	108	70-130
106-93-4	PS	1,2-Dibromoethane	20.0	0.00	U	20.9	104	70-130
108-90-7	PS	Chlorobenzene	20.0	0.00	U	20.7	104	70-130
100-41-4	PS	Ethylbenzene	20.0	0.00	U	21.3	107	70-130
95-47-6	PS	o-Xylene	20.0	0.00	U	20.9	104	70-130
100-42-5	PS	Styrene	20.0	0.00	U	21.0	105	70-130
75-25-2	PS	Bromoform	20.0	0.00	U	20.3	102	70-130
98-82-8	PS	Isopropylbenzene	20.0	0.00	U	18.5	92	70-130
79-34-5	PS	1,1,2,2-Tetrachloroethane	20.0	0.00	U	18.4	92	70-130
96-18-4	PS	1,2,3-Trichloropropane	20.0	0.00	U	17.3	86	70-130
108-86-1	PS	Bromobenzene	20.0	0.00	U	20.5	102	70-130
103-65-1	PS	n-Propylbenzene	20.0	0.00	U	20.8	104	70-130
108-67-8	PS	1,3,5-Trimethylbenzene	20.0	0.00	U	18.5	92	70-130
95-49-8	PS	2-Chlorotoluene	20.0	0.00	U	20.5	102	70-130
106-43-4	PS	4-Chlorotoluene	20.0	0.00	U	19.2	96	70-130
98-06-6	PS	tert-Butylbenzene	20.0	0.00	U	17.9	89	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: **40650**
Sample Type: **Post Spike**
Client ID: **40651-001PS**
Matrix: **W**
Lab Sample ID **1204202510**
Instrument: **VOA8.I**
Analysis Date: **01/23/2019 20:14**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1841910**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
95-63-6	PS	1,2,4-Trimethylbenzene	20.0	0.00	U	18.3	91	70-130
135-98-8	PS	sec-Butylbenzene	20.0	0.00	U	18.8	94	70-130
99-87-6	PS	4-Isopropyltoluene	20.0	0.00	U	18.6	93	70-130
541-73-1	PS	1,3-Dichlorobenzene	20.0	0.00	U	20.1	100	70-130
106-46-7	PS	1,4-Dichlorobenzene	20.0	0.00	U	18.7	93	70-130
104-51-8	PS	n-Butylbenzene	20.0	0.00	U	17.7	88	70-130
96-12-8	PS	1,2-Dibromo-3-chloropropane	20.0	0.00	U	16.8	84	70-130
87-68-3	PS	Hexachlorobutadiene	20.0	0.00	U	17.7	89	70-130
91-20-3	PS	Naphthalene	20.0	0.00	U	17.8	89	70-130
87-61-6	PS	1,2,3-Trichlorobenzene	20.0	0.00	U	18.7	93	70-130
120-82-1	PS	1,2,4-Trichlorobenzene	20.0	0.00	U	18.8	94	70-130
630-20-6	PS	1,1,1,2-Tetrachloroethane	20.0	0.00	U	21.5	108	70-130
95-50-1	PS	1,2-Dichlorobenzene	20.0	0.00	U	19.6	98	70-130
75-69-4	PS	Trichlorofluoromethane	20.0	1.38		17.9	83	70-130
67-66-3	PS	Chloroform	20.0	1.16		23.3	111	70-130
179601-23-1	PS	m,p-Xylenes	40.0	0.00	U	43.5	109	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40650
Sample Type: Post Spike Duplicate
Client ID: 40651-001PSD
Matrix: W
Lab Sample ID 1204202511
Instrument: VOA8.I
Analysis Date: 01/23/2019 20:45
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1841910

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
127-18-4	PSD	Tetrachloroethylene	20.0	0.210	J	22.4	111	70-130	3	0-20
75-71-8	PSD	Dichlorodifluoromethane	20.0	0.00	U	19.8	99	70-130	5	0-20
74-87-3	PSD	Chloromethane	20.0	0.00	U	21.7	108	70-130	12	0-20
75-01-4	PSD	Vinyl chloride	20.0	0.00	U	19.6	98	70-130	13	0-20
74-83-9	PSD	Bromomethane	20.0	0.00	U	18.8	94	70-130	1	0-20
75-00-3	PSD	Chloroethane	20.0	0.00	U	17.5	88	70-130	0	0-20
75-35-4	PSD	1,1-Dichloroethylene	20.0	0.00	U	20.5	103	70-130	0	0-20
75-09-2	PSD	Methylene chloride	20.0	0.00	U	22.9	115	70-130	0	0-20
1634-04-4	PSD	tert-Butyl methyl ether	20.0	0.00	U	21.2	106	70-130	2	0-20
156-60-5	PSD	trans-1,2-Dichloroethylene	20.0	0.00	U	21.2	106	70-130	2	0-20
75-34-3	PSD	1,1-Dichloroethane	20.0	0.00	U	22.3	112	70-130	4	0-20
156-59-2	PSD	cis-1,2-Dichloroethylene	20.0	0.00	U	24.0	120	70-130	1	0-20
594-20-7	PSD	2,2-Dichloropropane	20.0	0.00	U	23.0	115	70-130	2	0-20
74-97-5	PSD	Bromochloromethane	20.0	0.00	U	24.1	121	70-130	2	0-20
71-55-6	PSD	1,1,1-Trichloroethane	20.0	0.00	U	22.3	112	70-130	3	0-20
563-58-6	PSD	1,1-Dichloropropene	20.0	0.00	U	24.6	123	70-130	0	0-20
56-23-5	PSD	Carbon tetrachloride	20.0	0.00	U	22.8	114	70-130	2	0-20
107-06-2	PSD	1,2-Dichloroethane	20.0	0.00	U	20.7	104	70-130	1	0-20
71-43-2	PSD	Benzene	20.0	0.00	U	25.1	126	70-130	1	0-20
79-01-6	PSD	Trichloroethylene	20.0	0.00	U	23.6	118	70-130	2	0-20
78-87-5	PSD	1,2-Dichloropropane	20.0	0.00	U	24.3	121	70-130	4	0-20
74-95-3	PSD	Dibromomethane	20.0	0.00	U	22.7	114	70-130	9	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40650
Sample Type: Post Spike Duplicate
Client ID: 40651-001PSD
Matrix: W
Lab Sample ID 1204202511
Instrument: VOA8.I
Analysis Date: 01/23/2019 20:45
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1841910

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
75-27-4	PSD	Bromodichloromethane	20.0	0.00	U	22.5	113	70-130	6	0-20
10061-01-5	PSD	cis-1,3-Dichloropropylene	20.0	0.00	U	21.5	108	70-130	3	0-20
108-88-3	PSD	Toluene	20.0	0.00	U	21.8	109	70-130	1	0-20
10061-02-6	PSD	trans-1,3-Dichloropropylene	20.0	0.00	U	19.2	96	70-130	4	0-20
79-00-5	PSD	1,1,2-Trichloroethane	20.0	0.00	U	21.9	110	70-130	3	0-20
142-28-9	PSD	1,3-Dichloropropane	20.0	0.00	U	21.0	105	70-130	0	0-20
124-48-1	PSD	Dibromochloromethane	20.0	0.00	U	21.6	108	70-130	0	0-20
106-93-4	PSD	1,2-Dibromoethane	20.0	0.00	U	21.3	107	70-130	2	0-20
108-90-7	PSD	Chlorobenzene	20.0	0.00	U	20.8	104	70-130	0	0-20
100-41-4	PSD	Ethylbenzene	20.0	0.00	U	21.3	107	70-130	0	0-20
95-47-6	PSD	o-Xylene	20.0	0.00	U	20.4	102	70-130	2	0-20
100-42-5	PSD	Styrene	20.0	0.00	U	20.8	104	70-130	1	0-20
75-25-2	PSD	Bromoform	20.0	0.00	U	21.2	106	70-130	4	0-20
98-82-8	PSD	Isopropylbenzene	20.0	0.00	U	19.2	96	70-130	4	0-20
79-34-5	PSD	1,1,2,2-Tetrachloroethane	20.0	0.00	U	18.1	91	70-130	2	0-20
96-18-4	PSD	1,2,3-Trichloropropane	20.0	0.00	U	17.3	87	70-130	1	0-20
108-86-1	PSD	Bromobenzene	20.0	0.00	U	21.1	105	70-130	3	0-20
103-65-1	PSD	n-Propylbenzene	20.0	0.00	U	21.4	107	70-130	3	0-20
108-67-8	PSD	1,3,5-Trimethylbenzene	20.0	0.00	U	18.8	94	70-130	1	0-20
95-49-8	PSD	2-Chlorotoluene	20.0	0.00	U	20.5	103	70-130	0	0-20
106-43-4	PSD	4-Chlorotoluene	20.0	0.00	U	19.9	100	70-130	4	0-20
98-06-6	PSD	tert-Butylbenzene	20.0	0.00	U	18.1	90	70-130	1	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40650 **Sample Type:** Post Spike Duplicate

Client ID: 40651-001PSD **Matrix:** W

Lab Sample ID 1204202511

Instrument: VOA8.I **Analysis Date:** 01/23/2019 20:45 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 1841910

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
95-63-6	PSD	1,2,4-Trimethylbenzene	20.0	0.00	U	19.0	95	70-130	4	0-20
135-98-8	PSD	sec-Butylbenzene	20.0	0.00	U	19.5	98	70-130	4	0-20
99-87-6	PSD	4-Isopropyltoluene	20.0	0.00	U	19.2	96	70-130	3	0-20
541-73-1	PSD	1,3-Dichlorobenzene	20.0	0.00	U	20.6	103	70-130	3	0-20
106-46-7	PSD	1,4-Dichlorobenzene	20.0	0.00	U	19.3	97	70-130	3	0-20
104-51-8	PSD	n-Butylbenzene	20.0	0.00	U	18.3	91	70-130	3	0-20
96-12-8	PSD	1,2-Dibromo-3-chloropropane	20.0	0.00	U	17.2	86	70-130	2	0-20
87-68-3	PSD	Hexachlorobutadiene	20.0	0.00	U	19.2	96	70-130	8	0-20
91-20-3	PSD	Naphthalene	20.0	0.00	U	18.3	92	70-130	3	0-20
87-61-6	PSD	1,2,3-Trichlorobenzene	20.0	0.00	U	19.4	97	70-130	4	0-20
120-82-1	PSD	1,2,4-Trichlorobenzene	20.0	0.00	U	19.9	99	70-130	5	0-20
630-20-6	PSD	1,1,1,2-Tetrachloroethane	20.0	0.00	U	20.7	104	70-130	4	0-20
95-50-1	PSD	1,2-Dichlorobenzene	20.0	0.00	U	20.2	101	70-130	3	0-20
75-69-4	PSD	Trichlorofluoromethane	20.0	1.38		19.2	89	70-130	7	0-20
67-66-3	PSD	Chloroform	20.0	1.16		23.2	110	70-130	0	0-20
179601-23-1	PSD	m,p-Xylenes	40.0	0.00	U	43.5	109	70-130	0	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40650
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1841910
Matrix: DRINKING WATER (POTABLE)
Lab Sample ID 1204203592
Instrument: VOA8.I
Analysis Date: 01/23/2019 09:47
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1841910

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	20.0	0.0	19.7	99	70-130
74-87-3	LCS	Chloromethane	20.0	0.0	19.3	97	70-130
75-01-4	LCS	Vinyl chloride	20.0	0.0	18.2	91	70-130
74-83-9	LCS	Bromomethane	20.0	0.0	18.1	91	70-130
75-00-3	LCS	Chloroethane	20.0	0.0	16.9	84	70-130
75-69-4	LCS	Trichlorofluoromethane	20.0	0.0	17.7	88	70-130
75-35-4	LCS	1,1-Dichloroethylene	20.0	0.0	20.2	101	70-130
75-09-2	LCS	Methylene chloride	20.0	0.0	22.3	112	70-130
1634-04-4	LCS	tert-Butyl methyl ether	20.0	0.0	21.3	107	70-130
156-60-5	LCS	trans-1,2-Dichloroethylene	20.0	0.0	21.0	105	70-130
75-34-3	LCS	1,1-Dichloroethane	20.0	0.0	22.3	112	70-130
156-59-2	LCS	cis-1,2-Dichloroethylene	20.0	0.0	25.2	126	70-130
594-20-7	LCS	2,2-Dichloropropane	20.0	0.0	25.8	129	70-130
74-97-5	LCS	Bromochloromethane	20.0	0.0	23.7	119	70-130
67-66-3	LCS	Chloroform	20.0	0.0	21.9	109	70-130
71-55-6	LCS	1,1,1-Trichloroethane	20.0	0.0	23.1	115	70-130
563-58-6	LCS	1,1-Dichloropropene	20.0	0.0	27.3	136 *	70-130
56-23-5	LCS	Carbon tetrachloride	20.0	0.0	23.0	115	70-130
107-06-2	LCS	1,2-Dichloroethane	20.0	0.0	21.0	105	70-130
71-43-2	LCS	Benzene	20.0	0.0	25.3	127	70-130
79-01-6	LCS	Trichloroethylene	20.0	0.0	24.1	121	70-130
78-87-5	LCS	1,2-Dichloropropane	20.0	0.0	25.1	126	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40650
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1841910
Matrix: DRINKING WATER (POTABLE)
Lab Sample ID 1204203592
Instrument: VOA8.I
Analysis Date: 01/23/2019 09:47
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1841910

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
74-95-3	LCS	Dibromomethane	20.0	0.0	22.5	113	70-130
75-27-4	LCS	Bromodichloromethane	20.0	0.0	22.9	115	70-130
10061-01-5	LCS	cis-1,3-Dichloropropylene	20.0	0.0	23.2	116	70-130
108-88-3	LCS	Toluene	20.0	0.0	21.6	108	70-130
10061-02-6	LCS	trans-1,3-Dichloropropylene	20.0	0.0	20.5	103	70-130
79-00-5	LCS	1,1,2-Trichloroethane	20.0	0.0	21.7	108	70-130
142-28-9	LCS	1,3-Dichloropropane	20.0	0.0	21.2	106	70-130
127-18-4	LCS	Tetrachloroethylene	20.0	0.0	22.6	113	70-130
124-48-1	LCS	Dibromochloromethane	20.0	0.0	22.0	110	70-130
106-93-4	LCS	1,2-Dibromoethane	20.0	0.0	21.2	106	70-130
108-90-7	LCS	Chlorobenzene	20.0	0.0	20.4	102	70-130
100-41-4	LCS	Ethylbenzene	20.0	0.0	20.9	105	70-130
95-47-6	LCS	o-Xylene	20.0	0.0	20.1	101	70-130
100-42-5	LCS	Styrene	20.0	0.0	20.5	103	70-130
75-25-2	LCS	Bromoform	20.0	0.0	24.5	122	70-130
98-82-8	LCS	Isopropylbenzene	20.0	0.0	19.8	99	70-130
79-34-5	LCS	1,1,2,2-Tetrachloroethane	20.0	0.0	18.2	91	70-130
96-18-4	LCS	1,2,3-Trichloropropane	20.0	0.0	16.9	85	70-130
108-86-1	LCS	Bromobenzene	20.0	0.0	20.7	104	70-130
103-65-1	LCS	n-Propylbenzene	20.0	0.0	21.6	108	70-130
108-67-8	LCS	1,3,5-Trimethylbenzene	20.0	0.0	18.8	94	70-130
95-49-8	LCS	2-Chlorotoluene	20.0	0.0	20.7	103	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40650
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1841910
Matrix: DRINKING WATER (POTABLE)
Lab Sample ID 1204203592
Instrument: VOA8.I
Analysis Date: 01/23/2019 09:47
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1841910

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
106-43-4	LCS	4-Chlorotoluene	20.0	0.0	20.5	102	70-130
98-06-6	LCS	tert-Butylbenzene	20.0	0.0	18.9	95	70-130
95-63-6	LCS	1,2,4-Trimethylbenzene	20.0	0.0	19.3	96	70-130
135-98-8	LCS	sec-Butylbenzene	20.0	0.0	19.9	100	70-130
99-87-6	LCS	4-Isopropyltoluene	20.0	0.0	19.4	97	70-130
541-73-1	LCS	1,3-Dichlorobenzene	20.0	0.0	20.8	104	70-130
106-46-7	LCS	1,4-Dichlorobenzene	20.0	0.0	19.0	95	70-130
104-51-8	LCS	n-Butylbenzene	20.0	0.0	19.2	96	70-130
96-12-8	LCS	1,2-Dibromo-3-chloropropane	20.0	0.0	18.7	93	70-130
87-68-3	LCS	Hexachlorobutadiene	20.0	0.0	19.0	95	70-130
91-20-3	LCS	Naphthalene	20.0	0.0	18.0	90	70-130
87-61-6	LCS	1,2,3-Trichlorobenzene	20.0	0.0	19.3	97	70-130
120-82-1	LCS	1,2,4-Trichlorobenzene	20.0	0.0	19.7	98	70-130
630-20-6	LCS	1,1,1,2-Tetrachloroethane	20.0	0.0	20.3	102	70-130
95-50-1	LCS	1,2-Dichlorobenzene	20.0	0.0	20.3	102	70-130
179601-23-1	LCS	m,p-Xylenes	40.0	0.0	42.5	106	70-130

Method Blank Summary

SDG Number:	**40650**	**Client:**	**BRKL007**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1841910**	**Instrument ID:**	**VOA8.I**	**Data File:**	**012219V8\8G204BD.D**
Lab Sample ID:	**1204202508**	**Prep Date:**	**01/22/2019 10:50**	**Analyzed:**	**01/22/19 10:50**
Column:	**DB-624**				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 1841910	1204202509	012219V8\8G202BD.D	01/22/19	0948
02	40650-001	468816001	012219V8\8G214.D	01/22/19	1604
03	40650-002	468816002	012219V8\8G215.D	01/22/19	1635
04	40650-003	468816003	012219V8\8G216.D	01/22/19	1707
05	40650-004	468816004	012219V8\8G217.D	01/22/19	1738
06	40650-005	468816005	012219V8\8G218.D	01/22/19	1810

Method Blank Summary

SDG Number:	**40650**	**Client:**	**BRKL007**	**Matrix:**	**DRINKING WATER (POTABI**
Client ID:	**MB for batch 1841910**	**Instrument ID:**	**VOA8.I**	**Data File:**	**012319V8\8G304BD.D**
Lab Sample ID:	**1204203591**	**Prep Date:**	**01/23/2019 10:50**	**Analyzed:**	**01/23/19 10:50**
Column:	**DB-624**				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
08	LCS for batch 1841910	1204203592	012319V8\8G302BD.D	01/23/19	0947
09	40651-001PS	1204202510	012319V8\8G322.D	01/23/19	2014
10	40651-001PSD	1204202511	012319V8\8G323.D	01/23/19	2045

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 40650

Instrument ID: VOA8.I **Injection Date/Time:** 07-JAN-19 09:32

Column Description: DB-624 **Lab File ID** 010719V8\8E103.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.7
75	30.0 - 60.0% of mass 95	50.2
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	7.8
173	Less than 2.0% of mass 174	0
174	50.0 - 100.0% of mass 95	89.5
175	5.0 -9.0% of mass 174	6.2
176	95.0 - 101.0% of mass 174	95.7
177	5.0 - 9.0% of mass 176	6.6

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
ICALMIX[A]	W8VM190107-02	010719V8\8E105.D	07-JAN-19 10:35
ICALMIX[A]	W8VM190107-03	010719V8\8E106.D	07-JAN-19 11:07
ICALMIX[A]	W8VM190107-04	010719V8\8E107.D	07-JAN-19 11:38
ICALMIX[A]	W8VM190107-05	010719V8\8E108.D	07-JAN-19 12:09
ICALMIX[A]	W8VM190107-06	010719V8\8E109.D	07-JAN-19 12:40
ICALMIX[A]	W8VM190107-07	010719V8\8E110.D	07-JAN-19 13:11
ICALMIX[A]	W8VM190107-01	010719V8\8E112.D	07-JAN-19 14:14

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 40650

Instrument ID: VOA8.I **Injection Date/Time:** 22-JAN-19 09:16

Column Description: DB-624 **Lab File ID** 012219V8\8G201.D

m/e	Ion Abundance Criteria	% Relative Abundance
174	50.0 - 100.0% of mass 95	99.6
175	5.0 -9.0% of mass 174	8
176	95.0 - 101.0% of mass 174	99.5
177	5.0 - 9.0% of mass 176	6.8
50	15.0 - 40.0% of mass 95	18
75	30.0 - 60.0% of mass 95	50.9
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	8.2
173	Less than 2.0% of mass 174	0

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCVMIX[A]01	W8VM190122-01	012219V8\8G202.D	22-JAN-19 09:48
BLK01LCS	1204202509	012219V8\8G202BD.D	22-JAN-19 09:48
BLK01	1204202508	012219V8\8G204BD.D	22-JAN-19 10:50
40650-001	468816001	012219V8\8G214.D	22-JAN-19 16:04
40650-002	468816002	012219V8\8G215.D	22-JAN-19 16:35
40650-003	468816003	012219V8\8G216.D	22-JAN-19 17:07
40650-004	468816004	012219V8\8G217.D	22-JAN-19 17:38
40650-005	468816005	012219V8\8G218.D	22-JAN-19 18:10

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 40650

Instrument ID: VOA8.I **Injection Date/Time:** 23-JAN-19 09:15

Column Description: DB-624 **Lab File ID** 012319V8\8G301.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	17.4
75	30.0 - 60.0% of mass 95	49.3
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	8.3
173	Less than 2.0% of mass 174	0
174	50.0 - 100.0% of mass 95	78.9
175	5.0 -9.0% of mass 174	6.9
176	95.0 - 101.0% of mass 174	100.9
177	5.0 - 9.0% of mass 176	7.2

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCVMIX[A]02	W8VM190123-01	012319V8\8G302.D	23-JAN-19 09:47
BLK02LCS	1204203592	012319V8\8G302BD.D	23-JAN-19 09:47
BLK02	1204203591	012319V8\8G304BD.D	23-JAN-19 10:50
40651-001MS	1204202510	012319V8\8G322.D	23-JAN-19 20:14
40651-001MSD	1204202511	012319V8\8G323.D	23-JAN-19 20:45

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 40650

Instrument: VOA8.I

STD Analysis Time: 22-JAN-19 09:48

GC Column: DB-624

Data File: 012219V8\8G202.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	1463608	11.0	1423231	14.2	1098423	16.7
Upper Limit	2927216	11.5	2846462	14.7	2196846	17.2
Lower Limit	731804	10.5	711616	13.7	549212	16.2
Sample ID						
BLK01LCS	1463608	11.0	1423231	14.2	1098423	16.7
BLK01	1260541	11.0	1200233	14.2	776914	16.7
40650-001	1138800	11.0	1114881	14.2	732933	16.7
40650-002	1107437	11.0	1080978	14.2	738082	16.7
40650-003	1089630	11.0	1078905	14.2	708549	16.7
40650-004	1112438	11.0	1075446	14.2	740735	16.7
40650-005	1084160	11.0	1062913	14.2	711713	16.7

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 40650

Instrument: VOA8.I

STD Analysis Time: 23-JAN-19 09:47

GC Column: DB-624

Data File: 012319V8\8G302.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	1336165	11.0	1313019	14.2	1003289	16.7
Upper Limit	2672330	11.5	2626038	14.7	2006578	17.2
Lower Limit	668083	10.5	656510	13.7	501645	16.2
Sample ID						
BLK02LCS	1336165	11.0	1313019	14.2	1003289	16.7
BLK02	1185644	11.0	1152184	14.2	779561	16.7
40651-001MS	1100995	11.0	1129847	14.2	918644	16.7
40651-001MSD	1215816	11.0	1186478	14.2	912242	16.7

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Standards

Low level SW846 8260B and Regular level 8260B and EPA 624

Calibration Standard Concentration Levels

	Level 1	Level 1a	Level 2	Level 3	Level 4	Level 5	Level 6 #	Level 7 !	Level 7a
Fluorobenzene (IS)	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
1,2-Dichloroethane-d4(surr)		20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Dichlorodifluoromethane		0.5	1	2	5	10	20	50	100
Chloromethane		0.5	1	2	5	10	20	50	100
Vinyl chloride		0.5	1	2	5	10	20	50	100
Bromomethane		0.5	1	2	5	10	20	50	100
Chloroethane		0.5	1	2	5	10	20	50	100
Trichlorofluoromethane		0.5	1	2	5	10	20	50	100
1,1-Dichloroethene		0.5	1	2	5	10	20	50	100
Acetone	1	2.5	5	10	25	50	100	250	500
Iodomethane	1	2.5	5	10	25	50	100	250	500
Carbon disulfide	1	2.5	5	10	25	50	100	250	500
Methylene chloride		0.5	1	2	5	10	20	50	100
trans-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,1-Dichloroethane		0.5	1	2	5	10	20	50	100
Ethyl ether		0.5	1	2	5	10	20	50	100
Vinyl acetate	1	2.5	5	10	25	50	100	250	500
cis-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethene (total)		1	2	4	10	20	40	100	200
Cyclohexene		0.5	1	2	5	10	20	50	100
2-Chloroethylvinyl ether			5	10	25	50	100	250	500
2,2-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Butanone	1	2.5	5	10	25	50	100	250	500
Bromochloromethane		0.5	1	2	5	10	20	50	100
Chloroform		0.5	1	2	5	10	20	50	100
1,1,1-Trichloroethane		0.5	1	2	5	10	20	50	100
1,1-Dichloropropene		0.5	1	2	5	10	20	50	100
Carbon tetrachloride		0.5	1	2	5	10	20	50	100
Benzene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethane		0.5	1	2	5	10	20	50	100
Trichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloropropane		0.5	1	2	5	10	20	50	100
Dibromomethane		0.5	1	2	5	10	20	50	100
Bromodichloromethane		0.5	1	2	5	10	20	50	100
cis-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
tert-Butylmethylether		0.5	1	2	5	10	20	50	100
Ethyl Ether			1	2	5	10	20	50	100
Acetonitrile			25	50	125	250	500	1250	2500
Methyl acetate			5	10	25	50	100	250	500
Cyclohexane			1	2	5	10	20	50	100
Methylcyclohexane			1	2	5	10	20	50	100
n-Butyl alcohol		50	100	200	500	1000	2000	5000	10000
2-Nitropropane			5	10	25	50	100	250	500
Ethyl acetate			5	10	25	50	100	250	500
Acrolein			5	10	25	50	100	250	500
Trichlorotrifluoroethane		2	5	10	25	50	100	250	500
Allyl chloride			5	10	25	50	100	250	500
Acrylonitrile			5	10	25	50	100	250	500
1,4-Dioxane			50	100	250	500	1000	2500	5000
Isobutyl alcohol			50	100	250	500	1000	2500	5000
Methacrylonitrile			5	10	25	50	100	250	500
Propionitrile			5	10	25	50	100	250	500
Methyl methacrylate			5	10	25	50	100	250	500
Chlorotrifluoroethylene			5	10	25	50	100	150	200
2-Chloro-1,1,1-trifluoroethane			5	10	25	50	100	150	200
Tetrahydrofuran			5	10	25	50	100	250	500
tert-Butyl alcohol			50	100	250	500	1000	2500	5000
Isopropyl ether			1	2	5	10	20	50	100
Ethyl tert-butyl ether			1	2	5	10	20	50	100
Isopropyl alcohol			50	100	250	500	1000	2500	5000
Methyl tert-amyl ether			1	2	5	10	20	50	100
1-Chlorohexane			1	2	5	10	20	50	100
2-Chloro-1,3-butadiene(chloroprene)			1	2	5	10	20	50	100
Chlorobenzene-d5 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Toluene-d8 (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
4-Methyl-2-pentanone	1	2.5	5	10	25	50	100	250	500
Toluene		0.5	1	2	5	10	20	50	100
trans-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
1,1,2-Trichloroethane		0.5	1	2	5	10	20	50	100
Tetrachloroethene		0.5	1	2	5	10	20	50	100
1,3-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Hexanone	1	2.5	5	10	25	50	20	250	500
Dibromochloromethane		0.5	1	2	5	10	20	50	100
1,2-Dibromoethane		0.5	1	2	5	10	20	50	100
Chlorobenzene		0.5	1	2	5	10	20	50	100
1,1,1,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Ethylbenzene		0.5	1	2	5	10	20	50	100
m,p-Xylene		1	2	4	10	20	20	100	200
o-Xylene		0.5	1	2	5	10	20	50	100
Xylenes (total)		1.5	3	6	15	30	60	150	300
Stryene		0.5	1	2	5	10	20	50	100
Ethyl methacrylate			5	10	25	50	100	250	500
1,4-Dichlorobenzene-d4 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromofluorobenzene (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromoform		0.5	1	2	5	10	20	50	100
Isopropylbenzene		0.5	1	2	5	10	20	50	100
1,1,2,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Bromobenzene		0.5	1	2	5	10	20	50	100
1,2,3-Trichloropropane		0.5	1	2	5	10	20	50	100
n-Propylbenzene		0.5	1	2	5	10	20	50	100
2-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,3,5-Trimethylbenzene		0.5	1	2	5	10	20	50	100
4-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,2,4-Trimethylbenzene		0.5	1	2	5	10	20	50	100
sec-Butylbenzene		0.5	1	2	5	10	20	50	100
1,3-Dichlorobenzene		0.5	1	2	5	10	20	50	100
tert-Butylbenzene		0.5	1	2	5	10	20	50	100
Isopropyltoluene		0.5	1	2	5	10	20	50	100
1,4-Dichlorobenzene		0.5	1	2	5	10	20	50	100
n-Butylbenzene		0.5	1	2	5	10	20	50	100
1,2-Dichlorobenzene		0.5	1	2	5	10	20	50	100
1,2-Dibromo-3-chloropropa		0.5	1	2	5	10	20	50	100
1,2,4-Trichlorobenzene		0.5	1	2	5	10	20	50	100
Hexachlorobutadiene		0.5	1	2	5	10	20	50	100
Naphthalene		0.5	1	2	5	10	20	50	100
1,2,3-Trichlorobenzene		0.5	1	2	5	10	20	50	100
cis-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
trans-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
Pentachloroethane			5	10	25	50	100	250	500
Benzyl chloride			5	10	25	50	100	250	500
Cyclohexanone			25	50	125	250	500	1250	2500
bis(2-Chloro-isopropyl)ether			5	10	25	50	100	250	500

Method	PQL	Concentration range		
SW 846 8260B low level	Level 1 &1a	Levels 1-> 7a	IS/SS @ 20 ppb	
EPA 524.2	Level 1a	Levels 1a-> 7a	IS/SS @ 20 ppb	
SW846 8260B/624	Level 2	Levels 1a-> 7a	IS/SS @ 50 ppb	n-butyl alchol only in 1a

#: Indicates calibration verification concentration level used for low level analysis

!: Indicates calibration verification concentration level used for regular level analysis

Calibration History Report VOA8
GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

Cal Lvl:10 Amt:40.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E109.D

Injection Date	Mix	Calibration File
07 Jan 2019 12:40	A	C:\msdchem\1\DATA\010719V8\8E109.D

Cal Lvl:2 Amt:0.50 Last Updated with: C:\msdchem\1\DATA\010719V8\8E112.D

Injection Date	Mix	Calibration File
07 Jan 2019 14:14	A	C:\msdchem\1\DATA\010719V8\8E112.D

Cal Lvl:3 Amt:1.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E105.D

Injection Date	Mix	Calibration File
07 Jan 2019 10:35	A	C:\msdchem\1\DATA\010719V8\8E105.D

Cal Lvl:4 Amt:2.00 None of the compounds use this level.

Injection Date	Mix	Calibration File

Cal Lvl:5 Amt:5.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E106.D

Injection Date	Mix	Calibration File
07 Jan 2019 11:07	A	C:\msdchem\1\DATA\010719V8\8E106.D

Cal Lvl:6 Amt:10.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E107.D

Injection Date	Mix	Calibration File
07 Jan 2019 11:38	A	C:\msdchem\1\DATA\010719V8\8E107.D

Cal Lvl:7 Amt:20.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E108.D

Injection Date	Mix	Calibration File
07 Jan 2019 12:09	A	C:\msdchem\1\DATA\010719V8\8E108.D

Cal Lvl:8 Amt:50.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E110.D

Injection Date	Mix	Calibration File
07 Jan 2019 13:11	A	C:\msdchem\1\DATA\010719V8\8E110.D

Cal Lvl:9 Amt:0.00 None of the compounds use this level.

Injection Date	Mix	Calibration File

VOA8-524T-010719-.M Wed Jan 09 13:22:27 2019

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

01/09/2019
01/10/2019

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
2)MA Dichlorodifluoromethane	0.2075742 0.2315229	0.2359308 0.2238049	0.2537771		0.2535455	0.2486408	0.2364	AVRG		7.2436
3)MA Chloromethane 0.0057 | 0.4153 | 0.00	1186666 574076	20860 1583892	30344		126558	259697		1/x LINR		0.9997
4)MA Vinyl chloride	0.4181729 0.4160268	0.4778060 0.4329160	0.4523909		0.4186174	0.4140580	0.4329	AVRG		5.5454
5)MA Bromomethane 0.0035 | 0.3872 | 0.00	1145944 521329	18639 1436142	23425		115563	246923		1/x LINR		0.9992
6)MA Chloroethane	0.2586149 0.2497859	0.3247590 0.2618999	0.3226304		0.2707086	0.2664661	0.2793	AVRG		11.1181
7)MA Trichlorofluoromethane	0.7475544 0.7966293	0.8939189 0.8302540	0.9394286		0.7972604	0.8150803	0.8314	AVRG		7.8024
8)MA 1,1-Dichloroethylene	0.5336141 0.5295831	0.6280194 0.5591992	0.5541476		0.5115314	0.5216894	0.5483	AVRG		7.1167
9)MA Methylene chloride 0.0043 | 0.3784 | 0.00	1056775 531202	17833 1445678	25493		116858	241966		1/x LINR		0.9996
10)MA tert-Butyl methyl ether	0.9293820 0.9063300	0.9146784 0.9667173	0.8283128		0.7955683	0.8522984	0.8848	AVRG		6.8849
11)MA trans-1,2-Dichloroethyle	0.4929532 0.4865226	0.5434724 0.5087505	0.5334660		0.4655420	0.4781584	0.5013	AVRG		5.7421
12)MA 1,1-Dichloroethane	0.5144806 0.5336804	0.4696439 0.5039961	0.6000804		0.5412659	0.5269457	0.5272	AVRG		7.5738
13)MA cis-1,2-Dichloroethylene	0.3002334 0.3091886	0.3196770 0.3041220	0.2714125		0.2743519	0.3018091	0.2973	AVRG		6.0090
14)MA 2,2-Dichloropropane	0.2140613 0.2321597	0.1921327 0.2215272	0.2331321		0.2200836	0.2353400	0.2212	AVRG		6.8052
15)MA Bromochloromethane	0.1731017 0.1740667	0.1706340 0.1724379	0.1876398		0.1636255	0.1780352	0.1742	AVRG		4.2192
16)MA Chloroform	0.4754387 0.5040429	0.5642318 0.4762751	0.4906712		0.4935777	0.4936449	0.4997	AVRG		6.0459

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
17)MA 1,1,1-Trichloroethane	0.3939887	0.3939674	0.4076876		0.4125252	0.4130724				
	0.4189098	0.4071206					0.4068	AVRG		2.3505
18)MA 1,1-Dichloropropene	0.3279976	0.2692260	0.2181393		0.2858265	0.3212903				
	0.3248799	0.3269895					0.2963	AVRG		14.0086
19)MA Carbon tetrachloride	0.4203538	0.4042856	0.4601534		0.4010136	0.4369740				
	0.4351933	0.4274687					0.4265	AVRG		4.7857
20)SA 1,2-Dichloroethane-d4	0.1440143	0.1396188	0.1632026		0.1500971	0.1446981				
	0.1480506	0.1447435					0.1478	AVRG		5.1150
21)MA 1,2-Dichloroethane	0.3418874	0.3931974	0.3494964		0.3271836	0.3347503				
	0.3572771	0.3394453					0.3490	AVRG		6.2366
22)MA Benzene	0.9877496	0.8518148	0.8379471		0.9463768	0.9760203				
	1.0082012	0.9709625					0.9399	AVRG		7.1926
23)MA Trichloroethylene	0.2952751	0.2391648	0.2285811		0.2367153	0.2740737				
	0.2975130	0.2906313					0.2660	AVRG		11.3823
24)MA 1,2-Dichloropropane	0.2717723	0.2650679	0.2433904		0.2620093	0.2629713				
	0.2787997	0.2762889					0.2658	AVRG		4.4516
25)MA Dibromomethane	0.1952230	0.1819069	0.2129827		0.1954658	0.1903944				
	0.2026354	0.1974727					0.1966	AVRG		4.9282
26)MA Bromodichloromethane	0.3732784	0.3535574	0.3728389		0.3495678	0.3615442				
	0.3742296	0.3695108					0.3649	AVRG		2.7777
27)MA cis-1,3-Dichloropropylen -0.0066 | 0.3885 | 0.00	1110188 509977	8378 1515961	14476		76798	204334		1/x LINR	# 	0.9935
29)SA Toluene-d8	1.1287738	1.1923469	1.2107485		1.2287151	1.1909584				
	1.1618749	1.1369662					1.1786	AVRG		3.1713
30)MA Toluene	1.2978781	1.3069079	1.1848377		1.3501292	1.4200446				
	1.4124978	1.2747713					1.3210	AVRG		6.2148
31)MA trans-1,3-Dichloropropyl -0.0055 | 0.4266 | 0.00	1084959 491124	8247 1429241	13201		83319	204610		1/x LINR		0.9983
32)MA 1,1,2-Trichloroethane	0.2571084	0.2466801	0.2582992		0.2631914	0.2592418				
	0.2655684	0.2540845					0.2577	AVRG		2.4004

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
33)MA 1,3-Dichloropropane	0.4982528	0.5492318	0.4315555		0.5163662	0.5047590				
	0.5107842	0.4985737					0.5014	AVRG		7.0553
34)MA Tetrachloroethylene	0.3229909	0.3552741	0.2671006		0.3328728	0.3434785				
	0.3449998	0.3340465					0.3287	AVRG		8.8383
35)MA Dibromochloromethane	0.3907032	0.3245225	0.3096664		0.3677553	0.3765284				
	0.3894224	0.3912493					0.3643	AVRG		9.2304
36)MA 1,2-Dibromoethane	0.3266562	0.3120366	0.2969854		0.2846447	0.3124131				
	0.3290724	0.3273926					0.3127	AVRG		5.4032
37)MA Chlorobenzene	0.9970638	1.0828284	1.0429959		1.0640477	1.0533393				
	1.0459466	0.9791418					1.0379	AVRG		3.5513
38)MA 1,1,1,2-Tetrachloroethan	0.4121855	0.3274865	0.4053065		0.4170444	0.4272045				
	0.4284790	0.4049125					0.4032	AVRG		8.6073
39)MA Ethylbenzene -0.0119 | 1.5020 | 0.00	3788429 1878358	31532 4771612	46761		335935	827941		1/x LINR		0.9979
40)MA m,p-Xylenes -0.0155 | 0.6423 | 0.00	3260480 1549522	22716 4109538	33398		289763	689509		1/x LINR	# #	0.9988
41)MA o-Xylene -0.0223 | 1.3097 | 0.00	3279200 1597979	18056 4216505	26738		278994	685877		1/x LINR	# #	0.9986
42)MA Styrene -0.0198 | 1.0574 | 0.00	2700565 1250484	14775 3434775	22935		193720	540450		1/x LINR	# #	0.9980
44)MA Bromoform	0.3672484	0.2767068	0.2802154		0.2920515	0.3169945				
	0.3377590	0.3641730					0.3193	AVRG		11.9549
45)MA Isopropylbenzene -0.0346 | 2.1075 | 0.00	3911882 1917009	22970 4855380	31530		290292	809587		1/x LINR	# #	0.9970
46)SA Bromofluorobenzene	0.6207996	0.6527835	0.6224296		0.6391939	0.6484564				
	0.6571301	0.6226448					0.6376	AVRG		2.4534
47)MA 1,1,2,2-Tetrachloroethan	0.6422484	0.7542134	0.7127082		0.6315620	0.6112691				
	0.6613459	0.6173826					0.6615	AVRG		8.0355
48)MA 1,2,3-Trichloropropane	0.1902675	0.2353881	0.1942591		0.1678790	0.1805313				
	0.1900965	0.1766863					0.1907	AVRG		11.3884

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
49)MA Bromobenzene	0.7430393	0.7416305	0.5939834		0.6432761	0.6880281				
	0.7331261	0.7309561					0.6963	AVRG		8.3219
50)MA n-Propylbenzene	2.4778889	2.1214777	1.7327810		2.3157895	2.5290455				
	2.6763867	2.3040344					2.3082	AVRG		13.4603
51)MA 1,3,5-Trimethylbenzene -0.0284 | 1.9028 | 0.00	3541197 1705408	20461 4394679	32888		277682	730078		1/x LINR	 #	 0.9981
52)MA 2-Chlorotoluene	0.6894545	0.5730196	0.4715668		0.6271672	0.6456783				
	0.6772566	0.6697505					0.6220	AVRG		12.3669
53)MA 4-Chlorotoluene	1.6052041	1.2639089	1.0987108		1.4451513	1.5147205				
	1.6310573	1.5356185					1.4421	AVRG		13.4587
54)MA tert-Butylbenzene -0.0074 | 0.4590 | 0.00	851364 399004	6254 1099035	6908		57118	164735		1/x LINR	 #	 0.9955
55)MA 1,2,4-Trimethylbenzene -0.0280 | 1.9814 | 0.00	3634448 1799920	20183 4545891	32404		321091	786621		1/x LINR	 #	 0.9985
56)MA sec-Butylbenzene -0.0283 | 2.2967 | 0.00	4277490 2123323	27471 5185423	38744		363154	919140		1/x LINR	 #	 0.9971
57)MA 4-Isopropyltoluene -0.0309 | 2.0840 | 0.00	3885810 1911059	26375 4737393	26459		305644	824472		1/x LINR	 #	 0.9964
58)MA 1,3-Dichlorobenzene	1.3437070	1.3958830	1.0931242		1.2502550	1.3393022				
	1.3645189	1.3061850					1.2990	AVRG		7.8327
59)MA 1,4-Dichlorobenzene	1.4069764	1.6776231	1.4864777		1.4182636	1.3828528				
	1.4309952	1.3442871					1.4496	AVRG		7.5591
60)MA n-Butylbenzene -0.0172 | 1.8879 | 0.00	3535343 1711649	27991 4322096	35838		297838	742189		1/x LINR		 0.9979
61)MA 1,2-Dichlorobenzene	1.3427587	1.3237216	1.0934835		1.1931045	1.2565785				
	1.3679304	1.2893069					1.2667	AVRG		7.5803
62)MA 1,2-Dibromo-3-chloroprop -0.0050 | 0.1545 | 0.00	291078 126721	 367024	2925		19499	49196		1/x LINR		 0.9948
63)MA 1,2,4-Trichlorobenzene -0.0064 | 0.9101 | 0.00	1743207 785288	17437 2157888	20177		123182	322873		1/x LINR		 0.9952

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
64)MA Hexachlorobutadiene	0.3826538 0.3611017	0.5023213 0.3601046	0.3564358		0.3639191	0.3444560	0.3816	AVRG		14.2674
65)MA Naphthalene -0.0269 | 2.4109 | 0.00	4602827 2200801	43217 5607649	40290		306569	835616		1/x LINR	# 	0.9929
66)MA 1,2,3-Trichlorobenzene -0.0270 | 0.9283 | 0.00	1721945 786193	17625 2147756	19627		127627	321080		 LINR	 	0.9984
68)B Trichlorotrifluoroethane							0.0000	AVRG	#	-1.0000
69)B 1,4-Dioxane							0.0000	AVRG	#	-1.0000

(#) = Out of Range ($) = Individual RF Out of Range
AVRG = Average, LINR = Linear Regression, 1/x = the inverse of concentration, 1/x^2 = the inverse square of concentration

Continuing Calibration Summary

Client SDG: 40650

Instrument ID: VOA8.I **Injection Date:** 22-JAN-19 09:48

Data File: 012219V8\8G202.D **Init. Cal. Date(s)** 07-JAN-19 10:35 - 07-JAN-19 14:14

Lab Sample ID W8VM190122-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD **Method Update:** 09-JAN-19 13:14

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.1478	0.13318		.01		-9.89175	30		Averaged
S	Toluene-d8	1.1786	1.06348		.01		-9.76752	30		Averaged
S	Bromofluorobenzene	0.6376	0.65014		.01		1.96675	30		Averaged
	Dichlorodifluoromethane	0.2364	0.26275		.01		11.14636	30		Averaged
	Chloromethane	20	19.15	20			-4.25	30		Linear
	Vinyl chloride	0.4329	0.3765		.01		-13.02841	30		Averaged
	Bromomethane	20	18.99	20			-5.05	30		Linear
	Chloroethane	0.2793	0.24311		.01		-12.95739	30		Averaged
	Trichlorofluoromethane	0.8314	0.7432		.01		-10.60861	30		Averaged
	1,1-Dichloroethylene	0.5483	0.5388		.01		-1.73263	30		Averaged
	Methylene chloride	20	22.78	20			13.9	30		Linear
	tert-Butyl methyl ether	0.8848	0.8845		.01		-0.03391	30		Averaged
	trans-1,2-Dichloroethylene	0.5013	0.51358		.01		2.44963	30		Averaged
	1,1-Dichloroethane	0.5272	0.62904		.1		19.31715	30		Averaged
	cis-1,2-Dichloroethylene	0.2973	0.35416		.01		19.12546	30		Averaged
	2,2-Dichloropropane	0.2212	0.26278		.01		18.79747	30		Averaged
	Bromochloromethane	0.1742	0.20665		.01		18.62801	30		Averaged
	Chloroform	0.4997	0.53575		.01		7.21433	30		Averaged
	1,1,1-Trichloroethane	0.4068	0.44371		.01		9.07325	30		Averaged
	1,1-Dichloropropene	0.2963	0.37796		.01		27.55991	30		Averaged
	Carbon tetrachloride	0.4265	0.49864		.01		16.91442	30		Averaged
	1,2-Dichloroethane	0.349	0.35295		.01		1.13181	30		Averaged
	Benzene	0.9399	1.17011		.01		24.49303	30		Averaged
	Trichloroethylene	0.266	0.32322		.01		21.51128	30		Averaged
	1,2-Dichloropropane	0.2658	0.31569		.01		18.76975	30		Averaged
	Dibromomethane	0.1966	0.2416		.01		22.88911	30		Averaged
	Bromodichloromethane	0.3649	0.42336		.01		16.02083	30		Averaged
	cis-1,3-Dichloropropylene	20	21.85	20			9.25	30		Linear
	Toluene	1.321	1.50161		.01		13.67222	30		Averaged
	trans-1,3-Dichloropropylene	20	20.55	20			2.75	30		Linear
	1,1,2-Trichloroethane	0.2577	0.29394		.01		14.06286	30		Averaged
	1,3-Dichloropropane	0.5014	0.54191		.01		8.07938	30		Averaged
	Tetrachloroethylene	0.3287	0.40252		.01		22.45817	30		Averaged
	Dibromochloromethane	0.3643	0.4139		.01		13.61515	30		Averaged
	1,2-Dibromoethane	0.3127	0.34485		.01		10.28142	30		Averaged
	Chlorobenzene	1.0379	1.08977		.3		4.99759	30		Averaged
	1,1,1,2-Tetrachloroethane	0.4032	0.43944		.01		8.9881	30		Averaged

Continuing Calibration Summary

Instrument ID: VOA8.I **Injection Date:** 22-JAN-19 09:48

Data File: 012219V8\8G202.D **Init. Cal. Date(s)** 07-JAN-19 10:35 07-JAN-19 14:14

Lab Sample ID W8VM190122-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD

Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
Ethylbenzene	20	22.07	20			10.35	30		Linear
m,p-Xylenes	40	44.39	40			10.975	30		Linear
o-Xylene	20	21.11	20			5.55	30		Linear
Styrene	20	21.27	20			6.35	30		Linear
Bromoform	0.3193	0.35884		.1		12.38334	30		Averaged
Isopropylbenzene	20	19.97	20			-0.15	30		Linear
1,1,2,2-Tetrachloroethane	0.6615	0.64461		.3		-2.55329	30		Averaged
1,2,3-Trichloropropane	0.1907	0.18003		.01		-5.59518	30		Averaged
Bromobenzene	0.6963	0.75854		.01		8.93868	30		Averaged
n-Propylbenzene	2.3082	2.57158		.01		11.41062	30		Averaged
1,3,5-Trimethylbenzene	20	19.83	20			-0.85	30		Linear
2-Chlorotoluene	0.622	0.67642		.01		8.7492	30		Averaged
4-Chlorotoluene	1.4421	1.46627		.01		1.67603	30		Averaged
tert-Butylbenzene	20	19.79	20			-1.05	30		Linear
1,2,4-Trimethylbenzene	20	19.72	20			-1.4	30		Linear
sec-Butylbenzene	20	20.34	20			1.7	30		Linear
4-Isopropyltoluene	20	20.13	20			0.65	30		Linear
1,3-Dichlorobenzene	1.299	1.38149		.01		6.35027	30		Averaged
1,4-Dichlorobenzene	1.4496	1.45112		.01		0.10486	30		Averaged
n-Butylbenzene	20	19.44	20			-2.8	30		Linear
1,2-Dichlorobenzene	1.2667	1.34282		.01		6.00932	30		Averaged
1,2-Dibromo-3-chloropropane	20	20	20			0	30		Linear
1,2,4-Trichlorobenzene	20	21.18	20			5.9	30		Linear
Hexachlorobutadiene	0.3816	0.38678		.01		1.35744	30		Averaged
Naphthalene	20	19.68	20			-1.6	30		Linear
1,2,3-Trichlorobenzene	20	20.85	20			4.25	30		Linear

Continuing Calibration Summary

Client SDG: 40650

Instrument ID: VOA8.I **Injection Date:** 23-JAN-19 09:47

Data File: 012319V8\8G302.D **Init. Cal. Date(s)** 07-JAN-19 10:35 - 07-JAN-19 14:14

Lab Sample ID W8VM190123-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD **Method Update:** 09-JAN-19 13:14

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.1478	0.1377		.01		-6.83356	30		Averaged
S	Toluene-d8	1.1786	1.06804		.01		-9.38062	30		Averaged
S	Bromofluorobenzene	0.6376	0.53851		.01		-15.54109	30		Averaged
	Dichlorodifluoromethane	0.2364	0.2332		.01		-1.35364	30		Averaged
	Chloromethane	20	19.32	20			-3.4	30		Linear
	Vinyl chloride	0.4329	0.39301		.01		-9.2146	30		Averaged
	Bromomethane	20	18.1	20			-9.5	30		Linear
	Chloroethane	0.2793	0.23525		.01		-15.77157	30		Averaged
	Trichlorofluoromethane	0.8314	0.7355		.01		-11.53476	30		Averaged
	1,1-Dichloroethylene	0.5483	0.55301		.01		0.85902	30		Averaged
	Methylene chloride	20	22.32	20			11.6	30		Linear
	tert-Butyl methyl ether	0.8848	0.94292		.01		6.56872	30		Averaged
	trans-1,2-Dichloroethylene	0.5013	0.52661		.01		5.04887	30		Averaged
	1,1-Dichloroethane	0.5272	0.58874		.1		11.67299	30		Averaged
	cis-1,2-Dichloroethylene	0.2973	0.37451		.01		25.9704	30		Averaged
	2,2-Dichloropropane	0.2212	0.28544		.01		29.04159	30		Averaged
	Bromochloromethane	0.1742	0.20647		.01		18.52468	30		Averaged
	Chloroform	0.4997	0.54631		.01		9.3276	30		Averaged
	1,1,1-Trichloroethane	0.4068	0.46894		.01		15.27532	30		Averaged
	1,1-Dichloropropene	0.2963	0.40373		.01		36.25717	30	*	Averaged
	Carbon tetrachloride	0.4265	0.48946		.01		14.76202	30		Averaged
	1,2-Dichloroethane	0.349	0.3666		.01		5.04298	30		Averaged
	Benzene	0.9399	1.19025		.01		26.63581	30		Averaged
	Trichloroethylene	0.266	0.32047		.01		20.47744	30		Averaged
	1,2-Dichloropropane	0.2658	0.33394		.01		25.63582	30		Averaged
	Dibromomethane	0.1966	0.22152		.01		12.67548	30		Averaged
	Bromodichloromethane	0.3649	0.41793		.01		14.53275	30		Averaged
	cis-1,3-Dichloropropylene	20	23.19	20			15.95	30		Linear
	Toluene	1.321	1.42393		.01		7.79182	30		Averaged
	trans-1,3-Dichloropropylene	20	20.51	20			2.55	30		Linear
	1,1,2-Trichloroethane	0.2577	0.27911		.01		8.30811	30		Averaged
	1,3-Dichloropropane	0.5014	0.5307		.01		5.84364	30		Averaged
	Tetrachloroethylene	0.3287	0.37095		.01		12.85367	30		Averaged
	Dibromochloromethane	0.3643	0.39999		.01		9.79687	30		Averaged
	1,2-Dibromoethane	0.3127	0.33153		.01		6.02175	30		Averaged
	Chlorobenzene	1.0379	1.05706		.3		1.84604	30		Averaged
	1,1,1,2-Tetrachloroethane	0.4032	0.4097		.01		1.6121	30		Averaged

Continuing Calibration Summary

Instrument ID: VOA8.I **Injection Date:** 23-JAN-19 09:47

Data File: 012319V8\8G302.D **Init. Cal. Date(s)** 07-JAN-19 10:35 07-JAN-19 14:14

Lab Sample ID W8VM190123-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD

Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
Ethylbenzene	20	20.94	20			4.7	30		Linear
m,p-Xylenes	40	42.49	40			6.225	30		Linear
o-Xylene	20	20.11	20			0.55	30		Linear
Styrene	20	20.52	20			2.6	30		Linear
Bromoform	0.3193	0.39074		.1		22.37394	30		Averaged
Isopropylbenzene	20	19.77	20			-1.15	30		Linear
1,1,2,2-Tetrachloroethane	0.6615	0.60023		.3		-9.26228	30		Averaged
1,2,3-Trichloropropane	0.1907	0.1612		.01		-15.46932	30		Averaged
Bromobenzene	0.6963	0.72163		.01		3.6378	30		Averaged
n-Propylbenzene	2.3082	2.4895		.01		7.85461	30		Averaged
1,3,5-Trimethylbenzene	20	18.84	20			-5.8	30		Linear
2-Chlorotoluene	0.622	0.64316		.01		3.40193	30		Averaged
4-Chlorotoluene	1.4421	1.47621		.01		2.3653	30		Averaged
tert-Butylbenzene	20	18.91	20			-5.45	30		Linear
1,2,4-Trimethylbenzene	20	19.25	20			-3.75	30		Linear
sec-Butylbenzene	20	19.94	20			-0.3	30		Linear
4-Isopropyltoluene	20	19.44	20			-2.8	30		Linear
1,3-Dichlorobenzene	1.299	1.35154		.01		4.04465	30		Averaged
1,4-Dichlorobenzene	1.4496	1.37631		.01		-5.05588	30		Averaged
n-Butylbenzene	20	19.19	20			-4.05	30		Linear
1,2-Dichlorobenzene	1.2667	1.28722		.01		1.61996	30		Averaged
1,2-Dibromo-3-chloropropane	20	18.65	20			-6.75	30		Linear
1,2,4-Trichlorobenzene	20	19.68	20			-1.6	30		Linear
Hexachlorobutadiene	0.3816	0.36246		.01		-5.01572	30		Averaged
Naphthalene	20	18	20			-10	30		Linear
1,2,3-Trichlorobenzene	20	19.33	20			-3.35	30		Linear

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**			**Matrix:**	**WATER**
Lab Sample ID:	**1204202508**				
Client Sample:	**QC for batch 1841910**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1841910**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 10:50**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 10:50**				
Data File:	**012219V8\8G204BD.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**			**Matrix:**	**WATER**
Lab Sample ID:	**1204202508**				
Client Sample:	**QC for batch 1841910**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1841910**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 10:50**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 10:50**				
Data File:	**012219V8\8G204BD.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**			**Matrix:**	**WATER**
Lab Sample ID:	**1204202509**				
Client Sample:	**QC for batch 1841910**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1841910**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 09:48**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 09:48**				
Data File:	**012219V8\8G202BD.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		21.8	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		21.8	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		19.5	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		22.8	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		23.9	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		19.7	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		25.5	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		20.9	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		18.9	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		21.2	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		19.7	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		22.1	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		21.2	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		20.2	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		23.8	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		19.8	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		21.3	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		21.6	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		20.0	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		23.8	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		21.8	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		20.3	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		20.1	ug/L	0.167	0.500	0.500
71-43-2	Benzene		24.9	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		21.8	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		23.7	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		23.2	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		22.5	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		19.0	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		23.4	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		21.0	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		17.4	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		21.4	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		19.2	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		22.7	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		24.6	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		22.2	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		22.1	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**			**Matrix:**	**WATER**
Lab Sample ID:	**1204202509**				
Client Sample:	**QC for batch 1841910**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1841910**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/22/2019 09:48**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/22/2019 09:48**				
Data File:	**012219V8\8G202BD.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		20.3	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		20.0	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		22.8	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		19.7	ug/L	0.167	0.500	0.500
100-42-5	Styrene		21.3	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		24.5	ug/L	0.167	0.500	0.500
108-88-3	Toluene		22.7	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		24.3	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		17.9	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		17.4	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		23.8	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		21.9	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		44.4	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		19.4	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		22.3	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		21.1	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		20.3	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		20.0	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		19.8	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		20.5	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		20.6	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		20.0	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 14:44**	**Matrix:**	**W**
Lab Sample ID:	**1204202510**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**QC for batch 1841910**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40651-001PS**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/23/2019 20:14**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/23/2019 20:14**				
Data File:	**012319V8\8G322.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		21.5	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		23.0	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		18.4	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		21.3	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		23.3	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		20.6	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		24.7	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		18.7	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		17.3	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		18.8	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		18.3	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		20.9	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		19.6	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		20.5	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		25.4	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		18.5	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		20.1	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		21.1	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		18.7	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		22.4	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		20.5	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		19.2	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		18.6	ug/L	0.167	0.500	0.500
71-43-2	Benzene		25.4	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		20.5	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		23.7	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		23.9	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		20.3	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		18.7	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		23.3	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		20.7	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		17.5	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		23.3	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		19.3	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		21.7	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		24.8	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		18.8	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		21.3	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 14:44**	**Matrix:**	**W**
Lab Sample ID:	**1204202510**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**QC for batch 1841910**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40651-001PS**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/23/2019 20:14**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/23/2019 20:14**				
Data File:	**012319V8\8G322.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		17.7	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		18.5	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		22.9	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		17.8	ug/L	0.167	0.500	0.500
100-42-5	Styrene		21.0	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		23.1	ug/L	0.167	0.500	0.500
108-88-3	Toluene		22.0	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		24.0	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		17.9	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		17.3	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		23.9	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		21.0	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		43.5	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		17.7	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		20.8	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		20.9	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		18.8	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		20.8	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		17.9	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		20.8	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		18.5	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		16.8	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 14:44**	**Matrix:**	**W**
Lab Sample ID:	**1204202511**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**QC for batch 1841910**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40651-001PSD**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/23/2019 20:45**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/23/2019 20:45**				
Data File:	**012319V8\8G323.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		20.7	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		22.3	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		18.1	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		21.9	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		22.3	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		20.5	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		24.6	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		19.4	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		17.3	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		19.9	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		19.0	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		21.3	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		20.2	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		20.7	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		24.3	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		18.8	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		20.6	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		21.0	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		19.3	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		23.0	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		20.5	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		19.9	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		19.2	ug/L	0.167	0.500	0.500
71-43-2	Benzene		25.1	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		21.1	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		24.1	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		22.5	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		21.2	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		18.8	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		22.8	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		20.8	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		17.5	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		23.2	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		21.7	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		21.6	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		22.7	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		19.8	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		21.3	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**	**Date Collected:**	**01/10/2019 14:44**	**Matrix:**	**W**
Lab Sample ID:	**1204202511**	**Date Received:**	**01/12/2019 08:50**		
Client Sample:	**QC for batch 1841910**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40651-001PSD**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/23/2019 20:45**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/23/2019 20:45**				
Data File:	**012319V8\8G323.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		19.2	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		19.2	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		22.9	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		18.3	ug/L	0.167	0.500	0.500
100-42-5	Styrene		20.8	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		22.4	ug/L	0.167	0.500	0.500
108-88-3	Toluene		21.8	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		23.6	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		19.2	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		19.6	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		24.0	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		21.5	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		43.5	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		18.3	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		21.4	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		20.4	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		19.5	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		21.2	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		18.1	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		21.2	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		19.2	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		17.2	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**			**Matrix:**	**DRINKING WATER (POTABI**
Lab Sample ID:	**1204203591**				
Client Sample:	**QC for batch 1841910**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1841910**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/23/2019 10:50**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/23/2019 10:50**				
Data File:	**012319V8\8G304BD.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**			**Matrix:**	**DRINKING WATER (POTABI**
Lab Sample ID:	**1204203591**				
Client Sample:	**QC for batch 1841910**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1841910**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/23/2019 10:50**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/23/2019 10:50**				
Data File:	**012319V8\8G304BD.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**			**Matrix:**	**DRINKING WATER (POTABI**
Lab Sample ID:	**1204203592**				
Client Sample:	**QC for batch 1841910**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1841910**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/23/2019 09:47**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/23/2019 09:47**				
Data File:	**012319V8\8G302BD.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		20.3	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		23.1	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		18.2	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		21.7	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		22.3	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		20.2	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		27.3	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		19.3	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		16.9	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		19.7	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		19.3	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		21.2	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		20.3	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		21.0	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		25.1	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		18.8	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		20.8	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		21.2	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		19.0	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		25.8	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		20.7	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		20.5	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		19.4	ug/L	0.167	0.500	0.500
71-43-2	Benzene		25.3	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		20.7	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		23.7	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		22.9	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		24.5	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		18.1	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		23.0	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		20.4	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		16.9	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		21.9	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		19.3	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		22.0	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		22.5	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		19.7	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		20.9	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40650**			**Matrix:**	**DRINKING WATER (POTABI**
Lab Sample ID:	**1204203592**				
Client Sample:	**QC for batch 1841910**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1841910**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1841910**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/23/2019 09:47**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/23/2019 09:47**				
Data File:	**012319V8\8G302BD.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		19.0	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		19.8	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		22.3	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		18.0	ug/L	0.167	0.500	0.500
100-42-5	Styrene		20.5	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		22.6	ug/L	0.167	0.500	0.500
108-88-3	Toluene		21.6	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		24.1	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		17.7	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		18.2	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		25.2	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		23.2	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		42.5	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		19.2	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		21.6	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		20.1	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		19.9	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		21.3	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		18.9	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		21.0	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		20.5	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		18.7	ug/L	0.330	1.00	1.00

Miscellaneous

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

01/08/2019

01/10/2019

Date: 1/7/2019 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42

Daily Instrument Readings:
Multiplier Voltage: 1575

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 1/7/2019

Cl test lot # 64312

Sequence Number: 010719V8

	Daily Standard Solution ID#	Volume Added for Purge (ul) Blk/ Smpl	CCV	MS/ LCS	BFB
IS/SS	IVM170915-03	1	1	1	
ICV[A]	W8VM190107-08			20uL ea.	
BFB	IVM181212-01				1

Purge Amount

5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
7 Jan 2019 09:32	8E103.D	IVM181212-01	GEL	BFB	5ML	1	PH<2	1	W	PXY1	N/A	O	
7 Jan 2019 10:04	8E104.D	W8VM190107-01	VSTD0005	ICAL	5ML	1	PH<2	2	W	PXY1	N/A	X	MIX[A] UVM181127-04/UVM181228-04B
7 Jan 2019 10:35	8E105.D	W8VM190107-02	VSTD001	ICAL	5ML	1	PH<2	3	W	PXY1	N/A	O	MIX[A] UVM181127-05/UVM181228-05B
7 Jan 2019 11:07	8E106.D	W8VM190107-03	VSTD005	ICAL	5ML	1	PH<2	4	W	PXY1	N/A	O	MIX[A] UVM181127-07/UVM181228-07B
7 Jan 2019 11:38	8E107.D	W8VM190107-04	VSTD010	ICAL	5ML	1	PH<2	5	W	PXY1	N/A	O	MIX[A] UVM181127-08/UVM181228-08B
7 Jan 2019 12:09	8E108.D	W8VM190107-05	VSTD020	ICAL	5ML	1	PH<2	6	W	PXY1	N/A	O	MIX[A] UVM181127-09/UVM181228-09B
7 Jan 2019 12:40	8E109.D	W8VM190107-06	VSTD040	ICAL	5ML	1	PH<2	7	W	PXY1	N/A	O	MIX[A] UVM181127-09/UVM181228-09B
7 Jan 2019 13:11	8E110.D	W8VM190107-07	VSTD050	ICAL	5ML	1	PH<2	8	W	PXY1	N/A	O	MIX[A] UVM181127-09/UVM181228-09B
7 Jan 2019 13:42	8E111.D	BLANK	GEL	BLANK	5ML	1	PH<2	9	W	PXY1	N/A	X	RINSE
7 Jan 2019 14:14	8E112.D	W8VM190107-01	VSTD0005	ICAL	5ML	1	PH<2	10	W	PXY1	N/A	O	MIX[A] UVM181127-04/UVM181228-04B
7 Jan 2019 14:45	8E113.D	W8VM190107-08	ICV	ICV	5ML	1	PH<2	11	W	PXY1	N/A	O	MIX[A] UVM181023-10B/UVM181228-10B

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

01/28/2019

01/28/2019

Date: 1/22/2019 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42 Daily Instrument Readings:

Multiplier Voltage: 1706

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 1/7/2019

Cl test lot # 64312

Sequence Number: 012219V8

Daily Standard Volume Added for Purge (ul)

	Solution ID#	Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W8VM190122-01			20uL ea.	
IS/SS	IVM170915-03	1	1	1	
LCS/MS	W8VM190122-01			20uL ea.	
BFB	IVM190109-01				1
SHORT			5uL ea.	5uL ea.	

Purge Amount

5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
1/22/2019 9:16	8G201.D	IVM190109-01	GEL	BFB	5ML	1	N/A	1	W	PXY1	N/A	O	
1/22/2019 9:48	8G202.D	W8VM190122-01	GEL	CCV	5ML	1	PH<2	2	W	PXY1	N/A	O	MIX[A]
1/22/2019 10:19	8G203.D	120420	GEL	BLANK	5ML	1	PH<2	3	W	PXY1	N/A	X	RINSE
1/22/2019 10:50	8G204.D	120420	GEL	BLANK	5ML	1	PH<2	4	W	PXY1	N/A	O	
1/22/2019 11:21	8G205.D	468831009	BRKL	1841234	5ML	1	PH<2	5	W	PXY1	N	O	
1/22/2019 11:53	8G206.D	468814001	BRKL	1841234	5ML	1	PH<2	6	W	PXY1	N	O	
1/22/2019 12:24	8G207.D	468814002	BRKL	1841234	5ML	1	PH<2	7	W	PXY1	N	O	
1/22/2019 12:56	8G208.D	468814003	BRKL	1841234	5ML	1	PH<2	8	W	PXY1	N	O	
1/22/2019 13:27	8G209.D	468814004	BRKL	1841234	5ML	1	PH<2	9	W	PXY1	N	O	
1/22/2019 13:58	8G210.D	468814005	BRKL	1841234	5ML	1	PH<2	10	W	PXY1	N	O	
1/22/2019 14:30	8G211.D	468814006	BRKL	1841234	5ML	1	PH<2	11	W	PXY1	N	O	
1/22/2019 15:01	8G212.D	468809001	BRKL	1841910	5ML	1	PH<2	12	W	PXY1	N	O	
1/22/2019 15:32	8G213.D	468809002	BRKL	1841910	5ML	1	PH<2	13	W	PXY1	N	O	
1/22/2019 16:04	8G214.D	468816001	BRKL	1841910	5ML	1	PH<2	14	W	PXY1	N	O	
1/22/2019 16:35	8G215.D	468816002	BRKL	1841910	5ML	1	PH<2	15	W	PXY1	N	O	
1/22/2019 17:07	8G216.D	468816003	BRKL	1841910	5ML	1	PH<2	16	W	PXY1	N	O	
1/22/2019 17:38	8G217.D	468816004	BRKL	1841910	5ML	1	PH<2	17	W	PXY1	N	O	
1/22/2019 18:10	8G218.D	468816005	BRKL	1841910	5ML	1	PH<2	18	W	PXY1	N	O	
1/22/2019 18:41	8G219.D	469210001	DAVS	1841910	5ML	1	PH<2	19	W	PXY1	N	O	
1/22/2019 19:13	8G220.D	469210002	DAVS	1841910	5ML	1	PH<2	20	W	PXY1	N	O	
1/22/2019 19:44	8G221.D	1204200904	BRKL	1841234	5ML	1	PH<2	21	W	PXY1	N	O	MIX[A] 468831005PS
1/22/2019 20:15	8G222.D	1204200905	BRKL	1841234	5ML	1	PH<2	22	W	PXY1	N	O	MIX[A] 468831005PSD
1/22/2019 20:47	8G223.D	1204202510	BRKL	1841910	5ML	1	PH<2	23	W	PXY1	N	X	MIX[A] 468816001PS; PSD out of tune
1/22/2019 21:18	8G224.D	1204202511	BRKL	1841910	5ML	1	PH<2	24	W	PXY1	N	X	MIX[A] 468816001PSD; Out of tune

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

01/28/2019

01/28/2019

Date: 1/23/2019 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42

Daily Instrument Readings:
Multiplier Voltage: 1706

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 1/7/2019

Cl test lot # 64312

Sequence Number: 012319V8

Daily Standard — Volume Added for Purge (ul)

	Solution ID#	Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W8VM190123-01			20uL ea.	
IS/SS	IVM170915-03	1	1	1	
LCS/MS	W8VM190123-01			20uL ea.	
BFB	IVM190109-01				1
SHORT			5uL ea.	5uL ea.	

Purge Amount

5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
1/23/2019 9:15	8G301.D	IVM190109-01	GEL	BFB	5ML	1	N/A	1	W	PXY1	N/A	O	
1/23/2019 9:47	8G302.D	W8VM190123-01	GEL	CCV	5ML	1	PH<2	2	W	PXY1	N/A	O	MIX[A]
1/23/2019 10:18	8G303.D	120420	GEL	BLANK	5ML	1	PH<2	3	W	PXY1	N/A	X	
1/23/2019 10:50	8G304.D	120420	GEL	BLANK	5ML	1	PH<2	4	W	PXY1	N/A	O	
1/23/2019 11:21	8G305.D	468818001	BRKL	1841910	5ML	1	PH<2	5	W	PXY1	N	O	
1/23/2019 11:52	8G306.D	468820001	BRKL	1841910	5ML	1	PH<2	6	W	PXY1	N	O	
1/23/2019 12:24	8G307.D	468820002	BRKL	1841910	5ML	1	PH<2	7	W	PXY1	N	O	
1/23/2019 12:55	8G308.D	468820003	BRKL	1841910	5ML	1	PH<2	8	W	PXY1	N	O	
1/23/2019 13:26	8G309.D	468822001	BRKL	1841910	5ML	1	PH<2	9	W	PXY1	N	O	
1/23/2019 13:58	8G310.D	468822002	BRKL	1841910	5ML	1	PH<2	10	W	PXY1	N	O	
1/23/2019 14:29	8G311.D	468822003	BRKL	1841910	5ML	1	PH<2	11	W	PXY1	N	O	
1/23/2019 15:01	8G312.D	468822004	BRKL	1841910	5ML	1	PH<2	12	W	PXY1	N	O	
1/23/2019 15:32	8G313.D	468822005	BRKL	1841910	5ML	1	PH<2	13	W	PXY1	N	O	
1/23/2019 16:03	8G314.D	468827001	BRKL	1841910	5ML	1	PH<2	14	W	PXY1	N	O	
1/23/2019 16:34	8G315.D	468827002	BRKL	1841910	5ML	1	PH<2	15	W	PXY1	N	O	
1/23/2019 17:06	8G316.D	468809003	BRKL	1842390	5ML	1	PH<2	16	W	PXY1	N	O	
1/23/2019 17:37	8G317.D	468809004	BRKL	1842390	5ML	1	PH<2	17	W	PXY1	N	O	
1/23/2019 18:09	8G318.D	468809005	BRKL	1842390	5ML	1	PH<2	18	W	PXY1	N	O	
1/23/2019 18:40	8G319.D	468812001	BRKL	1842390	5ML	1	PH<2	19	W	PXY1	N	O	
1/23/2019 19:11	8G320.D	468812002	BRKL	1842390	5ML	1	PH<2	20	W	PXY1	N	O	
1/23/2019 19:42	8G321.D	469157011	BRKL	1842390	5ML	1	PH<2	21	W	PXY1	N	O	
1/23/2019 20:14	8G322.D	1204202510	BRKL	1841910	5ML	1	PH<2	22	W	PXY1	N	O	MIX[A] 468818001PS
1/23/2019 20:45	8G323.D	1204202511	BRKL	1841910	5ML	1	PH<2	23	W	PXY1	N	O	MIX[A] 468818001PSD

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
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gel.com

February 21, 2019

Mr. Robert F. Howe
Brookhaven National Laboratory
Building 462
Upton, New York 11973-5000

Re: Project - OU3 B96
Chain of Custody - 40734
Project Manager -V. RACANIELLO
Account # - 22486
Release # -470756

SDG: 40734

Dear Mr. Howe:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 07, 2019. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4453.

Sincerely,

Kaitlyn Stone for
Edith Kent
Project Manager

Purchase Order: 310464
Chain of Custody: 40734
Enclosures

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Case Narrative

Case Narrative
for
Brookhaven National Laboratory (310464)
SDG: 40734
Work Order: 470756

February 21, 2019

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample Receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 07, 2019 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
470756001	40734-001
470756002	40734-002
470756003	40734-003

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: GC/MS Volatile.

Kaitlyn Stone for
Edith Kent
Project Manager

Chain of Custody

470756

Page 1 of 1

BROOKHAVEN
NATIONAL LABORATORY

P.O. #

Chain of Custody No. 40734

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: ~~Test America~~ GEL
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: ~~13715 Rider Trail N.~~
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: ~~Earth City~~ St: ~~MO~~ Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: ~~Ivan Vania~~ Edie Kent
1 E. Kramer	Sampler: J. Milligan	Phone: ~~314-298-8566~~
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD use TB-1 for COC # 40735

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals
001	E	G	095-151	0	2/5/19	1325	W	RTW-1 Influent	40 ML	SC	3	HCL					X				
002	E	G	095-152	0	↓	1330	W	RTW-1 Effluent	40 ML	SC	3	HCL					X				
003	E	G	TB-1	0	↓	0900	W	Trip Blank	40 ML	SC	3	HCL					X				

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milligan 2/6/19	Print	Print
Signature 1300	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print SBOONE 2/7/19	Print	Print
Signature Stacy Boone 855	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

GEL Laboratories

SAMPLE RECEIPT & REVIEW FORM

Client: BRKL	SDG/AR/COC/Work Order: 470756
Received By: STACY BOONE	Date Received: 02.07.19
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 6583 4854 1877 - 1c 6583 4854 1855 - 1c

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: see above
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR3-17 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	✓			If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA✓(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes✓ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes✓ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials EW Date 2/7/19 Page 1 of 1

GL-CHL-SR-001 Rev 6

Work Order Containers

Sample ID: 470756001
Client Sample ID: 40734-001
Description: 095-151 Water

Label: 470756001.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

07-FEB-19 10:51:41	Stacy Boone	Changed sample location from Barcode Generated to Volatiles Cooler
12-FEB-19 14:31:25	Patrick Yib	Transfered custody to batch 1848564
12-FEB-19 14:31:25	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
14-FEB-19 00:08:36	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 470756001.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

07-FEB-19 10:51:41	Stacy Boone	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 470756001.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

07-FEB-19 10:51:41	Stacy Boone	Changed sample location from Barcode Generated to Volatiles Cooler

Sample ID: 470756002
Client Sample ID: 40734-002
Description: 095-152 Water

Label: 470756002.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

07-FEB-19 10:51:41	Stacy Boone	Changed sample location from Barcode Generated to Volatiles Cooler
15-FEB-19 12:09:51	Patrick Yib	Transfered custody to batch 1848564
15-FEB-19 12:09:51	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
17-FEB-19 00:02:43	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 470756002.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

07-FEB-19 10:51:41	Stacy Boone	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 470756002.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

07-FEB-19 10:51:41	Stacy Boone	Changed sample location from Barcode Generated to Volatiles Cooler

Sample ID: 470756003
Client Sample ID: 40734-003
Description: TB-1 Water

Label: 470756003.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

07-FEB-19 10:51:41	Stacy Boone	Changed sample location from Barcode Generated to Volatiles Cooler
15-FEB-19 12:09:51	Patrick Yib	Transfered custody to batch 1848564
15-FEB-19 12:09:51	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
17-FEB-19 00:02:43	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Work Order Containers

Sample ID: **470756003**
Client Sample ID: **40734-003**
Description: **TB-1 Water**

Label: 470756003.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

07-FEB-19 10:51:41	Stacy Boone	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 470756003.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

07-FEB-19 10:51:41	Stacy Boone	Changed sample location from Barcode Generated to Volatiles Cooler

Data Review Qualifier Definitions

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 21−FEB−19

Project Specific Qualifier Definitions for GEL Client Code: BRKL

Qualifier	Qualifier Definition	Department	Fraction
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.		
J	Value is estimated		
P	Organics−−The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.	Organics	
C	Analyte has been confirmed by GC/MS analysis	Organics	Pesticide
B	The target analyte was detected in the associated blank.	Organics	
E	Concentration of the target analyte exceeds the instrument calibration range	Organics	
A	The TIC is a suspected aldol−condensation product	Organics	Semi−Volatile
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
N	Metals−−The Matrix spike sample recovery is not within specified control limits	Inorganics	
*	A quality control analyte recovery is outside of specified acceptance criteria		
N	Organics−−Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor	Organics	Semi−Volatile
H	Analytical holding time was exceeded		
**	Analyte is a surrogate compound	Organics	
<	Result is less than value reported		
>	Result is greater than value reported		
UI	Gamma Spectroscopy−−Uncertain identification	Radiological	
BD	Results are either below the MDC or tracer recovery is low	Radiological	
h	Preparation or preservation holding time was exceeded		
R	Sample results are rejected		
Z	Paint Filter Test−−Particulates passed through the filter, however no free liquids were observed.	General Chemistry	General Chem
d	5−day BOD−−The 2:1 depletion requirement was not met for this sample	General Chemistry	
B	Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL	Inorganics	Metals
^	RPD of sample and duplicate evaluated using +/−RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.		
D	Results are reported from a diluted aliquot of the sample	Organics	
N/A	RPD or %Recovery limits do not apply.		
ND	Analyte concentration is not detected above the detection limit		
E	%difference of sample and SD is >10%. Sample concentration must meet flagging criteria	Inorganics	Metals
M	M if above MDC and less than LLD	Radiological	
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
FA	Failed analysis.	Radiological	Bioassay
E	General Chemistry−−Concentration of the target analyte exceeds the instrument calibration range	General Chemistry	General Chem
JNX	Non Calibrated Compound	Organics	Volatile
UJ	Compound cannot be extracted	Organics	Semi−Volatile

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 21−FEB−19

Project Specific Qualifier Definitions for GEL Client Code: BRKL

Qualifier	Qualifier Definition	Department	Fraction
UJ	Gamma Spectroscopy−−Uncertain identification	Radiological	Rad
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.		
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.	Radiological	
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.	Radiological	
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.	Radiological	
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies	Inorganics	Metals
N1	See case narrative		
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.	Inorganics	
Y	QC Samples were not spiked with this compound	Organics	
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.	General Chemistry	General Chem
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.	Radiological	Rad
**	Analyte is a Tracer compound	Radiological	
B	The target analyte was detected in the associated blank.	General Chemistry	
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor	Organics	Volatile
e	5−day BOD−−Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes	General Chemistry	General Chem
M	REMP Result > MDC/CL and < RDL	Radiological	

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Laboratory Certifications

List of current GEL Certifications as of 21 February 2019

State	Certification
Alaska	17−018
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA024
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122019−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	9904
Pennsylvania NELAP	68−00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−19−14
Utah NELAP	SC000122018−27
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Volatile Analysis

Case Narrative

GC/MS Volatile
Technical Case Narrative
Brookhaven National Laboratory (BRKL)
SDG #: 40734
Work Order #: 470756

Product: **Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometer Applicable to EPA Method 524.2**
Analytical Method: EPA 524.2
Analytical Procedure: GL-OA-E-022 REV# 14
Analytical Batch: 1848564

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
470756001	40734-001
470756002	40734-002
470756003	40734-003
1204217625	Method Blank (MB)
1204217626	Laboratory Control Sample (LCS)
1204217627	470722001(40738-001) Post Spike (PS)
1204217628	470722001(40738-001) Post Spike Duplicate (PSD)
1204223261	Method Blank (MB)
1204223262	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Blank (MB) Statement
Target analytes were detected in the blank 1204223261 (MB) below the reporting limit.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

BRKL007 Brookhaven National Laboratory (310464)

Client SDG: 40734 GEL Work Order: 470756

The Qualifiers in this report are defined as follows:

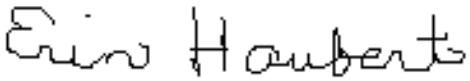
* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
B The target analyte was detected in the associated blank.
J Value is estimated
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Erin Haubert**

Date: 08 MAR 2019 **Title: Data Validator**

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**	**Date Collected:**	**02/05/2019 13:25**	**Matrix:**	**W**
Lab Sample ID:	**470756001**	**Date Received:**	**02/07/2019 08:55**		
Client Sample:	**095-151**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40734-001**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/12/2019 20:40**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/12/2019 20:40**				
Data File:	**021219V8\8J218.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**	**Date Collected:**	**02/05/2019 13:25**	**Matrix:**	**W**
Lab Sample ID:	**470756001**	**Date Received:**	**02/07/2019 08:55**		
Client Sample:	**095-151**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40734-001**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/12/2019 20:40**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/12/2019 20:40**				
Data File:	**021219V8\8J218.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		2.24	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**	**Date Collected:**	**02/05/2019 13:30**	**Matrix:**	**W**
Lab Sample ID:	**470756002**	**Date Received:**	**02/07/2019 08:55**		
Client Sample:	**095-152**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40734-002**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/15/2019 12:01**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2019 12:01**				
Data File:	**021519V8\8J506.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**	**Date Collected:**	**02/05/2019 13:30**	**Matrix:**	**W**
Lab Sample ID:	**470756002**	**Date Received:**	**02/07/2019 08:55**		
Client Sample:	**095-152**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40734-002**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/15/2019 12:01**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2019 12:01**				
Data File:	**021519V8\8J506.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**	**Date Collected:**	**02/05/2019 09:00**	**Matrix:**	**W**
Lab Sample ID:	**470756003**	**Date Received:**	**02/07/2019 08:55**		
Client Sample:	**TB-1**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40734-003**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/15/2019 12:33**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2019 12:33**				
Data File:	**021519V8\8J507.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**	**Date Collected:**	**02/05/2019 09:00**	**Matrix:**	**W**
Lab Sample ID:	**470756003**	**Date Received:**	**02/07/2019 08:55**		
Client Sample:	**TB-1**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40734-003**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/15/2019 12:33**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2019 12:33**				
Data File:	**021519V8\8J507.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Quality Control Summary

Volatile

Surrogate Recovery Report

SDG Number: 40734

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1204217626	LCS for batch 1848564	90	105	84
1204217625	MB for batch 1848564	92	104	88
470756001	40734-001	98	102	88
1204223262	LCS for batch 1848564	95	94	85
1204223261	MB for batch 1848564	103	96	85
470756002	40734-002	100	96	88
470756003	40734-003	101	99	86
1204217627	40738-001PS	98	93	96
1204217628	40738-001PSD	90	94	86

Surrogate		Acceptance Limits
DCED4	= 1,2-Dichloroethane-d4	(70%-130%)
TOL	= Toluene-d8	(70%-130%)
BFB	= Bromofluorobenzene	(70%-130%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40734
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1848564
Matrix: WATER
Lab Sample ID 1204217626
Instrument: VOA8.I
Analysis Date: 02/12/2019 12:50
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1848564

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	20.0	0.0	17.7	88	70-130
74-87-3	LCS	Chloromethane	20.0	0.0	16.8	84	70-130
75-01-4	LCS	Vinyl chloride	20.0	0.0	15.9	79	70-130
74-83-9	LCS	Bromomethane	20.0	0.0	17.1	85	70-130
75-00-3	LCS	Chloroethane	20.0	0.0	15.7	79	70-130
75-69-4	LCS	Trichlorofluoromethane	20.0	0.0	15.5	78	70-130
75-35-4	LCS	1,1-Dichloroethylene	20.0	0.0	18.8	94	70-130
75-09-2	LCS	Methylene chloride	20.0	0.0	20.3	102	70-130
1634-04-4	LCS	tert-Butyl methyl ether	20.0	0.0	18.2	91	70-130
156-60-5	LCS	trans-1,2-Dichloroethylene	20.0	0.0	18.6	93	70-130
75-34-3	LCS	1,1-Dichloroethane	20.0	0.0	22.9	114	70-130
156-59-2	LCS	cis-1,2-Dichloroethylene	20.0	0.0	20.2	101	70-130
594-20-7	LCS	2,2-Dichloropropane	20.0	0.0	22.8	114	70-130
74-97-5	LCS	Bromochloromethane	20.0	0.0	18.7	93	70-130
67-66-3	LCS	Chloroform	20.0	0.0	17.8	89	70-130
71-55-6	LCS	1,1,1-Trichloroethane	20.0	0.0	18.2	91	70-130
563-58-6	LCS	1,1-Dichloropropene	20.0	0.0	20.5	102	70-130
56-23-5	LCS	Carbon tetrachloride	20.0	0.0	18.7	94	70-130
107-06-2	LCS	1,2-Dichloroethane	20.0	0.0	16.1	81	70-130
71-43-2	LCS	Benzene	20.0	0.0	20.9	105	70-130
79-01-6	LCS	Trichloroethylene	20.0	0.0	19.3	96	70-130
78-87-5	LCS	1,2-Dichloropropane	20.0	0.0	21.7	109	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40734 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 1848564 **Matrix:** WATER

Lab Sample ID 1204217626

Instrument: VOA8.I **Analysis Date:** 02/12/2019 12:50 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 1848564

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
74-95-3	LCS	Dibromomethane	20.0	0.0	19.0	95	70-130
75-27-4	LCS	Bromodichloromethane	20.0	0.0	18.2	91	70-130
10061-01-5	LCS	cis-1,3-Dichloropropylene	20.0	0.0	16.4	82	70-130
108-88-3	LCS	Toluene	20.0	0.0	23.0	115	70-130
10061-02-6	LCS	trans-1,3-Dichloropropylene	20.0	0.0	19.4	97	70-130
79-00-5	LCS	1,1,2-Trichloroethane	20.0	0.0	22.0	110	70-130
142-28-9	LCS	1,3-Dichloropropane	20.0	0.0	21.9	110	70-130
127-18-4	LCS	Tetrachloroethylene	20.0	0.0	23.4	117	70-130
124-48-1	LCS	Dibromochloromethane	20.0	0.0	22.0	110	70-130
106-93-4	LCS	1,2-Dibromoethane	20.0	0.0	20.3	101	70-130
108-90-7	LCS	Chlorobenzene	20.0	0.0	21.3	106	70-130
100-41-4	LCS	Ethylbenzene	20.0	0.0	22.5	113	70-130
95-47-6	LCS	o-Xylene	20.0	0.0	21.3	106	70-130
100-42-5	LCS	Styrene	20.0	0.0	21.7	109	70-130
75-25-2	LCS	Bromoform	20.0	0.0	22.2	111	70-130
98-82-8	LCS	Isopropylbenzene	20.0	0.0	19.8	99	70-130
79-34-5	LCS	1,1,2,2-Tetrachloroethane	20.0	0.0	18.4	92	70-130
96-18-4	LCS	1,2,3-Trichloropropane	20.0	0.0	17.1	86	70-130
108-86-1	LCS	Bromobenzene	20.0	0.0	21.9	110	70-130
103-65-1	LCS	n-Propylbenzene	20.0	0.0	22.5	113	70-130
108-67-8	LCS	1,3,5-Trimethylbenzene	20.0	0.0	19.4	97	70-130
95-49-8	LCS	2-Chlorotoluene	20.0	0.0	22.4	112	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40734
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1848564
Matrix: WATER
Lab Sample ID 1204217626
Instrument: VOA8.I
Analysis Date: 02/12/2019 12:50
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1848564

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
106-43-4	LCS	4-Chlorotoluene	20.0	0.0	20.5	102	70-130
98-06-6	LCS	tert-Butylbenzene	20.0	0.0	18.7	93	70-130
95-63-6	LCS	1,2,4-Trimethylbenzene	20.0	0.0	19.9	99	70-130
135-98-8	LCS	sec-Butylbenzene	20.0	0.0	20.3	101	70-130
99-87-6	LCS	4-Isopropyltoluene	20.0	0.0	20.4	102	70-130
541-73-1	LCS	1,3-Dichlorobenzene	20.0	0.0	22.2	111	70-130
106-46-7	LCS	1,4-Dichlorobenzene	20.0	0.0	19.4	97	70-130
104-51-8	LCS	n-Butylbenzene	20.0	0.0	19.6	98	70-130
96-12-8	LCS	1,2-Dibromo-3-chloropropane	20.0	0.0	17.1	86	70-130
87-68-3	LCS	Hexachlorobutadiene	20.0	0.0	18.8	94	70-130
91-20-3	LCS	Naphthalene	20.0	0.0	16.9	85	70-130
87-61-6	LCS	1,2,3-Trichlorobenzene	20.0	0.0	17.8	89	70-130
120-82-1	LCS	1,2,4-Trichlorobenzene	20.0	0.0	18.9	94	70-130
630-20-6	LCS	1,1,1,2-Tetrachloroethane	20.0	0.0	22.2	111	70-130
95-50-1	LCS	1,2-Dichlorobenzene	20.0	0.0	20.7	104	70-130
179601-23-1	LCS	m,p-Xylenes	40.0	0.0	45.9	115	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40734 **Sample Type:** Post Spike

Client ID: 40738-001PS **Matrix:** W

Lab Sample ID 1204217627

Instrument: VOA8.I **Analysis Date:** 02/15/2019 19:50 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 1848564

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
75-34-3	PS	1,1-Dichloroethane	20.0	0.230	J	23.5	116	70-130
75-71-8	PS	Dichlorodifluoromethane	20.0	0.00	U	19.3	96	70-130
74-87-3	PS	Chloromethane	20.0	0.00	U	21.1	105	70-130
75-01-4	PS	Vinyl chloride	20.0	0.00	U	20.1	100	70-130
74-83-9	PS	Bromomethane	20.0	0.00	U	21.4	107	70-130
75-00-3	PS	Chloroethane	20.0	0.00	U	20.2	101	70-130
75-69-4	PS	Trichlorofluoromethane	20.0	0.00	U	21.1	105	70-130
75-35-4	PS	1,1-Dichloroethylene	20.0	0.00	U	20.8	104	70-130
75-09-2	PS	Methylene chloride	20.0	0.00	U	24.1	121	70-130
1634-04-4	PS	tert-Butyl methyl ether	20.0	0.00	U	19.9	100	70-130
156-60-5	PS	trans-1,2-Dichloroethylene	20.0	0.00	U	21.6	108	70-130
156-59-2	PS	cis-1,2-Dichloroethylene	20.0	0.00	U	23.4	117	70-130
594-20-7	PS	2,2-Dichloropropane	20.0	0.00	U	22.1	110	70-130
74-97-5	PS	Bromochloromethane	20.0	0.00	U	21.8	109	70-130
67-66-3	PS	Chloroform	20.0	0.00	U	20.8	104	70-130
563-58-6	PS	1,1-Dichloropropene	20.0	0.00	U	23.7	119	70-130
56-23-5	PS	Carbon tetrachloride	20.0	0.00	U	21.6	108	70-130
107-06-2	PS	1,2-Dichloroethane	20.0	0.00	U	18.7	94	70-130
71-43-2	PS	Benzene	20.0	0.00	U	24.4	122	70-130
79-01-6	PS	Trichloroethylene	20.0	0.00	U	21.7	108	70-130
78-87-5	PS	1,2-Dichloropropane	20.0	0.00	U	25.0	125	70-130
74-95-3	PS	Dibromomethane	20.0	0.00	U	22.2	111	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40734 **Sample Type:** Post Spike

Client ID: 40738-001PS **Matrix:** W

Lab Sample ID 1204217627

Instrument: VOA8.I **Analysis Date:** 02/15/2019 19:50 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 1848564

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
75-27-4	PS	Bromodichloromethane	20.0	0.00	U	21.4	107	70-130
10061-01-5	PS	cis-1,3-Dichloropropylene	20.0	0.00	U	19.4	97	70-130
108-88-3	PS	Toluene	20.0	0.00	U	22.3	112	70-130
10061-02-6	PS	trans-1,3-Dichloropropylene	20.0	0.00	U	19.9	99	70-130
79-00-5	PS	1,1,2-Trichloroethane	20.0	0.00	U	21.7	109	70-130
142-28-9	PS	1,3-Dichloropropane	20.0	0.00	U	21.5	107	70-130
127-18-4	PS	Tetrachloroethylene	20.0	0.00	U	22.5	112	70-130
124-48-1	PS	Dibromochloromethane	20.0	0.00	U	21.5	108	70-130
106-93-4	PS	1,2-Dibromoethane	20.0	0.00	U	20.9	105	70-130
108-90-7	PS	Chlorobenzene	20.0	0.00	U	21.7	108	70-130
100-41-4	PS	Ethylbenzene	20.0	0.00	U	21.4	107	70-130
95-47-6	PS	o-Xylene	20.0	0.00	U	21.3	106	70-130
100-42-5	PS	Styrene	20.0	0.00	U	22.7	113	70-130
75-25-2	PS	Bromoform	20.0	0.00	U	23.0	115	70-130
98-82-8	PS	Isopropylbenzene	20.0	0.00	U	18.7	94	70-130
79-34-5	PS	1,1,2,2-Tetrachloroethane	20.0	0.00	U	18.9	95	70-130
96-18-4	PS	1,2,3-Trichloropropane	20.0	0.00	U	17.6	88	70-130
108-86-1	PS	Bromobenzene	20.0	0.00	U	21.2	106	70-130
103-65-1	PS	n-Propylbenzene	20.0	0.00	U	21.8	109	70-130
108-67-8	PS	1,3,5-Trimethylbenzene	20.0	0.00	U	18.8	94	70-130
95-49-8	PS	2-Chlorotoluene	20.0	0.00	U	21.9	109	70-130
106-43-4	PS	4-Chlorotoluene	20.0	0.00	U	19.5	97	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40734 **Sample Type:** Post Spike

Client ID: 40738-001PS **Matrix:** W

Lab Sample ID 1204217627

Instrument: VOA8.I **Analysis Date:** 02/15/2019 19:50 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 1848564

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
98-06-6	PS	tert-Butylbenzene	20.0	0.00	U	17.1	85	70-130
95-63-6	PS	1,2,4-Trimethylbenzene	20.0	0.00	U	19.3	97	70-130
135-98-8	PS	sec-Butylbenzene	20.0	0.00	U	19.4	97	70-130
99-87-6	PS	4-Isopropyltoluene	20.0	0.00	U	19.0	95	70-130
541-73-1	PS	1,3-Dichlorobenzene	20.0	0.00	U	20.7	103	70-130
106-46-7	PS	1,4-Dichlorobenzene	20.0	0.00	U	19.0	95	70-130
104-51-8	PS	n-Butylbenzene	20.0	0.00	U	18.0	90	70-130
96-12-8	PS	1,2-Dibromo-3-chloropropane	20.0	0.00	U	17.1	86	70-130
87-68-3	PS	Hexachlorobutadiene	20.0	0.00	U	17.2	86	70-130
91-20-3	PS	Naphthalene	20.0	0.00	U	16.6	83	70-130
87-61-6	PS	1,2,3-Trichlorobenzene	20.0	0.00	U	17.5	88	70-130
120-82-1	PS	1,2,4-Trichlorobenzene	20.0	0.00	U	17.4	87	70-130
630-20-6	PS	1,1,1,2-Tetrachloroethane	20.0	0.00	U	22.3	112	70-130
95-50-1	PS	1,2-Dichlorobenzene	20.0	0.00	U	19.8	99	70-130
71-55-6	PS	1,1,1-Trichloroethane	20.0	0.500		21.1	103	70-130
179601-23-1	PS	m,p-Xylenes	40.0	0.00	U	44.5	111	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40734 **Sample Type:** Post Spike Duplicate

Client ID: 40738-001PSD **Matrix:** W

Lab Sample ID 1204217628

Instrument: VOA8.I **Analysis Date:** 02/15/2019 20:21 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 1848564

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
75-34-3	PSD	1,1-Dichloroethane	20.0	0.230	J	22.5	111	70-130	4	0-20
75-71-8	PSD	Dichlorodifluoromethane	20.0	0.00	U	20.1	100	70-130	4	0-20
74-87-3	PSD	Chloromethane	20.0	0.00	U	22.9	114	70-130	8	0-20
75-01-4	PSD	Vinyl chloride	20.0	0.00	U	22.0	110	70-130	9	0-20
74-83-9	PSD	Bromomethane	20.0	0.00	U	21.5	108	70-130	1	0-20
75-00-3	PSD	Chloroethane	20.0	0.00	U	20.3	102	70-130	1	0-20
75-69-4	PSD	Trichlorofluoromethane	20.0	0.00	U	20.4	102	70-130	3	0-20
75-35-4	PSD	1,1-Dichloroethylene	20.0	0.00	U	22.3	112	70-130	7	0-20
75-09-2	PSD	Methylene chloride	20.0	0.00	U	24.4	122	70-130	1	0-20
1634-04-4	PSD	tert-Butyl methyl ether	20.0	0.00	U	21.6	108	70-130	8	0-20
156-60-5	PSD	trans-1,2-Dichloroethylene	20.0	0.00	U	21.9	110	70-130	2	0-20
156-59-2	PSD	cis-1,2-Dichloroethylene	20.0	0.00	U	23.9	120	70-130	2	0-20
594-20-7	PSD	2,2-Dichloropropane	20.0	0.00	U	21.9	109	70-130	1	0-20
74-97-5	PSD	Bromochloromethane	20.0	0.00	U	21.6	108	70-130	1	0-20
67-66-3	PSD	Chloroform	20.0	0.00	U	20.8	104	70-130	0	0-20
563-58-6	PSD	1,1-Dichloropropene	20.0	0.00	U	25.3	126	70-130	6	0-20
56-23-5	PSD	Carbon tetrachloride	20.0	0.00	U	21.1	105	70-130	2	0-20
107-06-2	PSD	1,2-Dichloroethane	20.0	0.00	U	19.1	95	70-130	2	0-20
71-43-2	PSD	Benzene	20.0	0.00	U	24.7	124	70-130	1	0-20
79-01-6	PSD	Trichloroethylene	20.0	0.00	U	21.7	108	70-130	0	0-20
78-87-5	PSD	1,2-Dichloropropane	20.0	0.00	U	24.4	122	70-130	3	0-20
74-95-3	PSD	Dibromomethane	20.0	0.00	U	21.5	108	70-130	3	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40734 **Sample Type:** Post Spike Duplicate

Client ID: 40738-001PSD **Matrix:** W

Lab Sample ID 1204217628

Instrument: VOA8.I **Analysis Date:** 02/15/2019 20:21 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 1848564

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
75-27-4	PSD	Bromodichloromethane	20.0	0.00	U	20.7	103	70-130	3	0-20
10061-01-5	PSD	cis-1,3-Dichloropropylene	20.0	0.00	U	20.2	101	70-130	4	0-20
108-88-3	PSD	Toluene	20.0	0.00	U	22.8	114	70-130	2	0-20
10061-02-6	PSD	trans-1,3-Dichloropropylene	20.0	0.00	U	20.8	104	70-130	4	0-20
79-00-5	PSD	1,1,2-Trichloroethane	20.0	0.00	U	21.8	109	70-130	0	0-20
142-28-9	PSD	1,3-Dichloropropane	20.0	0.00	U	21.9	109	70-130	2	0-20
127-18-4	PSD	Tetrachloroethylene	20.0	0.00	U	22.8	114	70-130	1	0-20
124-48-1	PSD	Dibromochloromethane	20.0	0.00	U	22.5	112	70-130	4	0-20
106-93-4	PSD	1,2-Dibromoethane	20.0	0.00	U	21.2	106	70-130	1	0-20
108-90-7	PSD	Chlorobenzene	20.0	0.00	U	21.4	107	70-130	1	0-20
100-41-4	PSD	Ethylbenzene	20.0	0.00	U	21.5	107	70-130	0	0-20
95-47-6	PSD	o-Xylene	20.0	0.00	U	20.7	104	70-130	3	0-20
100-42-5	PSD	Styrene	20.0	0.00	U	21.2	106	70-130	7	0-20
75-25-2	PSD	Bromoform	20.0	0.00	U	23.4	117	70-130	1	0-20
98-82-8	PSD	Isopropylbenzene	20.0	0.00	U	19.5	98	70-130	4	0-20
79-34-5	PSD	1,1,2,2-Tetrachloroethane	20.0	0.00	U	19.1	96	70-130	1	0-20
96-18-4	PSD	1,2,3-Trichloropropane	20.0	0.00	U	18.3	91	70-130	4	0-20
108-86-1	PSD	Bromobenzene	20.0	0.00	U	21.2	106	70-130	0	0-20
103-65-1	PSD	n-Propylbenzene	20.0	0.00	U	22.4	112	70-130	2	0-20
108-67-8	PSD	1,3,5-Trimethylbenzene	20.0	0.00	U	19.4	97	70-130	3	0-20
95-49-8	PSD	2-Chlorotoluene	20.0	0.00	U	21.7	108	70-130	1	0-20
106-43-4	PSD	4-Chlorotoluene	20.0	0.00	U	20.1	100	70-130	3	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40734 **Sample Type:** Post Spike Duplicate

Client ID: 40738-001PSD **Matrix:** W

Lab Sample ID 1204217628

Instrument: VOA8.I **Analysis Date:** 02/15/2019 20:21 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 1848564

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
98-06-6	PSD	tert-Butylbenzene	20.0	0.00	U	18.4	92	70-130	8	0-20
95-63-6	PSD	1,2,4-Trimethylbenzene	20.0	0.00	U	19.4	97	70-130	0	0-20
135-98-8	PSD	sec-Butylbenzene	20.0	0.00	U	20.0	100	70-130	3	0-20
99-87-6	PSD	4-Isopropyltoluene	20.0	0.00	U	19.5	98	70-130	3	0-20
541-73-1	PSD	1,3-Dichlorobenzene	20.0	0.00	U	21.1	105	70-130	2	0-20
106-46-7	PSD	1,4-Dichlorobenzene	20.0	0.00	U	19.3	97	70-130	2	0-20
104-51-8	PSD	n-Butylbenzene	20.0	0.00	U	18.9	95	70-130	5	0-20
96-12-8	PSD	1,2-Dibromo-3-chloropropane	20.0	0.00	U	18.0	90	70-130	5	0-20
87-68-3	PSD	Hexachlorobutadiene	20.0	0.00	U	18.7	93	70-130	8	0-20
91-20-3	PSD	Naphthalene	20.0	0.00	U	18.1	90	70-130	8	0-20
87-61-6	PSD	1,2,3-Trichlorobenzene	20.0	0.00	U	18.8	94	70-130	7	0-20
120-82-1	PSD	1,2,4-Trichlorobenzene	20.0	0.00	U	18.2	91	70-130	4	0-20
630-20-6	PSD	1,1,1,2-Tetrachloroethane	20.0	0.00	U	21.7	108	70-130	3	0-20
95-50-1	PSD	1,2-Dichlorobenzene	20.0	0.00	U	20.4	102	70-130	3	0-20
71-55-6	PSD	1,1,1-Trichloroethane	20.0	0.500		21.3	104	70-130	1	0-20
179601-23-1	PSD	m,p-Xylenes	40.0	0.00	U	44.6	111	70-130	0	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40734
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1848564
Matrix: WATER
Lab Sample ID 1204223262
Instrument: VOA8.I
Analysis Date: 02/15/2019 10:27
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1848564

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	20.0	0.0	18.1	90	70-130
74-87-3	LCS	Chloromethane	20.0	0.0	19.4	97	70-130
75-01-4	LCS	Vinyl chloride	20.0	0.0	18.3	92	70-130
74-83-9	LCS	Bromomethane	20.0	0.0	19.9	100	70-130
75-00-3	LCS	Chloroethane	20.0	0.0	19.1	95	70-130
75-69-4	LCS	Trichlorofluoromethane	20.0	0.0	18.3	92	70-130
75-35-4	LCS	1,1-Dichloroethylene	20.0	0.0	20.0	100	70-130
75-09-2	LCS	Methylene chloride	20.0	0.0	23.3	117	70-130
1634-04-4	LCS	tert-Butyl methyl ether	20.0	0.0	19.2	96	70-130
156-60-5	LCS	trans-1,2-Dichloroethylene	20.0	0.0	21.4	107	70-130
75-34-3	LCS	1,1-Dichloroethane	20.0	0.0	23.9	120	70-130
156-59-2	LCS	cis-1,2-Dichloroethylene	20.0	0.0	23.3	117	70-130
594-20-7	LCS	2,2-Dichloropropane	20.0	0.0	24.1	120	70-130
74-97-5	LCS	Bromochloromethane	20.0	0.0	21.5	107	70-130
67-66-3	LCS	Chloroform	20.0	0.0	20.2	101	70-130
71-55-6	LCS	1,1,1-Trichloroethane	20.0	0.0	20.5	103	70-130
563-58-6	LCS	1,1-Dichloropropene	20.0	0.0	23.6	118	70-130
56-23-5	LCS	Carbon tetrachloride	20.0	0.0	20.5	102	70-130
107-06-2	LCS	1,2-Dichloroethane	20.0	0.0	19.2	96	70-130
71-43-2	LCS	Benzene	20.0	0.0	24.5	122	70-130
79-01-6	LCS	Trichloroethylene	20.0	0.0	20.9	105	70-130
78-87-5	LCS	1,2-Dichloropropane	20.0	0.0	24.5	123	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40734
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1848564
Matrix: WATER
Lab Sample ID 1204223262
Instrument: VOA8.I
Analysis Date: 02/15/2019 10:27
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1848564

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
74-95-3	LCS	Dibromomethane	20.0	0.0	21.4	107	70-130
75-27-4	LCS	Bromodichloromethane	20.0	0.0	20.7	104	70-130
10061-01-5	LCS	cis-1,3-Dichloropropylene	20.0	0.0	19.4	97	70-130
108-88-3	LCS	Toluene	20.0	0.0	22.0	110	70-130
10061-02-6	LCS	trans-1,3-Dichloropropylene	20.0	0.0	20.1	101	70-130
79-00-5	LCS	1,1,2-Trichloroethane	20.0	0.0	21.8	109	70-130
142-28-9	LCS	1,3-Dichloropropane	20.0	0.0	21.8	109	70-130
127-18-4	LCS	Tetrachloroethylene	20.0	0.0	22.4	112	70-130
124-48-1	LCS	Dibromochloromethane	20.0	0.0	21.5	108	70-130
106-93-4	LCS	1,2-Dibromoethane	20.0	0.0	20.4	102	70-130
108-90-7	LCS	Chlorobenzene	20.0	0.0	21.2	106	70-130
100-41-4	LCS	Ethylbenzene	20.0	0.0	21.3	107	70-130
95-47-6	LCS	o-Xylene	20.0	0.0	20.9	105	70-130
100-42-5	LCS	Styrene	20.0	0.0	21.9	109	70-130
75-25-2	LCS	Bromoform	20.0	0.0	22.1	110	70-130
98-82-8	LCS	Isopropylbenzene	20.0	0.0	18.8	94	70-130
79-34-5	LCS	1,1,2,2-Tetrachloroethane	20.0	0.0	18.8	94	70-130
96-18-4	LCS	1,2,3-Trichloropropane	20.0	0.0	17.3	86	70-130
108-86-1	LCS	Bromobenzene	20.0	0.0	21.3	107	70-130
103-65-1	LCS	n-Propylbenzene	20.0	0.0	21.8	109	70-130
108-67-8	LCS	1,3,5-Trimethylbenzene	20.0	0.0	18.7	94	70-130
95-49-8	LCS	2-Chlorotoluene	20.0	0.0	21.9	110	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40734
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1848564
Matrix: WATER
Lab Sample ID 1204223262
Instrument: VOA8.I
Analysis Date: 02/15/2019 10:27
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1848564

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
106-43-4	LCS	4-Chlorotoluene	20.0	0.0	19.6	98	70-130
98-06-6	LCS	tert-Butylbenzene	20.0	0.0	18.4	92	70-130
95-63-6	LCS	1,2,4-Trimethylbenzene	20.0	0.0	19.3	97	70-130
135-98-8	LCS	sec-Butylbenzene	20.0	0.0	19.3	96	70-130
99-87-6	LCS	4-Isopropyltoluene	20.0	0.0	19.2	96	70-130
541-73-1	LCS	1,3-Dichlorobenzene	20.0	0.0	21.0	105	70-130
106-46-7	LCS	1,4-Dichlorobenzene	20.0	0.0	19.3	96	70-130
104-51-8	LCS	n-Butylbenzene	20.0	0.0	18.4	92	70-130
96-12-8	LCS	1,2-Dibromo-3-chloropropane	20.0	0.0	16.2	81	70-130
87-68-3	LCS	Hexachlorobutadiene	20.0	0.0	17.9	90	70-130
91-20-3	LCS	Naphthalene	20.0	0.0	16.3	82	70-130
87-61-6	LCS	1,2,3-Trichlorobenzene	20.0	0.0	17.6	88	70-130
120-82-1	LCS	1,2,4-Trichlorobenzene	20.0	0.0	17.4	87	70-130
630-20-6	LCS	1,1,1,2-Tetrachloroethane	20.0	0.0	21.0	105	70-130
95-50-1	LCS	1,2-Dichlorobenzene	20.0	0.0	20.2	101	70-130
179601-23-1	LCS	m,p-Xylenes	40.0	0.0	44.4	111	70-130

Method Blank Summary

SDG Number:	**40734**	**Client:**	**BRKL007**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1848564**	**Instrument ID:**	**VOA8.I**	**Data File:**	**021219V8\8J205BR.D**
Lab Sample ID:	**1204217625**	**Prep Date:**	**02/12/2019 13:52**	**Analyzed:**	**02/12/19 13:52**
Column:	**DB-624**				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 1848564	1204217626	021219V8\8J203BR.D	02/12/19	1250
02	40734-001	470756001	021219V8\8J218.D	02/12/19	2040

Method Blank Summary

SDG Number:	**40734**	**Client:**	**BRKL007**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1848564**	**Instrument ID:**	**VOA8.I**	**Data File:**	**021519V8\8J505BR.D**
Lab Sample ID:	**1204223261**	**Prep Date:**	**02/15/2019 11:30**	**Analyzed:**	**02/15/19 11:30**
Column:	**DB-624**				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
04	LCS for batch 1848564	1204223262	021519V8\8J503BR.D	02/15/19	1027
05	40734-002	470756002	021519V8\8J506.D	02/15/19	1201
06	40734-003	470756003	021519V8\8J507.D	02/15/19	1233
07	40738-001PS	1204217627	021519V8\8J521.D	02/15/19	1950
08	40738-001PSD	1204217628	021519V8\8J522.D	02/15/19	2021

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 40734

Instrument ID: VOA8.I **Injection Date/Time:** 07-JAN-19 09:32

Column Description: DB-624 **Lab File ID** 010719V8\8E103.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.7
75	30.0 - 60.0% of mass 95	50.2
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	7.8
173	Less than 2.0% of mass 174	0
174	50.0 - 100.0% of mass 95	89.5
175	5.0 -9.0% of mass 174	6.2
176	95.0 - 101.0% of mass 174	95.7
177	5.0 - 9.0% of mass 176	6.6

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
ICALMIX[A]	W8VM190107-02	010719V8\8E105.D	07-JAN-19 10:35
ICALMIX[A]	W8VM190107-03	010719V8\8E106.D	07-JAN-19 11:07
ICALMIX[A]	W8VM190107-04	010719V8\8E107.D	07-JAN-19 11:38
ICALMIX[A]	W8VM190107-05	010719V8\8E108.D	07-JAN-19 12:09
ICALMIX[A]	W8VM190107-06	010719V8\8E109.D	07-JAN-19 12:40
ICALMIX[A]	W8VM190107-07	010719V8\8E110.D	07-JAN-19 13:11
ICALMIX[A]	W8VM190107-01	010719V8\8E112.D	07-JAN-19 14:14

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 40734

Instrument ID: VOA8.I **Injection Date/Time:** 12-FEB-19 12:18

Column Description: DB-624 **Lab File ID** 021219V8\8J201.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	16
75	30.0 - 60.0% of mass 95	47.3
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	7.5
173	Less than 2.0% of mass 174	0.7
174	50.0 - 100.0% of mass 95	97.8
175	5.0 -9.0% of mass 174	7.1
176	95.0 - 101.0% of mass 174	96.8
177	5.0 - 9.0% of mass 176	6

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCVMIX[A]01	W8VM190212-01	021219V8\8J203.D	12-FEB-19 12:50
BLK01LCS	1204217626	021219V8\8J203BR.D	12-FEB-19 12:50
BLK01	1204217625	021219V8\8J205BR.D	12-FEB-19 13:52
40734-001	470756001	021219V8\8J218.D	12-FEB-19 20:40

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 40734

Instrument ID: VOA8.I **Injection Date/Time:** 15-FEB-19 09:56

Column Description: DB-624 **Lab File ID** 021519V8\8J501.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	16.5
75	30.0 - 60.0% of mass 95	51.2
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	9
173	Less than 2.0% of mass 174	1.1
174	50.0 - 100.0% of mass 95	91.3
175	5.0 -9.0% of mass 174	6.5
176	95.0 - 101.0% of mass 174	97
177	5.0 - 9.0% of mass 176	6.4

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCVMIX[A]02	W8VM190215-01	021519V8\8J503.D	15-FEB-19 10:27
BLK02LCS	1204223262	021519V8\8J503BR.D	15-FEB-19 10:27
BLK02	1204223261	021519V8\8J505BR.D	15-FEB-19 11:30
40734-002	470756002	021519V8\8J506.D	15-FEB-19 12:01
40734-003	470756003	021519V8\8J507.D	15-FEB-19 12:33
40738-001MS	1204217627	021519V8\8J521.D	15-FEB-19 19:50
40738-001MSD	1204217628	021519V8\8J522.D	15-FEB-19 20:21

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 40734

Instrument: VOA8.I

STD Analysis Time: 12-FEB-19 12:50

GC Column: DB-624

Data File: 021219V8\8J203.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	1601579	11.0	1235006	14.2	988068	16.7
Upper Limit	3203158	11.5	2470012	14.7	1976136	17.2
Lower Limit	800790	10.5	617503	13.7	494034	16.2
Sample ID						
BLK01LCS	1601579	11.0	1235006	14.2	988068	16.7
BLK01	1416293	11.0	1079448	14.2	683331	16.7
40734-001	1171242	11.0	977266	14.2	594259	16.7

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 40734

Instrument: VOA8.I

STD Analysis Time: 15-FEB-19 10:27

GC Column: DB-624

Data File: 021519V8\8J503.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	1525821	11.0	1405389	14.2	1102034	16.7
Upper Limit	3051642	11.5	2810778	14.7	2204068	17.2
Lower Limit	762911	10.5	702695	13.7	551017	16.2
Sample ID						
BLK02LCS	1525821	11.0	1405389	14.2	1102034	16.7
BLK02	1254966	11.0	1147275	14.2	709444	16.7
40734-002	1225079	11.0	1117421	14.2	718152	16.7
40734-003	1223761	11.0	1076736	14.2	694620	16.7
40738-001MS	1334335	11.0	1244932	14.2	996435	16.7
40738-001MSD	1429148	11.0	1302356	14.2	997327	16.7

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Standards

Low level SW846 8260B and Regular level 8260B and EPA 624

Calibration Standard Concentration Levels

	Level 1	Level 1a	Level 2	Level 3	Level 4	Level 5	Level 6 #	Level 7 !	Level 7a
Fluorobenzene (IS)	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
1,2-Dichloroethane-d4(surr)		20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Dichlorodifluoromethane		0.5	1	2	5	10	20	50	100
Chloromethane		0.5	1	2	5	10	20	50	100
Vinyl chloride		0.5	1	2	5	10	20	50	100
Bromomethane		0.5	1	2	5	10	20	50	100
Chloroethane		0.5	1	2	5	10	20	50	100
Trichlorofluoromethane		0.5	1	2	5	10	20	50	100
1,1-Dichloroethene		0.5	1	2	5	10	20	50	100
Acetone	1	2.5	5	10	25	50	100	250	500
Iodomethane	1	2.5	5	10	25	50	100	250	500
Carbon disulfide	1	2.5	5	10	25	50	100	250	500
Methylene chloride		0.5	1	2	5	10	20	50	100
trans-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,1-Dichloroethane		0.5	1	2	5	10	20	50	100
Ethyl ether		0.5	1	2	5	10	20	50	100
Vinyl acetate	1	2.5	5	10	25	50	100	250	500
cis-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethene (total)		1	2	4	10	20	40	100	200
Cyclohexene		0.5	1	2	5	10	20	50	100
2-Chloroethylvinyl ether			5	10	25	50	100	250	500
2,2-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Butanone	1	2.5	5	10	25	50	100	250	500
Bromochloromethane		0.5	1	2	5	10	20	50	100
Chloroform		0.5	1	2	5	10	20	50	100
1,1,1-Trichloroethane		0.5	1	2	5	10	20	50	100
1,1-Dichloropropene		0.5	1	2	5	10	20	50	100
Carbon tetrachloride		0.5	1	2	5	10	20	50	100
Benzene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethane		0.5	1	2	5	10	20	50	100
Trichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloropropane		0.5	1	2	5	10	20	50	100
Dibromomethane		0.5	1	2	5	10	20	50	100
Bromodichloromethane		0.5	1	2	5	10	20	50	100
cis-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
tert-Butylmethylether		0.5	1	2	5	10	20	50	100
Ethyl Ether			1	2	5	10	20	50	100
Acetonitrile			25	50	125	250	500	1250	2500
Methyl acetate			5	10	25	50	100	250	500
Cyclohexane			1	2	5	10	20	50	100
Methylcyclohexane			1	2	5	10	20	50	100
n-Butyl alcohol		50	100	200	500	1000	2000	5000	10000
2-Nitropropane			5	10	25	50	100	250	500
Ethyl acetate			5	10	25	50	100	250	500
Acrolein			5	10	25	50	100	250	500
Trichlorotrifluoroethane		2	5	10	25	50	100	250	500
Allyl chloride			5	10	25	50	100	250	500
Acrylonitrile			5	10	25	50	100	250	500
1,4-Dioxane			50	100	250	500	1000	2500	5000
Isobutyl alcohol			50	100	250	500	1000	2500	5000
Methacrylonitrile			5	10	25	50	100	250	500
Propionitrile			5	10	25	50	100	250	500
Methyl methacrylate			5	10	25	50	100	250	500
Chlorotrifluoroethylene			5	10	25	50	100	150	200
2-Chloro-1,1,1-trifluoroethane			5	10	25	50	100	150	200
Tetrahydrofuran			5	10	25	50	100	250	500
tert-Butyl alcohol			50	100	250	500	1000	2500	5000
Isopropyl ether			1	2	5	10	20	50	100
Ethyl tert-butyl ether			1	2	5	10	20	50	100
Isopropyl alcohol			50	100	250	500	1000	2500	5000
Methyl tert-amyl ether			1	2	5	10	20	50	100
1-Chlorohexane			1	2	5	10	20	50	100
2-Chloro-1,3-butadiene(chloroprene)			1	2	5	10	20	50	100
Chlorobenzene-d5 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Toluene-d8 (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
4-Methyl-2-pentanone	1	2.5	5	10	25	50	100	250	500
Toluene		0.5	1	2	5	10	20	50	100
trans-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
1,1,2-Trichloroethane		0.5	1	2	5	10	20	50	100
Tetrachloroethene		0.5	1	2	5	10	20	50	100
1,3-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Hexanone	1	2.5	5	10	25	50	20	250	500
Dibromochloromethane		0.5	1	2	5	10	20	50	100
1,2-Dibromoethane		0.5	1	2	5	10	20	50	100
Chlorobenzene		0.5	1	2	5	10	20	50	100
1,1,1,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Ethylbenzene		0.5	1	2	5	10	20	50	100
m,p-Xylene		1	2	4	10	20	20	100	200
o-Xylene		0.5	1	2	5	10	20	50	100
Xylenes (total)		1.5	3	6	15	30	60	150	300
Stryene		0.5	1	2	5	10	20	50	100
Ethyl methacrylate			5	10	25	50	100	250	500
1,4-Dichlorobenzene-d4 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromofluorobenzene (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromoform		0.5	1	2	5	10	20	50	100
Isopropylbenzene		0.5	1	2	5	10	20	50	100
1,1,2,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Bromobenzene		0.5	1	2	5	10	20	50	100
1,2,3-Trichloropropane		0.5	1	2	5	10	20	50	100
n-Propylbenzene		0.5	1	2	5	10	20	50	100
2-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,3,5-Trimethylbenzene		0.5	1	2	5	10	20	50	100
4-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,2,4-Trimethylbenzene		0.5	1	2	5	10	20	50	100
sec-Butylbenzene		0.5	1	2	5	10	20	50	100
1,3-Dichlorobenzene		0.5	1	2	5	10	20	50	100
tert-Butylbenzene		0.5	1	2	5	10	20	50	100
Isopropyltoluene		0.5	1	2	5	10	20	50	100
1,4-Dichlorobenzene		0.5	1	2	5	10	20	50	100
n-Butylbenzene		0.5	1	2	5	10	20	50	100
1,2-Dichlorobenzene		0.5	1	2	5	10	20	50	100
1,2-Dibromo-3-chloropropa		0.5	1	2	5	10	20	50	100
1,2,4-Trichlorobenzene		0.5	1	2	5	10	20	50	100
Hexachlorobutadiene		0.5	1	2	5	10	20	50	100
Naphthalene		0.5	1	2	5	10	20	50	100
1,2,3-Trichlorobenzene		0.5	1	2	5	10	20	50	100
cis-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
trans-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
Pentachloroethane			5	10	25	50	100	250	500
Benzyl chloride			5	10	25	50	100	250	500
Cyclohexanone			25	50	125	250	500	1250	2500
bis(2-Chloro-isopropyl)ether			5	10	25	50	100	250	500

Method	PQL	Concentration range		
SW 846 8260B low level	Level 1 &1a	Levels 1-> 7a	IS/SS @ 20 ppb	
EPA 524.2	Level 1a	Levels 1a-> 7a	IS/SS @ 20 ppb	
SW846 8260B/624	Level 2	Levels 1a-> 7a	IS/SS @ 50 ppb	n-butyl alchol only in 1a

#: Indicates calibration verification concentration level used for low level analysis

!: Indicates calibration verification concentration level used for regular level analysis

Calibration History Report VOA8
GEL Laboratories, LLC

01/09/2019

Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

01/10/2019

Cal Lvl:10 Amt:40.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E109.D

Injection Date	Mix	Calibration File
07 Jan 2019 12:40	A	C:\msdchem\1\DATA\010719V8\8E109.D

Cal Lvl:2 Amt:0.50 Last Updated with: C:\msdchem\1\DATA\010719V8\8E112.D

Injection Date	Mix	Calibration File
07 Jan 2019 14:14	A	C:\msdchem\1\DATA\010719V8\8E112.D

Cal Lvl:3 Amt:1.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E105.D

Injection Date	Mix	Calibration File
07 Jan 2019 10:35	A	C:\msdchem\1\DATA\010719V8\8E105.D

Cal Lvl:4 Amt:2.00 None of the compounds use this level.

Injection Date	Mix	Calibration File

Cal Lvl:5 Amt:5.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E106.D

Injection Date	Mix	Calibration File
07 Jan 2019 11:07	A	C:\msdchem\1\DATA\010719V8\8E106.D

Cal Lvl:6 Amt:10.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E107.D

Injection Date	Mix	Calibration File
07 Jan 2019 11:38	A	C:\msdchem\1\DATA\010719V8\8E107.D

Cal Lvl:7 Amt:20.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E108.D

Injection Date	Mix	Calibration File
07 Jan 2019 12:09	A	C:\msdchem\1\DATA\010719V8\8E108.D

Cal Lvl:8 Amt:50.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E110.D

Injection Date	Mix	Calibration File
07 Jan 2019 13:11	A	C:\msdchem\1\DATA\010719V8\8E110.D

Cal Lvl:9 Amt:0.00 None of the compounds use this level.

Injection Date	Mix	Calibration File

VOA8-524T-010719-.M Wed Jan 09 13:22:27 2019

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

01/09/2019

01/10/2019

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
2)MA Dichlorodifluoromethane	0.2075742	0.2359308	0.2537771		0.2535455	0.2486408				
	0.2315229	0.2238049					0.2364	AVRG		7.2436
3)MA Chloromethane	1186666	20860	30344		126558	259697		1/x		
0.0057 | 0.4153 | 0.00	574076	1583892						LINR		0.9997
4)MA Vinyl chloride	0.4181729	0.4778060	0.4523909		0.4186174	0.4140580				
	0.4160268	0.4329160					0.4329	AVRG		5.5454
5)MA Bromomethane	1145944	18639	23425		115563	246923		1/x		
0.0035 | 0.3872 | 0.00	521329	1436142						LINR		0.9992
6)MA Chloroethane	0.2586149	0.3247590	0.3226304		0.2707086	0.2664661				
	0.2497859	0.2618999					0.2793	AVRG		11.1181
7)MA Trichlorofluoromethane	0.7475544	0.8939189	0.9394286		0.7972604	0.8150803				
	0.7966293	0.8302540					0.8314	AVRG		7.8024
8)MA 1,1-Dichloroethylene	0.5336141	0.6280194	0.5541476		0.5115314	0.5216894				
	0.5295831	0.5591992					0.5483	AVRG		7.1167
9)MA Methylene chloride	1056775	17833	25493		116858	241966		1/x		
0.0043 | 0.3784 | 0.00	531202	1445678						LINR		0.9996
10)MA tert-Butyl methyl ether	0.9293820	0.9146784	0.8283128		0.7955683	0.8522984				
	0.9063300	0.9667173					0.8848	AVRG		6.8849
11)MA trans-1,2-Dichloroethyle	0.4929532	0.5434724	0.5334660		0.4655420	0.4781584				
	0.4865226	0.5087505					0.5013	AVRG		5.7421
12)MA 1,1-Dichloroethane	0.5144806	0.4696439	0.6000804		0.5412659	0.5269457				
	0.5336804	0.5039961					0.5272	AVRG		7.5738
13)MA cis-1,2-Dichloroethylene	0.3002334	0.3196770	0.2714125		0.2743519	0.3018091				
	0.3091886	0.3041220					0.2973	AVRG		6.0090
14)MA 2,2-Dichloropropane	0.2140613	0.1921327	0.2331321		0.2200836	0.2353400				
	0.2321597	0.2215272					0.2212	AVRG		6.8052
15)MA Bromochloromethane	0.1731017	0.1706340	0.1876398		0.1636255	0.1780352				
	0.1740667	0.1724379					0.1742	AVRG		4.2192
16)MA Chloroform	0.4754387	0.5642318	0.4906712		0.4935777	0.4936449				
	0.5040429	0.4762751					0.4997	AVRG		6.0459

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
17)MA 1,1,1-Trichloroethane	0.3939887	0.3939674	0.4076876		0.4125252	0.4130724				
	0.4189098	0.4071206					0.4068	AVRG		2.3505
18)MA 1,1-Dichloropropene	0.3279976	0.2692260	0.2181393		0.2858265	0.3212903				
	0.3248799	0.3269895					0.2963	AVRG		14.0086
19)MA Carbon tetrachloride	0.4203538	0.4042856	0.4601534		0.4010136	0.4369740				
	0.4351933	0.4274687					0.4265	AVRG		4.7857
20)SA 1,2-Dichloroethane-d4	0.1440143	0.1396188	0.1632026		0.1500971	0.1446981				
	0.1480506	0.1447435					0.1478	AVRG		5.1150
21)MA 1,2-Dichloroethane	0.3418874	0.3931974	0.3494964		0.3271836	0.3347503				
	0.3572771	0.3394453					0.3490	AVRG		6.2366
22)MA Benzene	0.9877496	0.8518148	0.8379471		0.9463768	0.9760203				
	1.0082012	0.9709625					0.9399	AVRG		7.1926
23)MA Trichloroethylene	0.2952751	0.2391648	0.2285811		0.2367153	0.2740737				
	0.2975130	0.2906313					0.2660	AVRG		11.3823
24)MA 1,2-Dichloropropane	0.2717723	0.2650679	0.2433904		0.2620093	0.2629713				
	0.2787997	0.2762889					0.2658	AVRG		4.4516
25)MA Dibromomethane	0.1952230	0.1819069	0.2129827		0.1954658	0.1903944				
	0.2026354	0.1974727					0.1966	AVRG		4.9282
26)MA Bromodichloromethane	0.3732784	0.3535574	0.3728389		0.3495678	0.3615442				
	0.3742296	0.3695108					0.3649	AVRG		2.7777
27)MA cis-1,3-Dichloropropylen -0.0066 | 0.3885 | 0.00	1110188 509977	8378 1515961	14476		76798	204334		1/x LINR	# 	0.9935
29)SA Toluene-d8	1.1287738	1.1923469	1.2107485		1.2287151	1.1909584				
	1.1618749	1.1369662					1.1786	AVRG		3.1713
30)MA Toluene	1.2978781	1.3069079	1.1848377		1.3501292	1.4200446				
	1.4124978	1.2747713					1.3210	AVRG		6.2148
31)MA trans-1,3-Dichloropropyl -0.0055 | 0.4266 | 0.00	1084959 491124	8247 1429241	13201		83319	204610		1/x LINR		0.9983
32)MA 1,1,2-Trichloroethane	0.2571084	0.2466801	0.2582992		0.2631914	0.2592418				
	0.2655684	0.2540845					0.2577	AVRG		2.4004

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
33)MA 1,3-Dichloropropane	0.4982528	0.5492318	0.4315555		0.5163662	0.5047590				
	0.5107842	0.4985737					0.5014	AVRG		7.0553
34)MA Tetrachloroethylene	0.3229909	0.3552741	0.2671006		0.3328728	0.3434785				
	0.3449998	0.3340465					0.3287	AVRG		8.8383
35)MA Dibromochloromethane	0.3907032	0.3245225	0.3096664		0.3677553	0.3765284				
	0.3894224	0.3912493					0.3643	AVRG		9.2304
36)MA 1,2-Dibromoethane	0.3266562	0.3120366	0.2969854		0.2846447	0.3124131				
	0.3290724	0.3273926					0.3127	AVRG		5.4032
37)MA Chlorobenzene	0.9970638	1.0828284	1.0429959		1.0640477	1.0533393				
	1.0459466	0.9791418					1.0379	AVRG		3.5513
38)MA 1,1,1,2-Tetrachloroethan	0.4121855	0.3274865	0.4053065		0.4170444	0.4272045				
	0.4284790	0.4049125					0.4032	AVRG		8.6073
39)MA Ethylbenzene	3788429	31532	46761		335935	827941		1/x		
-0.0119 | 1.5020 | 0.00	1878358	4771612						LINR		0.9979
40)MA m,p-Xylenes	3260480	22716	33398		289763	689509		1/x		
-0.0155 | 0.6423 | 0.00	1549522	4109538						LINR	#	0.9988
41)MA o-Xylene	3279200	18056	26738		278994	685877		1/x		
-0.0223 | 1.3097 | 0.00	1597979	4216505						LINR	#	0.9986
42)MA Styrene	2700565	14775	22935		193720	540450		1/x		
-0.0198 | 1.0574 | 0.00	1250484	3434775						LINR	#	0.9980
44)MA Bromoform	0.3672484	0.2767068	0.2802154		0.2920515	0.3169945				
	0.3377590	0.3641730					0.3193	AVRG		11.9549
45)MA Isopropylbenzene	3911882	22970	31530		290292	809587		1/x		
-0.0346 | 2.1075 | 0.00	1917009	4855380						LINR	#	0.9970
46)SA Bromofluorobenzene	0.6207996	0.6527835	0.6224296		0.6391939	0.6484564				
	0.6571301	0.6226448					0.6376	AVRG		2.4534
47)MA 1,1,2,2-Tetrachloroethan	0.6422484	0.7542134	0.7127082		0.6315620	0.6112691				
	0.6613459	0.6173826					0.6615	AVRG		8.0355
48)MA 1,2,3-Trichloropropane	0.1902675	0.2353881	0.1942591		0.1678790	0.1805313				
	0.1900965	0.1766863					0.1907	AVRG		11.3884

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
49)MA Bromobenzene	0.7430393	0.7416305	0.5939834		0.6432761	0.6880281				
	0.7331261	0.7309561					0.6963	AVRG		8.3219
50)MA n-Propylbenzene	2.4778889	2.1214777	1.7327810		2.3157895	2.5290455				
	2.6763867	2.3040344					2.3082	AVRG		13.4603
51)MA 1,3,5-Trimethylbenzene -0.0284 | 1.9028 | 0.00	3541197 1705408	20461 4394679	32888		277682	730078		1/x LINR	 #	 0.9981
52)MA 2-Chlorotoluene	0.6894545	0.5730196	0.4715668		0.6271672	0.6456783				
	0.6772566	0.6697505					0.6220	AVRG		12.3669
53)MA 4-Chlorotoluene	1.6052041	1.2639089	1.0987108		1.4451513	1.5147205				
	1.6310573	1.5356185					1.4421	AVRG		13.4587
54)MA tert-Butylbenzene -0.0074 | 0.4590 | 0.00	851364 399004	6254 1099035	6908		57118	164735		1/x LINR	 #	 0.9955
55)MA 1,2,4-Trimethylbenzene -0.0280 | 1.9814 | 0.00	3634448 1799920	20183 4545891	32404		321091	786621		1/x LINR	 #	 0.9985
56)MA sec-Butylbenzene -0.0283 | 2.2967 | 0.00	4277490 2123323	27471 5185423	38744		363154	919140		1/x LINR	 #	 0.9971
57)MA 4-Isopropyltoluene -0.0309 | 2.0840 | 0.00	3885810 1911059	26375 4737393	26459		305644	824472		1/x LINR	 #	 0.9964
58)MA 1,3-Dichlorobenzene	1.3437070	1.3958830	1.0931242		1.2502550	1.3393022				
	1.3645189	1.3061850					1.2990	AVRG		7.8327
59)MA 1,4-Dichlorobenzene	1.4069764	1.6776231	1.4864777		1.4182636	1.3828528				
	1.4309952	1.3442871					1.4496	AVRG		7.5591
60)MA n-Butylbenzene -0.0172 | 1.8879 | 0.00	3535343 1711649	27991 4322096	35838		297838	742189		1/x LINR		 0.9979
61)MA 1,2-Dichlorobenzene	1.3427587	1.3237216	1.0934835		1.1931045	1.2565785				
	1.3679304	1.2893069					1.2667	AVRG		7.5803
62)MA 1,2-Dibromo-3-chloroprop -0.0050 | 0.1545 | 0.00	291078 126721	 367024	2925		19499	49196		1/x LINR		 0.9948
63)MA 1,2,4-Trichlorobenzene -0.0064 | 0.9101 | 0.00	1743207 785288	17437 2157888	20177		123182	322873		1/x LINR		 0.9952

Response Factor Report VOA8
GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	10	2	3	4	5	6	Avg	Curve	Exp	%RSD/r2
b | m1 | m2	7	8	9							
64)MA Hexachlorobutadiene	0.3826538	0.5023213	0.3564358		0.3639191	0.3444560				
	0.3611017	0.3601046					0.3816	AVRG		14.2674
65)MA Naphthalene	4602827	43217	40290		306569	835616		1/x		
-0.0269 | 2.4109 | 0.00	2200801	5607649						LINR	#	0.9929
66)MA 1,2,3-Trichlorobenzene	1721945	17625	19627		127627	321080				
-0.0270 | 0.9283 | 0.00	786193	2147756						LINR		0.9984
68)B Trichlorotrifluoroethane							0.0000	AVRG	#	-1.0000
69)B 1,4-Dioxane							0.0000	AVRG	#	-1.0000

(#) = Out of Range ($) = Individual RF Out of Range
AVRG = Average, LINR = Linear Regression, 1/x = the inverse of concentration, 1/x^2 = the inverse square of concentration

Continuing Calibration Summary

Client SDG: 40734

Instrument ID: VOA8.I **Injection Date:** 12-FEB-19 12:50

Data File: 021219V8\8J203.D **Init. Cal. Date(s)** 07-JAN-19 10:35 - 07-JAN-19 14:14

Lab Sample ID W8VM190212-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD **Method Update:** 09-JAN-19 13:14

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.1478	0.13325		.01		-9.84438	30		Averaged
S	Toluene-d8	1.1786	1.24126		.01		5.31648	30		Averaged
S	Bromofluorobenzene	0.6376	0.53539		.01		-16.03043	30		Averaged
	Dichlorodifluoromethane	0.2364	0.20886		.01		-11.64975	30		Averaged
	Chloromethane	20	16.83	20			-15.85	30		Linear
	Vinyl chloride	0.4329	0.34345		.01		-20.66297	30		Averaged
	Bromomethane	20	17.09	20			-14.55	30		Linear
	Chloroethane	0.2793	0.21944		.01		-21.43215	30		Averaged
	Trichlorofluoromethane	0.8314	0.64436		.01		-22.49699	30		Averaged
	1,1-Dichloroethylene	0.5483	0.5148		.01		-6.10979	30		Averaged
	Methylene chloride	20	20.34	20			1.7	30		Linear
	tert-Butyl methyl ether	0.8848	0.8033		.01		-9.21112	30		Averaged
	trans-1,2-Dichloroethylene	0.5013	0.46594		.01		-7.05366	30		Averaged
	1,1-Dichloroethane	0.5272	0.60291		.1		14.36077	30		Averaged
	cis-1,2-Dichloroethylene	0.2973	0.29994		.01		0.88799	30		Averaged
	2,2-Dichloropropane	0.2212	0.25173		.01		13.80199	30		Averaged
	Bromochloromethane	0.1742	0.16279		.01		-6.54994	30		Averaged
	Chloroform	0.4997	0.44548		.01		-10.85051	30		Averaged
	1,1,1-Trichloroethane	0.4068	0.36985		.01		-9.08309	30		Averaged
	1,1-Dichloropropene	0.2963	0.30329		.01		2.3591	30		Averaged
	Carbon tetrachloride	0.4265	0.39945		.01		-6.34232	30		Averaged
	1,2-Dichloroethane	0.349	0.28172		.01		-19.27794	30		Averaged
	Benzene	0.9399	0.98374		.01		4.66433	30		Averaged
	Trichloroethylene	0.266	0.25655		.01		-3.55263	30		Averaged
	1,2-Dichloropropane	0.2658	0.28834		.01		8.48006	30		Averaged
	Dibromomethane	0.1966	0.18631		.01		-5.23398	30		Averaged
	Bromodichloromethane	0.3649	0.33146		.01		-9.16415	30		Averaged
	cis-1,3-Dichloropropylene	20	16.39	20			-18.05	30		Linear
	Toluene	1.321	1.51936		.01		15.0159	30		Averaged
	trans-1,3-Dichloropropylene	20	19.44	20			-2.8	30		Linear
	1,1,2-Trichloroethane	0.2577	0.28337		.01		9.9612	30		Averaged
	1,3-Dichloropropane	0.5014	0.54988		.01		9.66893	30		Averaged
	Tetrachloroethylene	0.3287	0.38518		.01		17.18284	30		Averaged
	Dibromochloromethane	0.3643	0.39986		.01		9.76119	30		Averaged
	1,2-Dibromoethane	0.3127	0.31676		.01		1.29837	30		Averaged
	Chlorobenzene	1.0379	1.10346		.3		6.3166	30		Averaged
	1,1,1,2-Tetrachloroethane	0.4032	0.44832		.01		11.19048	30		Averaged

Continuing Calibration Summary

Instrument ID: VOA8.I **Injection Date:** 12-FEB-19 12:50

Data File: 021219V8\8J203.D **Init. Cal. Date(s)** 07-JAN-19 10:35 07-JAN-19 14:14

Lab Sample ID W8VM190212-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD

Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
Ethylbenzene	20	22.54	20			12.7	30		Linear
m,p-Xylenes	40	45.89	40			14.725	30		Linear
o-Xylene	20	21.29	20			6.45	30		Linear
Styrene	20	21.7	20			8.5	30		Linear
Bromoform	0.3193	0.35362		.1		10.74851	30		Averaged
Isopropylbenzene	20	19.77	20			-1.15	30		Linear
1,1,2,2-Tetrachloroethane	0.6615	0.60735		.3		-8.18594	30		Averaged
1,2,3-Trichloropropane	0.1907	0.16347		.01		-14.27897	30		Averaged
Bromobenzene	0.6963	0.76394		.01		9.7142	30		Averaged
n-Propylbenzene	2.3082	2.59885		.01		12.59206	30		Averaged
1,3,5-Trimethylbenzene	20	19.43	20			-2.85	30		Linear
2-Chlorotoluene	0.622	0.69663		.01		11.99839	30		Averaged
4-Chlorotoluene	1.4421	1.47747		.01		2.45267	30		Averaged
tert-Butylbenzene	20	18.65	20			-6.75	30		Linear
1,2,4-Trimethylbenzene	20	19.88	20			-0.6	30		Linear
sec-Butylbenzene	20	20.28	20			1.4	30		Linear
4-Isopropyltoluene	20	20.37	20			1.85	30		Linear
1,3-Dichlorobenzene	1.299	1.444		.01		11.16243	30		Averaged
1,4-Dichlorobenzene	1.4496	1.40626		.01		-2.98979	30		Averaged
n-Butylbenzene	20	19.63	20			-1.85	30		Linear
1,2-Dichlorobenzene	1.2667	1.31139		.01		3.52807	30		Averaged
1,2-Dibromo-3-chloropropane	20	17.11	20			-14.45	30		Linear
1,2,4-Trichlorobenzene	20	18.86	20			-5.7	30		Linear
Hexachlorobutadiene	0.3816	0.35864		.01		-6.01677	30		Averaged
Naphthalene	20	16.91	20			-15.45	30		Linear
1,2,3-Trichlorobenzene	20	17.84	20			-10.8	30		Linear

Continuing Calibration Summary

Client SDG: 40734

Instrument ID: VOA8.I **Injection Date:** 15-FEB-19 10:27

Data File: 021519V8\8J503.D **Init. Cal. Date(s)** 07-JAN-19 10:35 - 07-JAN-19 14:14

Lab Sample ID W8VM190215-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD **Method Update:** 09-JAN-19 13:14

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.1478	0.14071		.01		-4.79702	30		Averaged
S	Toluene-d8	1.1786	1.10484		.01		-6.25827	30		Averaged
S	Bromofluorobenzene	0.6376	0.54094		.01		-15.15997	30		Averaged
	Dichlorodifluoromethane	0.2364	0.21344		.01		-9.71235	30		Averaged
	Chloromethane	20	19.4	20			-3	30		Linear
	Vinyl chloride	0.4329	0.39647		.01		-8.41534	30		Averaged
	Bromomethane	20	19.93	20			-0.35	30		Linear
	Chloroethane	0.2793	0.26598		.01		-4.76907	30		Averaged
	Trichlorofluoromethane	0.8314	0.7622		.01		-8.32331	30		Averaged
	1,1-Dichloroethylene	0.5483	0.54702		.01		-0.23345	30		Averaged
	Methylene chloride	20	23.32	20			16.6	30		Linear
	tert-Butyl methyl ether	0.8848	0.85034		.01		-3.89467	30		Averaged
	trans-1,2-Dichloroethylene	0.5013	0.53517		.01		6.75643	30		Averaged
	1,1-Dichloroethane	0.5272	0.63053		.1		19.59977	30		Averaged
	cis-1,2-Dichloroethylene	0.2973	0.34684		.01		16.6633	30		Averaged
	2,2-Dichloropropane	0.2212	0.26626		.01		20.37071	30		Averaged
	Bromochloromethane	0.1742	0.18695		.01		7.31917	30		Averaged
	Chloroform	0.4997	0.50443		.01		0.94657	30		Averaged
	1,1,1-Trichloroethane	0.4068	0.41781		.01		2.70649	30		Averaged
	1,1-Dichloropropene	0.2963	0.34901		.01		17.7894	30		Averaged
	Carbon tetrachloride	0.4265	0.4363		.01		2.29777	30		Averaged
	1,2-Dichloroethane	0.349	0.33443		.01		-4.17479	30		Averaged
	Benzene	0.9399	1.14903		.01		22.25024	30		Averaged
	Trichloroethylene	0.266	0.27799		.01		4.50752	30		Averaged
	1,2-Dichloropropane	0.2658	0.32569		.01		22.53198	30		Averaged
	Dibromomethane	0.1966	0.21046		.01		7.04985	30		Averaged
	Bromodichloromethane	0.3649	0.37823		.01		3.65306	30		Averaged
	cis-1,3-Dichloropropylene	20	19.39	20			-3.05	30		Linear
	Toluene	1.321	1.45298		.01		9.99092	30		Averaged
	trans-1,3-Dichloropropylene	20	20.11	20			0.55	30		Linear
	1,1,2-Trichloroethane	0.2577	0.28066		.01		8.90958	30		Averaged
	1,3-Dichloropropane	0.5014	0.54561		.01		8.81731	30		Averaged
	Tetrachloroethylene	0.3287	0.36877		.01		12.19045	30		Averaged
	Dibromochloromethane	0.3643	0.39229		.01		7.68323	30		Averaged
	1,2-Dibromoethane	0.3127	0.31968		.01		2.23217	30		Averaged
	Chlorobenzene	1.0379	1.10037		.3		6.01888	30		Averaged
	1,1,1,2-Tetrachloroethane	0.4032	0.42342		.01		5.01488	30		Averaged

Continuing Calibration Summary

Instrument ID: VOA8.I **Injection Date:** 15-FEB-19 10:27

Data File: 021519V8\8J503.D **Init. Cal. Date(s)** 07-JAN-19 10:35 07-JAN-19 14:14

Lab Sample ID W8VM190215-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD

Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
Ethylbenzene	20	21.3	20			6.5	30		Linear
m,p-Xylenes	40	44.39	40			10.975	30		Linear
o-Xylene	20	20.93	20			4.65	30		Linear
Styrene	20	21.87	20			9.35	30		Linear
Bromoform	0.3193	0.35245		.1		10.38209	30		Averaged
Isopropylbenzene	20	18.78	20			-6.1	30		Linear
1,1,2,2-Tetrachloroethane	0.6615	0.62093		.3		-6.13303	30		Averaged
1,2,3-Trichloropropane	0.1907	0.16467		.01		-13.64971	30		Averaged
Bromobenzene	0.6963	0.74156		.01		6.50007	30		Averaged
n-Propylbenzene	2.3082	2.51606		.01		9.00529	30		Averaged
1,3,5-Trimethylbenzene	20	18.71	20			-6.45	30		Linear
2-Chlorotoluene	0.622	0.68184		.01		9.62058	30		Averaged
4-Chlorotoluene	1.4421	1.41322		.01		-2.00264	30		Averaged
tert-Butylbenzene	20	18.4	20			-8	30		Linear
1,2,4-Trimethylbenzene	20	19.34	20			-3.3	30		Linear
sec-Butylbenzene	20	19.26	20			-3.7	30		Linear
4-Isopropyltoluene	20	19.15	20			-4.25	30		Linear
1,3-Dichlorobenzene	1.299	1.36378		.01		4.98691	30		Averaged
1,4-Dichlorobenzene	1.4496	1.39769		.01		-3.58099	30		Averaged
n-Butylbenzene	20	18.42	20			-7.9	30		Linear
1,2-Dichlorobenzene	1.2667	1.27744		.01		0.84787	30		Averaged
1,2-Dibromo-3-chloropropane	20	16.19	20			-19.05	30		Linear
1,2,4-Trichlorobenzene	20	17.38	20			-13.1	30		Linear
Hexachlorobutadiene	0.3816	0.34233		.01		-10.29088	30		Averaged
Naphthalene	20	16.34	20			-18.3	30		Linear
1,2,3-Trichlorobenzene	20	17.58	20			-12.1	30		Linear

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**			**Matrix:**	**WATER**
Lab Sample ID:	**1204217625**				
Client Sample:	**QC for batch 1848564**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1848564**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/12/2019 13:52**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/12/2019 13:52**				
Data File:	**021219V8\8J205BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**			**Matrix:**	**WATER**
Lab Sample ID:	**1204217625**				
Client Sample:	**QC for batch 1848564**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1848564**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/12/2019 13:52**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/12/2019 13:52**				
Data File:	**021219V8\8J205BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**			**Matrix:**	**WATER**
Lab Sample ID:	**1204217626**				
Client Sample:	**QC for batch 1848564**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1848564**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/12/2019 12:50**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/12/2019 12:50**				
Data File:	**021219V8\8J203BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		22.2	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		18.2	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		18.4	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		22.0	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		22.9	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		18.8	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		20.5	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		17.8	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		17.1	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		18.9	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		19.9	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		20.3	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		20.7	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		16.1	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		21.7	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		19.4	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		22.2	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		21.9	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		19.4	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		22.8	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		22.4	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		20.5	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		20.4	ug/L	0.167	0.500	0.500
71-43-2	Benzene		20.9	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		21.9	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		18.7	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		18.2	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		22.2	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		17.1	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		18.7	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		21.3	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		15.7	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		17.8	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		16.8	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		22.0	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		19.0	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		17.7	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		22.5	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**			**Matrix:**	**WATER**
Lab Sample ID:	**1204217626**				
Client Sample:	**QC for batch 1848564**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1848564**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/12/2019 12:50**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/12/2019 12:50**				
Data File:	**021219V8\8J203BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		18.8	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		19.8	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		20.3	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		16.9	ug/L	0.167	0.500	0.500
100-42-5	Styrene		21.7	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		23.4	ug/L	0.167	0.500	0.500
108-88-3	Toluene		23.0	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		19.3	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		15.5	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		15.9	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		20.2	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		16.4	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		45.9	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		19.6	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		22.5	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		21.3	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		20.3	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		18.2	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		18.7	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		18.6	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		19.4	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		17.1	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**	**Date Collected:**	**02/05/2019 15:30**	**Matrix:**	**W**
Lab Sample ID:	**1204217627**	**Date Received:**	**02/07/2019 08:55**		
Client Sample:	**QC for batch 1848564**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40738-001PS**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/15/2019 19:50**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2019 19:50**				
Data File:	**021519V8\8J521.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		22.3	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		21.1	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		18.9	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		21.7	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		23.5	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		20.8	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		23.7	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		17.5	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		17.6	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		17.4	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		19.3	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		20.9	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		19.8	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		18.7	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		25.0	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		18.8	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		20.7	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		21.5	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		19.0	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		22.1	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		21.9	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		19.5	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		19.0	ug/L	0.167	0.500	0.500
71-43-2	Benzene		24.4	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		21.2	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		21.8	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		21.4	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		23.0	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		21.4	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		21.6	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		21.7	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		20.2	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		20.8	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		21.1	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		21.5	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		22.2	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		19.3	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		21.4	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**	**Date Collected:**	**02/05/2019 15:30**	**Matrix:**	**W**
Lab Sample ID:	**1204217627**	**Date Received:**	**02/07/2019 08:55**		
Client Sample:	**QC for batch 1848564**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40738-001PS**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/15/2019 19:50**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2019 19:50**				
Data File:	**021519V8\8J521.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		17.2	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		18.7	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	B	24.1	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		16.6	ug/L	0.167	0.500	0.500
100-42-5	Styrene		22.7	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		22.5	ug/L	0.167	0.500	0.500
108-88-3	Toluene		22.3	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		21.7	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		21.1	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		20.1	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		23.4	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		19.4	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		44.5	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		18.0	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		21.8	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		21.3	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		19.4	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		19.9	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		17.1	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		21.6	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		19.9	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		17.1	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**	**Date Collected:**	**02/05/2019 15:30**	**Matrix:**	**W**
Lab Sample ID:	**1204217628**	**Date Received:**	**02/07/2019 08:55**		
Client Sample:	**QC for batch 1848564**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40738-001PSD**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/15/2019 20:21**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2019 20:21**				
Data File:	**021519V8\8J522.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		21.7	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		21.3	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		19.1	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		21.8	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		22.5	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		22.3	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		25.3	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		18.8	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		18.3	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		18.2	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		19.4	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		21.2	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		20.4	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		19.1	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		24.4	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		19.4	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		21.1	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		21.9	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		19.3	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		21.9	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		21.7	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		20.1	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		19.5	ug/L	0.167	0.500	0.500
71-43-2	Benzene		24.7	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		21.2	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		21.6	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		20.7	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		23.4	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		21.5	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		21.1	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		21.4	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		20.3	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		20.8	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		22.9	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		22.5	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		21.5	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		20.1	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		21.5	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**	**Date Collected:**	**02/05/2019 15:30**	**Matrix:**	**W**
Lab Sample ID:	**1204217628**	**Date Received:**	**02/07/2019 08:55**		
Client Sample:	**QC for batch 1848564**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40738-001PSD**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/15/2019 20:21**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2019 20:21**				
Data File:	**021519V8\8J522.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		18.7	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		19.5	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	B	24.4	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		18.1	ug/L	0.167	0.500	0.500
100-42-5	Styrene		21.2	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		22.8	ug/L	0.167	0.500	0.500
108-88-3	Toluene		22.8	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		21.7	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		20.4	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		22.0	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		23.9	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		20.2	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		44.6	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		18.9	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		22.4	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		20.7	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		20.0	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		21.6	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		18.4	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		21.9	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		20.8	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		18.0	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**			**Matrix:**	**WATER**
Lab Sample ID:	**1204223261**				
Client Sample:	**QC for batch 1848564**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1848564**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/15/2019 11:30**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2019 11:30**				
Data File:	**021519V8\8J505BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**			**Matrix:**	**WATER**
Lab Sample ID:	**1204223261**				
Client Sample:	**QC for batch 1848564**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1848564**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/15/2019 11:30**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2019 11:30**				
Data File:	**021519V8\8J505BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	J	0.260	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**			**Matrix:**	**WATER**
Lab Sample ID:	**1204223262**				
Client Sample:	**QC for batch 1848564**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1848564**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/15/2019 10:27**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2019 10:27**				
Data File:	**021519V8\8J503BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		21.0	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		20.5	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		18.8	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		21.8	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		23.9	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		20.0	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		23.6	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		17.6	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		17.3	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		17.4	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		19.3	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		20.4	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		20.2	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		19.2	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		24.5	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		18.7	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		21.0	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		21.8	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		19.3	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		24.1	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		21.9	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		19.6	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		19.2	ug/L	0.167	0.500	0.500
71-43-2	Benzene		24.5	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		21.3	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		21.5	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		20.7	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		22.1	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		19.9	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		20.5	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		21.2	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		19.1	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		20.2	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		19.4	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		21.5	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		21.4	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		18.1	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		21.3	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40734**			**Matrix:**	**WATER**
Lab Sample ID:	**1204223262**				
Client Sample:	**QC for batch 1848564**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1848564**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1848564**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/15/2019 10:27**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2019 10:27**				
Data File:	**021519V8\8J503BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		17.9	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		18.8	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	B	23.3	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		16.3	ug/L	0.167	0.500	0.500
100-42-5	Styrene		21.9	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		22.4	ug/L	0.167	0.500	0.500
108-88-3	Toluene		22.0	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		20.9	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		18.3	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		18.3	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		23.3	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		19.4	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		44.4	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		18.4	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		21.8	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		20.9	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		19.3	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		19.2	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		18.4	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		21.4	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		20.1	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		16.2	ug/L	0.330	1.00	1.00

Miscellaneous

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

01/08/2019
01/10/2019

Date: 1/7/2019 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42

Daily Instrument Readings:
Multiplier Voltage: 1575

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 1/7/2019

Cl test lot # 64312

Sequence Number: 010719V8

Daily Standard Solution ID#		Volume Added for Purge (ul) Blk/ Smpl	CCV	MS/ LCS	BFB
IS/SS	IVM170915-03	1	1	1	
ICV[A]	W8VM190107-08			20uL ea.	
BFB	IVM181212-01				1

Purge Amount	
5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
7 Jan 2019 09:32	8E103.D	IVM181212-01	GEL	BFB	5ML	1	PH<2	1	W	PXY1	N/A	O	
7 Jan 2019 10:04	8E104.D	W8VM190107-01	VSTD0005	ICAL	5ML	1	PH<2	2	W	PXY1	N/A	X	MIX[A] UVM181127-04/UVM181228-04B
7 Jan 2019 10:35	8E105.D	W8VM190107-02	VSTD001	ICAL	5ML	1	PH<2	3	W	PXY1	N/A	O	MIX[A] UVM181127-05/UVM181228-05B
7 Jan 2019 11:07	8E106.D	W8VM190107-03	VSTD005	ICAL	5ML	1	PH<2	4	W	PXY1	N/A	O	MIX[A] UVM181127-07/UVM181228-07B
7 Jan 2019 11:38	8E107.D	W8VM190107-04	VSTD010	ICAL	5ML	1	PH<2	5	W	PXY1	N/A	O	MIX[A] UVM181127-08/UVM181228-08B
7 Jan 2019 12:09	8E108.D	W8VM190107-05	VSTD020	ICAL	5ML	1	PH<2	6	W	PXY1	N/A	O	MIX[A] UVM181127-09/UVM181228-09B
7 Jan 2019 12:40	8E109.D	W8VM190107-06	VSTD040	ICAL	5ML	1	PH<2	7	W	PXY1	N/A	O	MIX[A] UVM181127-09/UVM181228-09B
7 Jan 2019 13:11	8E110.D	W8VM190107-07	VSTD050	ICAL	5ML	1	PH<2	8	W	PXY1	N/A	O	MIX[A] UVM181127-09/UVM181228-09B
7 Jan 2019 13:42	8E111.D	BLANK	GEL	BLANK	5ML	1	PH<2	9	W	PXY1	N/A	X	RINSE
7 Jan 2019 14:14	8E112.D	W8VM190107-01	VSTD0005	ICAL	5ML	1	PH<2	10	W	PXY1	N/A	O	MIX[A] UVM181127-04/UVM181228-04B
7 Jan 2019 14:45	8E113.D	W8VM190107-08	ICV	ICV	5ML	1	PH<2	11	W	PXY1	N/A	O	MIX[A] UVM181023-10B/UVM181228-10B

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

02/13/2019

02/13/2019

Date: 2/12/2019 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42

Daily Instrument Readings:
Multiplier Voltage: 1706

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 1/7/2019

Cl test lot # 64312

Sequence Number: 021219V8

Daily Standard Solution ID#		Volume Added for Purge (ul) Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W8VM190212-01			20uL ea.	
IS/SS	IVM170915-03	1	1	1	
LCS/MS	W8VM190212-01			20uL ea.	
BFB	IVM190208-01				1
SHORT			5uL ea.	5uL ea.	

Purge Amount	
5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
2/12/2019 12:18	8J201.D	IVM190208-01	GEL	BFB	5ML	1	N/A	1	W	PXY1	N/A	O	
2/12/2019 12:50	8J203.D	W8VM190212-01	GEL	CCV	5ML	1	PH<2	2	W	PXY1	N/A	O	MIX[A]
2/12/2019 13:21	8J204.D	120421	GEL	BLANK	5ML	1	PH<2	3	W	PXY1	N/A	X	RINSE
2/12/2019 13:52	8J205.D	120421	GEL	BLANK	5ML	1	PH<2	4	W	PXY1	N/A	O	
2/12/2019 14:23	8J206.D	469535011	PTQA	1846098	5ML	1	PH<2	5	W	PXY1	N/A	O	
2/12/2019 14:55	8J207.D	469535012	PTQA	1846098	5ML	1	PH<2	6	W	PXY1	N/A	O	
2/12/2019 15:26	8J208.D	469535013	PTQA	1846098	5ML	1	PH<2	7	W	PXY1	N/A	O	
2/12/2019 15:58	8J209.D	469535014	PTQA	1846098	5ML	1	PH<2	8	W	PXY1	N/A	O	
2/12/2019 16:29	8J210.D	470722001	BRKL	1848564	5ML	1	PH<2	9	W	PXY1	N	O	
2/12/2019 17:00	8J211.D	470722004	BRKL	1848564	5ML	1	PH<2	10	W	PXY1	N	O	
2/12/2019 17:32	8J212.D	470722005	BRKL	1848564	5ML	1	PH<2	11	W	PXY1	N	O	
2/12/2019 18:03	8J213.D	470728001	BRKL	1848564	5ML	1	PH<2	12	W	PXY1	N	O	
2/12/2019 18:35	8J214.D	470728002	BRKL	1848564	5ML	1	PH<2	13	W	PXY1	N	O	
2/12/2019 19:06	8J215.D	470728003	BRKL	1848564	5ML	1	PH<2	14	W	PXY1	N	O	
2/12/2019 19:37	8J216.D	470740001	BRKL	1848564	5ML	1	PH<2	15	W	PXY1	N	O	
2/12/2019 20:08	8J217.D	470749003	BRKL	1848564	5ML	1	PH<2	16	W	PXY1	N	O	
2/12/2019 20:40	8J218.D	470756001	BRKL	1848564	5ML	1	PH<2	17	W	PXY1	N	O	
2/12/2019 21:11	8J219.D	470749001	BRKL	1845619	5ML	1	PH<2	18	W	PXY1	N	O	
2/12/2019 21:43	8J220.D	470749002	BRKL	1845619	5ML	1	PH<2	19	W	PXY1	N	O	
2/12/2019 22:14	8J221.D	1204211897	PTQA	1846098	5ML	1	PH<2	20	W	PXY1	N/A	O	MIX[A] 469535011PS
2/12/2019 22:45	8J222.D	1204211898	PTQA	1846098	5ML	1	PH<2	21	W	PXY1	N/A	O	MIX[A] 469535011PSD
2/12/2019 23:17	8J223.D	1204210792	BRKL	1845619	5ML	1	PH<2	22	W	PXY1	N	O	MIX[A] 470749001PS
2/12/2019 23:48	8J224.D	1204210793	BRKL	1845619	5ML	1	PH<2	23	W	PXY1	N	O	MIX[A] 470749001PSD

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

02/20/2019

02/21/2019

Date: 2/15/2019 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42

Daily Instrument Readings:
Multiplier Voltage: 1706

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 1/7/2019

Cl test lot # 64312

Sequence Number: 021519V8

Daily Standard Volume Added for Purge (ul)

Solution ID#		Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W8VM190215-01			20uL ea.	
IS/SS	IVM170915-03	1	1	1	
LCS/MS	W8VM190215-01			20uL ea.	
BFB	IVM190208-01				1

Purge Amount

5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
2/15/2019 9:56	8J501.D	IVM190208-01	GEL	BFB	5ML	1	N/A	1	W	PXY1	N/A	O	
2/15/2019 10:27	8J503.D	W8VM190215-01	GEL	CCV	5ML	1	PH<2	2	W	PXY1	N/A	O	MIX[A]
2/15/2019 10:58	8J504.D	120421	GEL	BLANK	5ML	1	PH<2	3	W	PXY1	N/A	X	RINSE
2/15/2019 11:30	8J505.D	120421	GEL	BLANK	5ML	1	PH<2	4	W	PXY1	N/A	O	
2/15/2019 12:01	8J506.D	470756002	BRKL	1848564	5ML	1	PH<2	5	W	PXY1	N	O	
2/15/2019 12:33	8J507.D	470756003	BRKL	1848564	5ML	1	PH<2	6	W	PXY1	N	O	
2/15/2019 13:04	8J508.D	470761001	BRKL	1848564	5ML	1	PH<2	7	W	PXY1	N	O	
2/15/2019 13:35	8J509.D	470761002	BRKL	1848564	5ML	1	PH<2	8	W	PXY1	N	O	
2/15/2019 14:07	8J510.D	470761003	BRKL	1848564	5ML	1	PH<2	9	W	PXY1	N	O	
2/15/2019 14:38	8J511.D	470761004	BRKL	1848564	5ML	1	PH<2	10	W	PXY1	N	O	
2/15/2019 15:09	8J512.D	470779001	BRKL	1848564	5ML	1	PH<2	11	W	PXY1	N	O	
2/15/2019 15:40	8J513.D	470779002	BRKL	1848564	5ML	1	PH<2	12	W	PXY1	N	O	
2/15/2019 16:11	8J514.D	471011001	BRKL	1849793	5ML	1	PH<2	13	W	PXY1	N	O	
2/15/2019 16:42	8J515.D	471011002	BRKL	1849793	5ML	1	PH<2	14	W	PXY1	N	O	
2/15/2019 17:13	8J516.D	471011003	BRKL	1849793	5ML	1	PH<2	15	W	PXY1	N	O	Tetrachloroethylene over range. See 8K112
2/15/2019 17:45	8J517.D	471011004	BRKL	1849793	5ML	1	PH<2	16	W	PXY1	N	X	Possible carryover. See 8K113
2/15/2019 18:16	8J518.D	471011005	BRKL	1849793	5ML	1	PH<2	17	W	PXY1	N	X	Possible carryover. See 8K114
2/15/2019 18:47	8J519.D	471011006	BRKL	1849793	5ML	1	PH<2	18	W	PXY1	N	X	Possible carryover. See 8K115
2/15/2019 19:19	8J520.D	471011007	BRKL	1849793	5ML	1	PH<2	19	W	PXY1	N	X	Possible carryover. See 8K116
2/15/2019 19:50	8J521.D	1204217627	BRKL	1848564	5ML	1	PH<2	20	W	PXY1	N	O	MIX[A] 470722001PS
2/15/2019 20:21	8J522.D	1204217628	BRKL	1848564	5ML	1	PH<2	21	W	PXY1	N	O	MIX[A] 470722001PSD
2/15/2019 20:53	8J523.D	1204220371	BRKL	1849793	5ML	1	PH<2	22	W	PXY1	N	O	MIX[A] 471011002PS
2/15/2019 21:24	8J524.D	1204220372	BRKL	1849793	5ML	1	PH<2	23	W	PXY1	N	O	MIX[A] 471011002PSD

GEL Laboratories LLC
a member of The GEL Group INC

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March 06, 2019

Mr. Robert F. Howe
Brookhaven National Laboratory
Building 462
Upton, New York 11973-5000

Re: Project - OU3 B96
Chain of Custody - 40783
Project Manager -V. RACANIELLO
Account # - 22486
Release # -471889

SDG: 40783

Dear Mr. Howe:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 21, 2019. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4453.

Sincerely,

Kaitlyn Stone for
Edith Kent
Project Manager

Purchase Order: 310464
Chain of Custody: 40783
Enclosures

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Case Narrative

Case Narrative
for
Brookhaven National Laboratory (310464)
SDG: 40783
Work Order: 471889

March 06, 2019

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample Receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 21, 2019 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
471889001	40783-001
471889002	40783-002
471889003	40783-003

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: GC/MS Volatile.

Kaitlyn Stone for
Edith Kent
Project Manager

Chain of Custody

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 40783

Requires EDD ✓

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: ~~Test America~~ GEL
Life No: 20867 Ext: 8826	Contact: R. Lagattolla	Address: ~~13715 Rider Trail N.~~
Acct. No: 22486/23398 Dept: ES	Phone: 631 344 7129	City: ~~Earth City~~ St: ~~MO~~ Zip: ~~63045~~
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: ~~Ivan Vania~~ Edie Kent
1 E. Kramer	Sampler: J. Miln	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD Use TB-1 for CoC # 40782

Type			Sample Information					Additional Sample Information					Analysis Requested										
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals		
001	E	G	095-151	0	2/20/19	0936	W	RTW-1 Influent	40 ML	SC	3	HCL					X						
002	E	G	095-152	0	↓	0942	W	RTW-1 Effluent	40 ML	SC	3	HCL					X						
003	E	G	TB-1	0	↓	0930	W	Trip Blank	40 ML	SC	3	HCL					X						

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print J. Miln 2/20/19	Print	Print
Signature 1500	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print L. Matthews 2/21/19	Print	Print
Signature 900	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☐ Archive For ____ Months
- ☒ Disposal by Lab

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13) Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

GEL Laboratories, LLC

SAMPLE RECEIPT & REVIEW FORM

Client: BRKL	SDG/AR/COC/Work Order: 471889
Received By: M	Date Received: 2/21/19
Carrier and Tracking Number	Circle Applicable: FedEx Express / FedEx Ground / UPS / Field Services / Courier / Other 6583 4854 2690 1 C 6583 4854 2704 1 C 6583 4854 2715 1 C

1 C 6583 4854 2689

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A) Shipped as a DOT Hazardous?		X	Hazard Class Shipped: UN#: If UN2910, is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		X	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		X	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		X	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		X	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

Sample Receipt Criteria		Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	X			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	X			Preservation Method: Wet Ice / Ice Packs / Dry ice / None / Other: *all temperatures are recorded in Celsius
4	Daily check performed and passed on IR temperature gun?	X			Temperature Device Serial #: IR4-17 TEMP: See Back Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?				Sample ID's and Containers Affected:
7	Do any samples require Volatile Analysis?				If Preservation added, Lot#: If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___ (If unknown, select No). Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	X			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	X			ID's and containers affected: 40777-004 (122-33) Had 40777-003 on container and the duplicate was Blank
10	Date & time on COC match date & time on bottles?	X			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	X			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided?	X			
13	COC form is properly signed in relinquished/received sections?	X			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials KS Date 2/22/19 Page 1 of 1

GL-CHL-SR-001 Rev 6

Work Order Containers

Sample ID: 471889001
Client Sample ID: 40783−001
Description: 095−151 Water

Label: 471889001.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

21−FEB−19 12:08:42	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler
27−FEB−19 12:18:21	Patrick Yib	Transfered custody to batch 1852561
27−FEB−19 12:18:21	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
01−MAR−19 00:07:13	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 471889001.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

21−FEB−19 12:08:42	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 471889001.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

21−FEB−19 12:08:42	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler

Sample ID: 471889002
Client Sample ID: 40783−002
Description: 095−152 Water

Label: 471889002.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

21−FEB−19 12:08:42	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler
27−FEB−19 12:18:21	Patrick Yib	Transfered custody to batch 1852561
27−FEB−19 12:18:21	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
01−MAR−19 00:07:13	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 471889002.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

21−FEB−19 12:08:42	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 471889002.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

21−FEB−19 12:08:42	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler

Sample ID: 471889003
Client Sample ID: 40783−003
Description: TB−1 Water

Label: 471889003.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

21−FEB−19 12:08:42	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler
27−FEB−19 12:18:21	Patrick Yib	Transfered custody to batch 1852561
27−FEB−19 12:18:21	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
01−MAR−19 00:07:13	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Work Order Containers

Sample ID: **471889003**
Client Sample ID: **40783−003**
Description: **TB−1 Water**

Label: 471889003.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

21−FEB−19 12:08:42	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 471889003.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

21−FEB−19 12:08:42	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler

Data Review Qualifier Definitions

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 06−MAR−19

Project Specific Qualifier Definitions for GEL Client Code: BRKL

Qualifier	Qualifier Definition	Department	Fraction
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.		
J	Value is estimated		
P	Organics−−The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.	Organics	
C	Analyte has been confirmed by GC/MS analysis	Organics	Pesticide
B	The target analyte was detected in the associated blank.	Organics	
E	Concentration of the target analyte exceeds the instrument calibration range	Organics	
A	The TIC is a suspected aldol−condensation product	Organics	Semi−Volatile
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
N	Metals−−The Matrix spike sample recovery is not within specified control limits	Inorganics	
*	A quality control analyte recovery is outside of specified acceptance criteria		
N	Organics−−Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor	Organics	Semi−Volatile
H	Analytical holding time was exceeded		
**	Analyte is a surrogate compound	Organics	
<	Result is less than value reported		
>	Result is greater than value reported		
UI	Gamma Spectroscopy−−Uncertain identification	Radiological	
BD	Results are either below the MDC or tracer recovery is low	Radiological	
h	Preparation or preservation holding time was exceeded		
R	Sample results are rejected		
Z	Paint Filter Test−−Particulates passed through the filter, however no free liquids were observed.	General Chemistry	General Chem
d	5−day BOD−−The 2:1 depletion requirement was not met for this sample	General Chemistry	
B	Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL	Inorganics	Metals
^	RPD of sample and duplicate evaluated using +/−RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.		
D	Results are reported from a diluted aliquot of the sample	Organics	
N/A	RPD or %Recovery limits do not apply.		
ND	Analyte concentration is not detected above the detection limit		
E	%difference of sample and SD is >10%. Sample concentration must meet flagging criteria	Inorganics	Metals
M	M if above MDC and less than LLD	Radiological	
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
FA	Failed analysis.	Radiological	Bioassay
E	General Chemistry−−Concentration of the target analyte exceeds the instrument calibration range	General Chemistry	General Chem
JNX	Non Calibrated Compound	Organics	Volatile
UJ	Compound cannot be extracted	Organics	Semi−Volatile

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 06−MAR−19

Project Specific Qualifier Definitions for GEL Client Code: BRKL

Qualifier	Qualifier Definition	Department	Fraction
UJ	Gamma Spectroscopy−−Uncertain identification	Radiological	Rad
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.		
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.	Radiological	
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.	Radiological	
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.	Radiological	
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies	Inorganics	Metals
N1	See case narrative		
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.	Inorganics	
Y	QC Samples were not spiked with this compound	Organics	
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.	General Chemistry	General Chem
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.	Radiological	Rad
**	Analyte is a Tracer compound	Radiological	
B	The target analyte was detected in the associated blank.	General Chemistry	
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor	Organics	Volatile
e	5−day BOD−−Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes	General Chemistry	General Chem
M	REMP Result > MDC/CL and < RDL	Radiological	

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Laboratory Certifications

List of current GEL Certifications as of 06 March 2019

State	Certification
Alaska	17−018
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA024
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122019−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	9904
Pennsylvania NELAP	68−00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−19−14
Utah NELAP	SC000122018−27
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Volatile Analysis

Case Narrative

GC/MS Volatile
Technical Case Narrative
Brookhaven National Laboratory (BRKL)
SDG #: 40783
Work Order #: 471889

Product: **Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometer Applicable to EPA Method 524.2**
Analytical Method: EPA 524.2
Analytical Procedure: GL-OA-E-022 REV# 14
Analytical Batch: 1852561

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
471889001	40783-001
471889002	40783-002
471889003	40783-003
1204227215	Method Blank (MB)
1204227216	Laboratory Control Sample (LCS)
1204227217	471880002(NonSDG) Post Spike (PS)
1204227218	471880002(NonSDG) Post Spike Duplicate (PSD)
1204228563	Method Blank (MB)
1204228564	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

BRKL007 Brookhaven National Laboratory (310464)

Client SDG: 40783 GEL Work Order: 471889

The Qualifiers in this report are defined as follows:

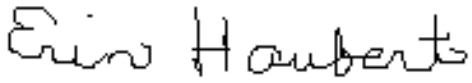
* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Erin Haubert**

Date: 18 MAR 2019 **Title: Data Validator**

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**	**Date Collected:**	**02/20/2019 09:36**	**Matrix:**	**W**
Lab Sample ID:	**471889001**	**Date Received:**	**02/21/2019 09:00**		
Client Sample:	**095-151**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40783-001**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/27/2019 19:00**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/27/2019 19:00**				
Data File:	**022719V8\8L319.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**	**Date Collected:**	**02/20/2019 09:36**	**Matrix:**	**W**
Lab Sample ID:	**471889001**	**Date Received:**	**02/21/2019 09:00**		
Client Sample:	**095-151**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40783-001**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/27/2019 19:00**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/27/2019 19:00**				
Data File:	**022719V8\8L319.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		2.35	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**	**Date Collected:**	**02/20/2019 09:42**	**Matrix:**	**W**
Lab Sample ID:	**471889002**	**Date Received:**	**02/21/2019 09:00**		
Client Sample:	**095-152**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40783-002**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/27/2019 19:31**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/27/2019 19:31**				
Data File:	**022719V8\8L320.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**	**Date Collected:**	**02/20/2019 09:42**	**Matrix:**	**W**
Lab Sample ID:	**471889002**	**Date Received:**	**02/21/2019 09:00**		
Client Sample:	**095-152**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40783-002**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/27/2019 19:31**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/27/2019 19:31**				
Data File:	**022719V8\8L320.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**	**Date Collected:**	**02/20/2019 09:00**	**Matrix:**	**W**
Lab Sample ID:	**471889003**	**Date Received:**	**02/21/2019 09:00**		
Client Sample:	**TB-1**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40783-003**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/27/2019 20:02**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/27/2019 20:02**				
Data File:	**022719V8\8L321.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**	**Date Collected:**	**02/20/2019 09:00**	**Matrix:**	**W**
Lab Sample ID:	**471889003**	**Date Received:**	**02/21/2019 09:00**		
Client Sample:	**TB-1**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40783-003**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/27/2019 20:02**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/27/2019 20:02**				
Data File:	**022719V8\8L321.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Quality Control Summary

Volatile

Surrogate Recovery Report

SDG Number: 40783

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	DCED4 %REC	TOL %REC	TOL %REC	BFB %REC	BFB %REC
1204227216	LCS for batch 1852561	94	104	82			
1204227215	MB for batch 1852561	99	103	89			
1204227217	40786-002PS	94	105	82			
1204227218	40786-002PSD	88	100	82			
1204228564	LCS for batch 1852561	92	102	86			
1204228563	MB for batch 1852561	100	104	85			
471889001	40783-001	105	101	86			
471889002	40783-002	99	99	83			
471889003	40783-003	100	99	86			

Surrogate		Acceptance Limits
DCED4	= 1,2-Dichloroethane-d4	(70%-130%)
TOL	= Toluene-d8	(70%-130%)
BFB	= Bromofluorobenzene	(70%-130%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: **40783**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1852561**
Matrix: **WATER**
Lab Sample ID **1204227216**
Instrument: **VOA8.I**
Analysis Date: **02/26/2019 12:20**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1852561**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	20.0	0.0	17.8	89	70-130
74-87-3	LCS	Chloromethane	20.0	0.0	22.0	110	70-130
75-01-4	LCS	Vinyl chloride	20.0	0.0	20.5	102	70-130
74-83-9	LCS	Bromomethane	20.0	0.0	20.6	103	70-130
75-00-3	LCS	Chloroethane	20.0	0.0	19.7	98	70-130
75-69-4	LCS	Trichlorofluoromethane	20.0	0.0	20.7	103	70-130
75-35-4	LCS	1,1-Dichloroethylene	20.0	0.0	19.9	99	70-130
75-09-2	LCS	Methylene chloride	20.0	0.0	24.7	124	70-130
1634-04-4	LCS	tert-Butyl methyl ether	20.0	0.0	20.2	101	70-130
156-60-5	LCS	trans-1,2-Dichloroethylene	20.0	0.0	21.3	107	70-130
75-34-3	LCS	1,1-Dichloroethane	20.0	0.0	22.5	112	70-130
156-59-2	LCS	cis-1,2-Dichloroethylene	20.0	0.0	22.6	113	70-130
594-20-7	LCS	2,2-Dichloropropane	20.0	0.0	22.7	114	70-130
74-97-5	LCS	Bromochloromethane	20.0	0.0	21.8	109	70-130
67-66-3	LCS	Chloroform	20.0	0.0	19.7	99	70-130
71-55-6	LCS	1,1,1-Trichloroethane	20.0	0.0	19.9	100	70-130
563-58-6	LCS	1,1-Dichloropropene	20.0	0.0	23.1	115	70-130
56-23-5	LCS	Carbon tetrachloride	20.0	0.0	20.6	103	70-130
107-06-2	LCS	1,2-Dichloroethane	20.0	0.0	18.5	92	70-130
71-43-2	LCS	Benzene	20.0	0.0	24.1	121	70-130
79-01-6	LCS	Trichloroethylene	20.0	0.0	20.1	100	70-130
78-87-5	LCS	1,2-Dichloropropane	20.0	0.0	24.1	120	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40783
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1852561
Matrix: WATER
Lab Sample ID 1204227216
Instrument: VOA8.I
Analysis Date: 02/26/2019 12:20
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1852561

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
74-95-3	LCS	Dibromomethane	20.0	0.0	20.6	103	70-130
75-27-4	LCS	Bromodichloromethane	20.0	0.0	19.4	97	70-130
10061-01-5	LCS	cis-1,3-Dichloropropylene	20.0	0.0	18.0	90	70-130
108-88-3	LCS	Toluene	20.0	0.0	24.9	124	70-130
10061-02-6	LCS	trans-1,3-Dichloropropylene	20.0	0.0	20.6	103	70-130
79-00-5	LCS	1,1,2-Trichloroethane	20.0	0.0	23.3	117	70-130
142-28-9	LCS	1,3-Dichloropropane	20.0	0.0	24.5	122	70-130
127-18-4	LCS	Tetrachloroethylene	20.0	0.0	25.0	125	70-130
124-48-1	LCS	Dibromochloromethane	20.0	0.0	22.5	112	70-130
106-93-4	LCS	1,2-Dibromoethane	20.0	0.0	22.3	111	70-130
108-90-7	LCS	Chlorobenzene	20.0	0.0	22.7	114	70-130
100-41-4	LCS	Ethylbenzene	20.0	0.0	23.8	119	70-130
95-47-6	LCS	o-Xylene	20.0	0.0	23.6	118	70-130
100-42-5	LCS	Styrene	20.0	0.0	24.9	125	70-130
75-25-2	LCS	Bromoform	20.0	0.0	21.4	107	70-130
98-82-8	LCS	Isopropylbenzene	20.0	0.0	20.6	103	70-130
79-34-5	LCS	1,1,2,2-Tetrachloroethane	20.0	0.0	19.9	99	70-130
96-18-4	LCS	1,2,3-Trichloropropane	20.0	0.0	18.3	92	70-130
108-86-1	LCS	Bromobenzene	20.0	0.0	22.9	114	70-130
103-65-1	LCS	n-Propylbenzene	20.0	0.0	24.2	121	70-130
108-67-8	LCS	1,3,5-Trimethylbenzene	20.0	0.0	21.2	106	70-130
95-49-8	LCS	2-Chlorotoluene	20.0	0.0	24.4	122	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40783 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 1852561 **Matrix:** WATER

Lab Sample ID 1204227216

Instrument: VOA8.I **Analysis Date:** 02/26/2019 12:20 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 1852561

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
106-43-4	LCS	4-Chlorotoluene	20.0	0.0	21.6	108	70-130
98-06-6	LCS	tert-Butylbenzene	20.0	0.0	20.1	101	70-130
95-63-6	LCS	1,2,4-Trimethylbenzene	20.0	0.0	20.8	104	70-130
135-98-8	LCS	sec-Butylbenzene	20.0	0.0	21.7	108	70-130
99-87-6	LCS	4-Isopropyltoluene	20.0	0.0	21.3	106	70-130
541-73-1	LCS	1,3-Dichlorobenzene	20.0	0.0	22.1	110	70-130
106-46-7	LCS	1,4-Dichlorobenzene	20.0	0.0	20.8	104	70-130
104-51-8	LCS	n-Butylbenzene	20.0	0.0	21.3	107	70-130
96-12-8	LCS	1,2-Dibromo-3-chloropropane	20.0	0.0	19.6	98	70-130
87-68-3	LCS	Hexachlorobutadiene	20.0	0.0	19.0	95	70-130
91-20-3	LCS	Naphthalene	20.0	0.0	18.2	91	70-130
87-61-6	LCS	1,2,3-Trichlorobenzene	20.0	0.0	18.6	93	70-130
120-82-1	LCS	1,2,4-Trichlorobenzene	20.0	0.0	18.2	91	70-130
630-20-6	LCS	1,1,1,2-Tetrachloroethane	20.0	0.0	23.7	118	70-130
95-50-1	LCS	1,2-Dichlorobenzene	20.0	0.0	21.4	107	70-130
179601-23-1	LCS	m,p-Xylenes	40.0	0.0	50.3	126	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: **40783**
Sample Type: **Post Spike**
Client ID: **40786-002PS**
Matrix: **W**
Lab Sample ID **1204227217**
Instrument: **VOA8.I**
Analysis Date: **02/26/2019 20:09**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1852561**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
156-59-2	PS	cis-1,2-Dichloroethylene	20.0	0.360	J	23.5	116	70-130
71-55-6	PS	1,1,1-Trichloroethane	20.0	0.360	J	19.7	97	70-130
75-71-8	PS	Dichlorodifluoromethane	20.0	0.00	U	19.5	98	70-130
74-87-3	PS	Chloromethane	20.0	0.00	U	23.0	115	70-130
75-01-4	PS	Vinyl chloride	20.0	0.00	U	23.9	119	70-130
74-83-9	PS	Bromomethane	20.0	0.00	U	21.9	109	70-130
75-00-3	PS	Chloroethane	20.0	0.00	U	20.7	104	70-130
75-69-4	PS	Trichlorofluoromethane	20.0	0.00	U	21.7	108	70-130
75-35-4	PS	1,1-Dichloroethylene	20.0	0.00	U	21.9	110	70-130
75-09-2	PS	Methylene chloride	20.0	0.00	U	23.8	119	70-130
1634-04-4	PS	tert-Butyl methyl ether	20.0	0.00	U	22.5	112	70-130
156-60-5	PS	trans-1,2-Dichloroethylene	20.0	0.00	U	22.2	111	70-130
75-34-3	PS	1,1-Dichloroethane	20.0	0.00	U	22.8	114	70-130
594-20-7	PS	2,2-Dichloropropane	20.0	0.00	U	22.5	113	70-130
74-97-5	PS	Bromochloromethane	20.0	0.00	U	21.7	108	70-130
563-58-6	PS	1,1-Dichloropropene	20.0	0.00	U	23.0	115	70-130
107-06-2	PS	1,2-Dichloroethane	20.0	0.00	U	18.3	92	70-130
71-43-2	PS	Benzene	20.0	0.00	U	24.0	120	70-130
78-87-5	PS	1,2-Dichloropropane	20.0	0.00	U	23.9	119	70-130
74-95-3	PS	Dibromomethane	20.0	0.00	U	22.5	113	70-130
75-27-4	PS	Bromodichloromethane	20.0	0.00	U	20.7	103	70-130
10061-01-5	PS	cis-1,3-Dichloropropylene	20.0	0.00	U	19.0	95	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: **40783**
Sample Type: **Post Spike**
Client ID: **40786-002PS**
Matrix: **W**
Lab Sample ID **1204227217**
Instrument: **VOA8.I**
Analysis Date: **02/26/2019 20:09**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1852561**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
108-88-3	PS	Toluene	20.0	0.00	U	24.0	120	70-130
10061-02-6	PS	trans-1,3-Dichloropropylene	20.0	0.00	U	20.2	101	70-130
79-00-5	PS	1,1,2-Trichloroethane	20.0	0.00	U	23.6	118	70-130
142-28-9	PS	1,3-Dichloropropane	20.0	0.00	U	24.0	120	70-130
124-48-1	PS	Dibromochloromethane	20.0	0.00	U	21.6	108	70-130
106-93-4	PS	1,2-Dibromoethane	20.0	0.00	U	21.6	108	70-130
108-90-7	PS	Chlorobenzene	20.0	0.00	U	21.2	106	70-130
100-41-4	PS	Ethylbenzene	20.0	0.00	U	23.2	116	70-130
95-47-6	PS	o-Xylene	20.0	0.00	U	22.9	114	70-130
100-42-5	PS	Styrene	20.0	0.00	U	22.8	114	70-130
75-25-2	PS	Bromoform	20.0	0.00	U	22.6	113	70-130
98-82-8	PS	Isopropylbenzene	20.0	0.00	U	20.7	103	70-130
79-34-5	PS	1,1,2,2-Tetrachloroethane	20.0	0.00	U	20.7	103	70-130
96-18-4	PS	1,2,3-Trichloropropane	20.0	0.00	U	18.5	93	70-130
108-86-1	PS	Bromobenzene	20.0	0.00	U	22.4	112	70-130
103-65-1	PS	n-Propylbenzene	20.0	0.00	U	23.3	116	70-130
108-67-8	PS	1,3,5-Trimethylbenzene	20.0	0.00	U	20.1	101	70-130
95-49-8	PS	2-Chlorotoluene	20.0	0.00	U	23.4	117	70-130
106-43-4	PS	4-Chlorotoluene	20.0	0.00	U	20.7	103	70-130
98-06-6	PS	tert-Butylbenzene	20.0	0.00	U	19.8	99	70-130
95-63-6	PS	1,2,4-Trimethylbenzene	20.0	0.00	U	20.0	100	70-130
135-98-8	PS	sec-Butylbenzene	20.0	0.00	U	21.3	107	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: **40783**
Sample Type: **Post Spike**
Client ID: **40786-002PS**
Matrix: **W**
Lab Sample ID **1204227217**
Instrument: **VOA8.I**
Analysis Date: **02/26/2019 20:09**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1852561**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
99-87-6	PS	4-Isopropyltoluene	20.0	0.00	U	21.1	105	70-130
541-73-1	PS	1,3-Dichlorobenzene	20.0	0.00	U	21.6	108	70-130
106-46-7	PS	1,4-Dichlorobenzene	20.0	0.00	U	20.8	104	70-130
104-51-8	PS	n-Butylbenzene	20.0	0.00	U	20.4	102	70-130
96-12-8	PS	1,2-Dibromo-3-chloropropane	20.0	0.00	U	19.5	98	70-130
87-68-3	PS	Hexachlorobutadiene	20.0	0.00	U	17.9	90	70-130
91-20-3	PS	Naphthalene	20.0	0.00	U	19.6	98	70-130
87-61-6	PS	1,2,3-Trichlorobenzene	20.0	0.00	U	19.3	97	70-130
120-82-1	PS	1,2,4-Trichlorobenzene	20.0	0.00	U	19.2	96	70-130
630-20-6	PS	1,1,1,2-Tetrachloroethane	20.0	0.00	U	22.2	111	70-130
95-50-1	PS	1,2-Dichlorobenzene	20.0	0.00	U	21.5	107	70-130
67-66-3	PS	Chloroform	20.0	0.540		20.3	99	70-130
56-23-5	PS	Carbon tetrachloride	20.0	0.970		21.1	100	70-130
79-01-6	PS	Trichloroethylene	20.0	0.780		22.6	109	70-130
127-18-4	PS	Tetrachloroethylene	20.0	1.38		24.6	116	70-130
179601-23-1	PS	m,p-Xylenes	40.0	0.00	U	47.9	120	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40783 **Sample Type:** Post Spike Duplicate

Client ID: 40786-002PSD **Matrix:** W

Lab Sample ID 1204227218

Instrument: VOA8.I **Analysis Date:** 02/26/2019 20:41 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 1852561

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
156-59-2	PSD	cis-1,2-Dichloroethylene	20.0	0.360	J	22.9	113	70-130	3	0-20
71-55-6	PSD	1,1,1-Trichloroethane	20.0	0.360	J	20.1	99	70-130	2	0-20
75-71-8	PSD	Dichlorodifluoromethane	20.0	0.00	U	19.2	96	70-130	1	0-20
74-87-3	PSD	Chloromethane	20.0	0.00	U	23.3	116	70-130	1	0-20
75-01-4	PSD	Vinyl chloride	20.0	0.00	U	24.6	123	70-130	3	0-20
74-83-9	PSD	Bromomethane	20.0	0.00	U	22.0	110	70-130	0	0-20
75-00-3	PSD	Chloroethane	20.0	0.00	U	21.6	108	70-130	4	0-20
75-69-4	PSD	Trichlorofluoromethane	20.0	0.00	U	21.6	108	70-130	0	0-20
75-35-4	PSD	1,1-Dichloroethylene	20.0	0.00	U	21.0	105	70-130	4	0-20
75-09-2	PSD	Methylene chloride	20.0	0.00	U	24.3	121	70-130	2	0-20
1634-04-4	PSD	tert-Butyl methyl ether	20.0	0.00	U	22.3	112	70-130	1	0-20
156-60-5	PSD	trans-1,2-Dichloroethylene	20.0	0.00	U	22.4	112	70-130	1	0-20
75-34-3	PSD	1,1-Dichloroethane	20.0	0.00	U	22.1	110	70-130	3	0-20
594-20-7	PSD	2,2-Dichloropropane	20.0	0.00	U	20.5	103	70-130	9	0-20
74-97-5	PSD	Bromochloromethane	20.0	0.00	U	21.6	108	70-130	0	0-20
563-58-6	PSD	1,1-Dichloropropene	20.0	0.00	U	23.5	118	70-130	2	0-20
107-06-2	PSD	1,2-Dichloroethane	20.0	0.00	U	18.8	94	70-130	3	0-20
71-43-2	PSD	Benzene	20.0	0.00	U	23.5	117	70-130	2	0-20
78-87-5	PSD	1,2-Dichloropropane	20.0	0.00	U	23.9	120	70-130	0	0-20
74-95-3	PSD	Dibromomethane	20.0	0.00	U	21.8	109	70-130	3	0-20
75-27-4	PSD	Bromodichloromethane	20.0	0.00	U	21.0	105	70-130	1	0-20
10061-01-5	PSD	cis-1,3-Dichloropropylene	20.0	0.00	U	19.5	98	70-130	3	0-20

Quality Control Summary
Spike Recovery Report

SDG Number: **40783**
Sample Type: **Post Spike Duplicate**
Client ID: **40786-002PSD**
Matrix: **W**
Lab Sample ID **1204227218**
Instrument: **VOA8.I**
Analysis Date: **02/26/2019 20:41**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1852561**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
108-88-3	PSD	Toluene	20.0	0.00	U	23.4	117	70-130	3	0-20
10061-02-6	PSD	trans-1,3-Dichloropropylene	20.0	0.00	U	20.0	100	70-130	1	0-20
79-00-5	PSD	1,1,2-Trichloroethane	20.0	0.00	U	22.6	113	70-130	4	0-20
142-28-9	PSD	1,3-Dichloropropane	20.0	0.00	U	23.0	115	70-130	4	0-20
124-48-1	PSD	Dibromochloromethane	20.0	0.00	U	21.3	106	70-130	2	0-20
106-93-4	PSD	1,2-Dibromoethane	20.0	0.00	U	21.1	105	70-130	2	0-20
108-90-7	PSD	Chlorobenzene	20.0	0.00	U	21.5	107	70-130	1	0-20
100-41-4	PSD	Ethylbenzene	20.0	0.00	U	22.9	115	70-130	1	0-20
95-47-6	PSD	o-Xylene	20.0	0.00	U	22.7	114	70-130	1	0-20
100-42-5	PSD	Styrene	20.0	0.00	U	23.2	116	70-130	1	0-20
75-25-2	PSD	Bromoform	20.0	0.00	U	22.1	110	70-130	3	0-20
98-82-8	PSD	Isopropylbenzene	20.0	0.00	U	20.9	105	70-130	1	0-20
79-34-5	PSD	1,1,2,2-Tetrachloroethane	20.0	0.00	U	21.2	106	70-130	2	0-20
96-18-4	PSD	1,2,3-Trichloropropane	20.0	0.00	U	19.3	96	70-130	4	0-20
108-86-1	PSD	Bromobenzene	20.0	0.00	U	22.6	113	70-130	1	0-20
103-65-1	PSD	n-Propylbenzene	20.0	0.00	U	23.7	119	70-130	2	0-20
108-67-8	PSD	1,3,5-Trimethylbenzene	20.0	0.00	U	20.8	104	70-130	3	0-20
95-49-8	PSD	2-Chlorotoluene	20.0	0.00	U	23.0	115	70-130	2	0-20
106-43-4	PSD	4-Chlorotoluene	20.0	0.00	U	21.7	109	70-130	5	0-20
98-06-6	PSD	tert-Butylbenzene	20.0	0.00	U	20.1	100	70-130	1	0-20
95-63-6	PSD	1,2,4-Trimethylbenzene	20.0	0.00	U	21.0	105	70-130	4	0-20
135-98-8	PSD	sec-Butylbenzene	20.0	0.00	U	22.0	110	70-130	3	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40783 **Sample Type:** Post Spike Duplicate

Client ID: 40786-002PSD **Matrix:** W

Lab Sample ID 1204227218

Instrument: VOA8.I **Analysis Date:** 02/26/2019 20:41 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 1852561

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
99-87-6	PSD	4-Isopropyltoluene	20.0	0.00	U	20.8	104	70-130	1	0-20
541-73-1	PSD	1,3-Dichlorobenzene	20.0	0.00	U	21.4	107	70-130	1	0-20
106-46-7	PSD	1,4-Dichlorobenzene	20.0	0.00	U	20.9	104	70-130	0	0-20
104-51-8	PSD	n-Butylbenzene	20.0	0.00	U	20.4	102	70-130	0	0-20
96-12-8	PSD	1,2-Dibromo-3-chloropropane	20.0	0.00	U	19.3	96	70-130	1	0-20
87-68-3	PSD	Hexachlorobutadiene	20.0	0.00	U	19.1	95	70-130	6	0-20
91-20-3	PSD	Naphthalene	20.0	0.00	U	19.8	99	70-130	1	0-20
87-61-6	PSD	1,2,3-Trichlorobenzene	20.0	0.00	U	19.6	98	70-130	1	0-20
120-82-1	PSD	1,2,4-Trichlorobenzene	20.0	0.00	U	20.5	103	70-130	6	0-20
630-20-6	PSD	1,1,1,2-Tetrachloroethane	20.0	0.00	U	21.9	110	70-130	1	0-20
95-50-1	PSD	1,2-Dichlorobenzene	20.0	0.00	U	21.4	107	70-130	0	0-20
67-66-3	PSD	Chloroform	20.0	0.540		20.0	97	70-130	1	0-20
56-23-5	PSD	Carbon tetrachloride	20.0	0.970		21.5	103	70-130	2	0-20
79-01-6	PSD	Trichloroethylene	20.0	0.780		23.2	112	70-130	2	0-20
127-18-4	PSD	Tetrachloroethylene	20.0	1.38		23.6	111	70-130	4	0-20
179601-23-1	PSD	m,p-Xylenes	40.0	0.00	U	47.8	120	70-130	0	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: **40783**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1852561**
Matrix: **WATER**
Lab Sample ID **1204228564**
Instrument: **VOA8.I**
Analysis Date: **02/27/2019 12:16**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1852561**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	20.0	0.0	15.8	79	70-130
74-87-3	LCS	Chloromethane	20.0	0.0	21.2	106	70-130
75-01-4	LCS	Vinyl chloride	20.0	0.0	20.8	104	70-130
74-83-9	LCS	Bromomethane	20.0	0.0	21.3	107	70-130
75-00-3	LCS	Chloroethane	20.0	0.0	19.7	99	70-130
75-69-4	LCS	Trichlorofluoromethane	20.0	0.0	20.1	100	70-130
75-35-4	LCS	1,1-Dichloroethylene	20.0	0.0	21.2	106	70-130
75-09-2	LCS	Methylene chloride	20.0	0.0	24.7	124	70-130
1634-04-4	LCS	tert-Butyl methyl ether	20.0	0.0	21.6	108	70-130
156-60-5	LCS	trans-1,2-Dichloroethylene	20.0	0.0	22.0	110	70-130
75-34-3	LCS	1,1-Dichloroethane	20.0	0.0	21.3	106	70-130
156-59-2	LCS	cis-1,2-Dichloroethylene	20.0	0.0	23.0	115	70-130
594-20-7	LCS	2,2-Dichloropropane	20.0	0.0	22.5	112	70-130
74-97-5	LCS	Bromochloromethane	20.0	0.0	21.2	106	70-130
67-66-3	LCS	Chloroform	20.0	0.0	20.6	103	70-130
71-55-6	LCS	1,1,1-Trichloroethane	20.0	0.0	20.1	101	70-130
563-58-6	LCS	1,1-Dichloropropene	20.0	0.0	23.0	115	70-130
56-23-5	LCS	Carbon tetrachloride	20.0	0.0	19.9	99	70-130
107-06-2	LCS	1,2-Dichloroethane	20.0	0.0	18.3	92	70-130
71-43-2	LCS	Benzene	20.0	0.0	24.0	120	70-130
79-01-6	LCS	Trichloroethylene	20.0	0.0	21.3	107	70-130
78-87-5	LCS	1,2-Dichloropropane	20.0	0.0	23.7	119	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40783
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1852561
Matrix: WATER
Lab Sample ID 1204228564
Instrument: VOA8.I
Analysis Date: 02/27/2019 12:16
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1852561

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
74-95-3	LCS	Dibromomethane	20.0	0.0	22.4	112	70-130
75-27-4	LCS	Bromodichloromethane	20.0	0.0	20.7	103	70-130
10061-01-5	LCS	cis-1,3-Dichloropropylene	20.0	0.0	18.6	93	70-130
108-88-3	LCS	Toluene	20.0	0.0	23.9	119	70-130
10061-02-6	LCS	trans-1,3-Dichloropropylene	20.0	0.0	20.8	104	70-130
79-00-5	LCS	1,1,2-Trichloroethane	20.0	0.0	22.6	113	70-130
142-28-9	LCS	1,3-Dichloropropane	20.0	0.0	24.8	124	70-130
127-18-4	LCS	Tetrachloroethylene	20.0	0.0	24.9	125	70-130
124-48-1	LCS	Dibromochloromethane	20.0	0.0	22.2	111	70-130
106-93-4	LCS	1,2-Dibromoethane	20.0	0.0	21.1	105	70-130
108-90-7	LCS	Chlorobenzene	20.0	0.0	21.8	109	70-130
100-41-4	LCS	Ethylbenzene	20.0	0.0	23.2	116	70-130
95-47-6	LCS	o-Xylene	20.0	0.0	22.5	113	70-130
100-42-5	LCS	Styrene	20.0	0.0	23.3	116	70-130
75-25-2	LCS	Bromoform	20.0	0.0	22.7	114	70-130
98-82-8	LCS	Isopropylbenzene	20.0	0.0	20.4	102	70-130
79-34-5	LCS	1,1,2,2-Tetrachloroethane	20.0	0.0	20.2	101	70-130
96-18-4	LCS	1,2,3-Trichloropropane	20.0	0.0	17.4	87	70-130
108-86-1	LCS	Bromobenzene	20.0	0.0	22.1	111	70-130
103-65-1	LCS	n-Propylbenzene	20.0	0.0	23.2	116	70-130
108-67-8	LCS	1,3,5-Trimethylbenzene	20.0	0.0	19.8	99	70-130
95-49-8	LCS	2-Chlorotoluene	20.0	0.0	23.0	115	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40783
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1852561
Matrix: WATER
Lab Sample ID 1204228564
Instrument: VOA8.I
Analysis Date: 02/27/2019 12:16
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1852561

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
106-43-4	LCS	4-Chlorotoluene	20.0	0.0	20.2	101	70-130
98-06-6	LCS	tert-Butylbenzene	20.0	0.0	18.3	92	70-130
95-63-6	LCS	1,2,4-Trimethylbenzene	20.0	0.0	20.3	102	70-130
135-98-8	LCS	sec-Butylbenzene	20.0	0.0	20.2	101	70-130
99-87-6	LCS	4-Isopropyltoluene	20.0	0.0	20.3	102	70-130
541-73-1	LCS	1,3-Dichlorobenzene	20.0	0.0	21.6	108	70-130
106-46-7	LCS	1,4-Dichlorobenzene	20.0	0.0	20.3	102	70-130
104-51-8	LCS	n-Butylbenzene	20.0	0.0	20.0	100	70-130
96-12-8	LCS	1,2-Dibromo-3-chloropropane	20.0	0.0	18.3	91	70-130
87-68-3	LCS	Hexachlorobutadiene	20.0	0.0	17.8	89	70-130
91-20-3	LCS	Naphthalene	20.0	0.0	17.8	89	70-130
87-61-6	LCS	1,2,3-Trichlorobenzene	20.0	0.0	17.6	88	70-130
120-82-1	LCS	1,2,4-Trichlorobenzene	20.0	0.0	18.1	91	70-130
630-20-6	LCS	1,1,1,2-Tetrachloroethane	20.0	0.0	22.8	114	70-130
95-50-1	LCS	1,2-Dichlorobenzene	20.0	0.0	20.6	103	70-130
179601-23-1	LCS	m,p-Xylenes	40.0	0.0	47.6	119	70-130

Method Blank Summary

SDG Number:	**40783**	**Client:**	**BRKL007**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1852561**	**Instrument ID:**	**VOA8.I**	**Data File:**	**022619V8\8L210B.D**
Lab Sample ID:	**1204227215**	**Prep Date:**	**02/26/2019 13:23**	**Analyzed:**	**02/26/19 13:23**
Column:	**DB-624**				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 1852561	1204227216	022619V8\8L208B.D	02/26/19	1220
02	40786-002PS	1204227217	022619V8\8L223.D	02/26/19	2009
03	40786-002PSD	1204227218	022619V8\8L224.D	02/26/19	2041

Method Blank Summary

SDG Number:	**40783**	**Client:**	**BRKL007**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1852561**	**Instrument ID:**	**VOA8.I**	**Data File:**	**022719V8\8L308B.D**
Lab Sample ID:	**1204228563**	**Prep Date:**	**02/27/2019 13:18**	**Analyzed:**	**02/27/19 13:18**
Column:	**DB-624**				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
05	LCS for batch 1852561	1204228564	022719V8\8L306B.D	02/27/19	1216
06	40783-001	471889001	022719V8\8L319.D	02/27/19	1900
07	40783-002	471889002	022719V8\8L320.D	02/27/19	1931
08	40783-003	471889003	022719V8\8L321.D	02/27/19	2002

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 40783

Instrument ID: VOA8.I **Injection Date/Time:** 07-JAN-19 09:32

Column Description: DB-624 **Lab File ID** 010719V8\8E103.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.7
75	30.0 - 60.0% of mass 95	50.2
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	7.8
173	Less than 2.0% of mass 174	0
174	50.0 - 100.0% of mass 95	89.5
175	5.0 -9.0% of mass 174	6.2
176	95.0 - 101.0% of mass 174	95.7
177	5.0 - 9.0% of mass 176	6.6

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
ICALMIX[A]	W8VM190107-02	010719V8\8E105.D	07-JAN-19 10:35
ICALMIX[A]	W8VM190107-03	010719V8\8E106.D	07-JAN-19 11:07
ICALMIX[A]	W8VM190107-04	010719V8\8E107.D	07-JAN-19 11:38
ICALMIX[A]	W8VM190107-05	010719V8\8E108.D	07-JAN-19 12:09
ICALMIX[A]	W8VM190107-06	010719V8\8E109.D	07-JAN-19 12:40
ICALMIX[A]	W8VM190107-07	010719V8\8E110.D	07-JAN-19 13:11
ICALMIX[A]	W8VM190107-01	010719V8\8E112.D	07-JAN-19 14:14

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 40783

Instrument ID: VOA8.I **Injection Date/Time:** 26-FEB-19 10:15

Column Description: DB-624 **Lab File ID** 022619V8\8L203.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	17.5
75	30.0 - 60.0% of mass 95	48.2
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	1.8
174	50.0 - 100.0% of mass 95	81.6
175	5.0 -9.0% of mass 174	8.4
176	95.0 - 101.0% of mass 174	96.9
177	5.0 - 9.0% of mass 176	7.2

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCVMIX[A]01	W8VM190226-01	022619V8\8L208.D	26-FEB-19 12:20
BLK01LCS	1204227216	022619V8\8L208B.D	26-FEB-19 12:20
BLK01	1204227215	022619V8\8L210B.D	26-FEB-19 13:23
40786-002MS	1204227217	022619V8\8L223.D	26-FEB-19 20:09
40786-002MSD	1204227218	022619V8\8L224.D	26-FEB-19 20:41

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 40783

Instrument ID: VOA8.I **Injection Date/Time:** 27-FEB-19 11:45

Column Description: DB-624 **Lab File ID** 022719V8\8L304.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	16
75	30.0 - 60.0% of mass 95	50.2
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	6.1
173	Less than 2.0% of mass 174	0.5
174	50.0 - 100.0% of mass 95	88.3
175	5.0 -9.0% of mass 174	7.7
176	95.0 - 101.0% of mass 174	95.2
177	5.0 - 9.0% of mass 176	7.2

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCVMIX[A]02	W8VM190227-01	022719V8\8L306.D	27-FEB-19 12:16
BLK02LCS	1204228564	022719V8\8L306B.D	27-FEB-19 12:16
BLK02	1204228563	022719V8\8L308B.D	27-FEB-19 13:18
40783-001	471889001	022719V8\8L319.D	27-FEB-19 19:00
40783-002	471889002	022719V8\8L320.D	27-FEB-19 19:31
40783-003	471889003	022719V8\8L321.D	27-FEB-19 20:02

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 40783

Instrument: VOA8.I

STD Analysis Time: 26-FEB-19 12:20

GC Column: DB-624

Data File: 022619V8\8L208.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	1628138	11.0	1324278	14.2	1082296	16.7
Upper Limit	3256276	11.5	2648556	14.7	2164592	17.2
Lower Limit	814069	10.5	662139	13.7	541148	16.2
Sample ID						
BLK01LCS	1628138	11.0	1324278	14.2	1082296	16.7
BLK01	1331929	11.0	1096571	14.2	674201	16.7
40786-002MS	1582130	11.0	1349482	14.2	1070127	16.7
40786-002MSD	1576883	11.0	1341127	14.2	1022586	16.7

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 40783

Instrument: VOA8.I

STD Analysis Time: 27-FEB-19 12:16

GC Column: DB-624

Data File: 022719V8\8L306.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	1608774	11.0	1383148	14.2	1114258	16.7
Upper Limit	3217548	11.5	2766296	14.7	2228516	17.2
Lower Limit	804387	10.5	691574	13.7	557129	16.2
Sample ID						
BLK02LCS	1608774	11.0	1383148	14.2	1114258	16.7
BLK02	1330732	11.0	1114818	14.2	711233	16.7
40783-001	1159620	11.0	985359	14.2	625560	16.7
40783-002	1174294	11.0	1023554	14.2	647945	16.7
40783-003	1158747	11.0	999530	14.2	589416	16.7

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Standards

Low level SW846 8260B and Regular level 8260B and EPA 624

Calibration Standard Concentration Levels

	Level 1	Level 1a	Level 2	Level 3	Level 4	Level 5	Level 6 #	Level 7 !	Level 7a
Fluorobenzene (IS)	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
1,2-Dichloroethane-d4(surr)		20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Dichlorodifluoromethane		0.5	1	2	5	10	20	50	100
Chloromethane		0.5	1	2	5	10	20	50	100
Vinyl chloride		0.5	1	2	5	10	20	50	100
Bromomethane		0.5	1	2	5	10	20	50	100
Chloroethane		0.5	1	2	5	10	20	50	100
Trichlorofluoromethane		0.5	1	2	5	10	20	50	100
1,1-Dichloroethene		0.5	1	2	5	10	20	50	100
Acetone	1	2.5	5	10	25	50	100	250	500
Iodomethane	1	2.5	5	10	25	50	100	250	500
Carbon disulfide	1	2.5	5	10	25	50	100	250	500
Methylene chloride		0.5	1	2	5	10	20	50	100
trans-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,1-Dichloroethane		0.5	1	2	5	10	20	50	100
Ethyl ether		0.5	1	2	5	10	20	50	100
Vinyl acetate	1	2.5	5	10	25	50	100	250	500
cis-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethene (total)		1	2	4	10	20	40	100	200
Cyclohexene		0.5	1	2	5	10	20	50	100
2-Chloroethylvinyl ether			5	10	25	50	100	250	500
2,2-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Butanone	1	2.5	5	10	25	50	100	250	500
Bromochloromethane		0.5	1	2	5	10	20	50	100
Chloroform		0.5	1	2	5	10	20	50	100
1,1,1-Trichloroethane		0.5	1	2	5	10	20	50	100
1,1-Dichloropropene		0.5	1	2	5	10	20	50	100
Carbon tetrachloride		0.5	1	2	5	10	20	50	100
Benzene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethane		0.5	1	2	5	10	20	50	100
Trichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloropropane		0.5	1	2	5	10	20	50	100
Dibromomethane		0.5	1	2	5	10	20	50	100
Bromodichloromethane		0.5	1	2	5	10	20	50	100
cis-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
tert-Butylmethylether		0.5	1	2	5	10	20	50	100
Ethyl Ether			1	2	5	10	20	50	100
Acetonitrile			25	50	125	250	500	1250	2500
Methyl acetate			5	10	25	50	100	250	500
Cyclohexane			1	2	5	10	20	50	100
Methylcyclohexane			1	2	5	10	20	50	100
n-Butyl alcohol		50	100	200	500	1000	2000	5000	10000
2-Nitropropane			5	10	25	50	100	250	500
Ethyl acetate			5	10	25	50	100	250	500
Acrolein			5	10	25	50	100	250	500
Trichlorotrifluoroethane		2	5	10	25	50	100	250	500
Allyl chloride			5	10	25	50	100	250	500
Acrylonitrile			5	10	25	50	100	250	500
1,4-Dioxane			50	100	250	500	1000	2500	5000
Isobutyl alcohol			50	100	250	500	1000	2500	5000
Methacrylonitrile			5	10	25	50	100	250	500
Propionitrile			5	10	25	50	100	250	500
Methyl methacrylate			5	10	25	50	100	250	500
Chlorotrifluoroethylene			5	10	25	50	100	150	200
2-Chloro-1,1,1-trifluoroethane			5	10	25	50	100	150	200
Tetrahydrofuran			5	10	25	50	100	250	500
tert-Butyl alcohol			50	100	250	500	1000	2500	5000
Isopropyl ether			1	2	5	10	20	50	100
Ethyl tert-butyl ether			1	2	5	10	20	50	100
Isopropyl alcohol			50	100	250	500	1000	2500	5000
Methyl tert-amyl ether			1	2	5	10	20	50	100
1-Chlorohexane			1	2	5	10	20	50	100
2-Chloro-1,3-butadiene(chloroprene)			1	2	5	10	20	50	100
Chlorobenzene-d5 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Toluene-d8 (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
4-Methyl-2-pentanone	1	2.5	5	10	25	50	100	250	500
Toluene		0.5	1	2	5	10	20	50	100
trans-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
1,1,2-Trichloroethane		0.5	1	2	5	10	20	50	100
Tetrachloroethene		0.5	1	2	5	10	20	50	100
1,3-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Hexanone	1	2.5	5	10	25	50	20	250	500
Dibromochloromethane		0.5	1	2	5	10	20	50	100
1,2-Dibromoethane		0.5	1	2	5	10	20	50	100
Chlorobenzene		0.5	1	2	5	10	20	50	100
1,1,1,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Ethylbenzene		0.5	1	2	5	10	20	50	100
m,p-Xylene		1	2	4	10	20	20	100	200
o-Xylene		0.5	1	2	5	10	20	50	100
Xylenes (total)		1.5	3	6	15	30	60	150	300
Stryene		0.5	1	2	5	10	20	50	100
Ethyl methacrylate			5	10	25	50	100	250	500
1,4-Dichlorobenzene-d4 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromofluorobenzene (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromoform		0.5	1	2	5	10	20	50	100
Isopropylbenzene		0.5	1	2	5	10	20	50	100
1,1,2,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Bromobenzene		0.5	1	2	5	10	20	50	100
1,2,3-Trichloropropane		0.5	1	2	5	10	20	50	100
n-Propylbenzene		0.5	1	2	5	10	20	50	100
2-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,3,5-Trimethylbenzene		0.5	1	2	5	10	20	50	100
4-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,2,4-Trimethylbenzene		0.5	1	2	5	10	20	50	100
sec-Butylbenzene		0.5	1	2	5	10	20	50	100
1,3-Dichlorobenzene		0.5	1	2	5	10	20	50	100
tert-Butylbenzene		0.5	1	2	5	10	20	50	100
Isopropyltoluene		0.5	1	2	5	10	20	50	100
1,4-Dichlorobenzene		0.5	1	2	5	10	20	50	100
n-Butylbenzene		0.5	1	2	5	10	20	50	100
1,2-Dichlorobenzene		0.5	1	2	5	10	20	50	100
1,2-Dibromo-3-chloropropa		0.5	1	2	5	10	20	50	100
1,2,4-Trichlorobenzene		0.5	1	2	5	10	20	50	100
Hexachlorobutadiene		0.5	1	2	5	10	20	50	100
Naphthalene		0.5	1	2	5	10	20	50	100
1,2,3-Trichlorobenzene		0.5	1	2	5	10	20	50	100
cis-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
trans-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
Pentachloroethane			5	10	25	50	100	250	500
Benzyl chloride			5	10	25	50	100	250	500
Cyclohexanone			25	50	125	250	500	1250	2500
bis(2-Chloro-isopropyl)ether			5	10	25	50	100	250	500

Method	PQL	Concentration range		
SW 846 8260B low level	Level 1 &1a	Levels 1-> 7a	IS/SS @ 20 ppb	
EPA 524.2	Level 1a	Levels 1a-> 7a	IS/SS @ 20 ppb	
SW846 8260B/624	Level 2	Levels 1a-> 7a	IS/SS @ 50 ppb	n-butyl alchol only in 1a

#: Indicates calibration verification concentration level used for low level analysis

!: Indicates calibration verification concentration level used for regular level analysis

Calibration History Report VOA8
GEL Laboratories, LLC

01/09/2019

Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

01/10/2019

Cal Lvl:10 Amt:40.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E109.D

Injection Date	Mix	Calibration File
07 Jan 2019 12:40	A	C:\msdchem\1\DATA\010719V8\8E109.D

Cal Lvl:2 Amt:0.50 Last Updated with: C:\msdchem\1\DATA\010719V8\8E112.D

Injection Date	Mix	Calibration File
07 Jan 2019 14:14	A	C:\msdchem\1\DATA\010719V8\8E112.D

Cal Lvl:3 Amt:1.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E105.D

Injection Date	Mix	Calibration File
07 Jan 2019 10:35	A	C:\msdchem\1\DATA\010719V8\8E105.D

Cal Lvl:4 Amt:2.00 None of the compounds use this level.

Injection Date	Mix	Calibration File

Cal Lvl:5 Amt:5.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E106.D

Injection Date	Mix	Calibration File
07 Jan 2019 11:07	A	C:\msdchem\1\DATA\010719V8\8E106.D

Cal Lvl:6 Amt:10.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E107.D

Injection Date	Mix	Calibration File
07 Jan 2019 11:38	A	C:\msdchem\1\DATA\010719V8\8E107.D

Cal Lvl:7 Amt:20.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E108.D

Injection Date	Mix	Calibration File
07 Jan 2019 12:09	A	C:\msdchem\1\DATA\010719V8\8E108.D

Cal Lvl:8 Amt:50.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E110.D

Injection Date	Mix	Calibration File
07 Jan 2019 13:11	A	C:\msdchem\1\DATA\010719V8\8E110.D

Cal Lvl:9 Amt:0.00 None of the compounds use this level.

Injection Date	Mix	Calibration File

VOA8-524T-010719-.M Wed Jan 09 13:22:27 2019

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

01/09/2019

01/10/2019

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
2)MA Dichlorodifluoromethane	0.2075742	0.2359308	0.2537771		0.2535455	0.2486408				
	0.2315229	0.2238049					0.2364	AVRG		7.2436
3)MA Chloromethane	1186666	20860	30344		126558	259697		1/x		
0.0057 | 0.4153 | 0.00	574076	1583892						LINR		0.9997
4)MA Vinyl chloride	0.4181729	0.4778060	0.4523909		0.4186174	0.4140580				
	0.4160268	0.4329160					0.4329	AVRG		5.5454
5)MA Bromomethane	1145944	18639	23425		115563	246923		1/x		
0.0035 | 0.3872 | 0.00	521329	1436142						LINR		0.9992
6)MA Chloroethane	0.2586149	0.3247590	0.3226304		0.2707086	0.2664661				
	0.2497859	0.2618999					0.2793	AVRG		11.1181
7)MA Trichlorofluoromethane	0.7475544	0.8939189	0.9394286		0.7972604	0.8150803				
	0.7966293	0.8302540					0.8314	AVRG		7.8024
8)MA 1,1-Dichloroethylene	0.5336141	0.6280194	0.5541476		0.5115314	0.5216894				
	0.5295831	0.5591992					0.5483	AVRG		7.1167
9)MA Methylene chloride	1056775	17833	25493		116858	241966		1/x		
0.0043 | 0.3784 | 0.00	531202	1445678						LINR		0.9996
10)MA tert-Butyl methyl ether	0.9293820	0.9146784	0.8283128		0.7955683	0.8522984				
	0.9063300	0.9667173					0.8848	AVRG		6.8849
11)MA trans-1,2-Dichloroethyle	0.4929532	0.5434724	0.5334660		0.4655420	0.4781584				
	0.4865226	0.5087505					0.5013	AVRG		5.7421
12)MA 1,1-Dichloroethane	0.5144806	0.4696439	0.6000804		0.5412659	0.5269457				
	0.5336804	0.5039961					0.5272	AVRG		7.5738
13)MA cis-1,2-Dichloroethylene	0.3002334	0.3196770	0.2714125		0.2743519	0.3018091				
	0.3091886	0.3041220					0.2973	AVRG		6.0090
14)MA 2,2-Dichloropropane	0.2140613	0.1921327	0.2331321		0.2200836	0.2353400				
	0.2321597	0.2215272					0.2212	AVRG		6.8052
15)MA Bromochloromethane	0.1731017	0.1706340	0.1876398		0.1636255	0.1780352				
	0.1740667	0.1724379					0.1742	AVRG		4.2192
16)MA Chloroform	0.4754387	0.5642318	0.4906712		0.4935777	0.4936449				
	0.5040429	0.4762751					0.4997	AVRG		6.0459

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
17)MA 1,1,1-Trichloroethane	0.3939887	0.3939674	0.4076876		0.4125252	0.4130724				
	0.4189098	0.4071206					0.4068	AVRG		2.3505
18)MA 1,1-Dichloropropene	0.3279976	0.2692260	0.2181393		0.2858265	0.3212903				
	0.3248799	0.3269895					0.2963	AVRG		14.0086
19)MA Carbon tetrachloride	0.4203538	0.4042856	0.4601534		0.4010136	0.4369740				
	0.4351933	0.4274687					0.4265	AVRG		4.7857
20)SA 1,2-Dichloroethane-d4	0.1440143	0.1396188	0.1632026		0.1500971	0.1446981				
	0.1480506	0.1447435					0.1478	AVRG		5.1150
21)MA 1,2-Dichloroethane	0.3418874	0.3931974	0.3494964		0.3271836	0.3347503				
	0.3572771	0.3394453					0.3490	AVRG		6.2366
22)MA Benzene	0.9877496	0.8518148	0.8379471		0.9463768	0.9760203				
	1.0082012	0.9709625					0.9399	AVRG		7.1926
23)MA Trichloroethylene	0.2952751	0.2391648	0.2285811		0.2367153	0.2740737				
	0.2975130	0.2906313					0.2660	AVRG		11.3823
24)MA 1,2-Dichloropropane	0.2717723	0.2650679	0.2433904		0.2620093	0.2629713				
	0.2787997	0.2762889					0.2658	AVRG		4.4516
25)MA Dibromomethane	0.1952230	0.1819069	0.2129827		0.1954658	0.1903944				
	0.2026354	0.1974727					0.1966	AVRG		4.9282
26)MA Bromodichloromethane	0.3732784	0.3535574	0.3728389		0.3495678	0.3615442				
	0.3742296	0.3695108					0.3649	AVRG		2.7777
27)MA cis-1,3-Dichloropropylen -0.0066 | 0.3885 | 0.00	1110188 509977	8378 1515961	14476		76798	204334		1/x LINR	# 	0.9935
29)SA Toluene-d8	1.1287738	1.1923469	1.2107485		1.2287151	1.1909584				
	1.1618749	1.1369662					1.1786	AVRG		3.1713
30)MA Toluene	1.2978781	1.3069079	1.1848377		1.3501292	1.4200446				
	1.4124978	1.2747713					1.3210	AVRG		6.2148
31)MA trans-1,3-Dichloropropyl -0.0055 | 0.4266 | 0.00	1084959 491124	8247 1429241	13201		83319	204610		1/x LINR		0.9983
32)MA 1,1,2-Trichloroethane	0.2571084	0.2466801	0.2582992		0.2631914	0.2592418				
	0.2655684	0.2540845					0.2577	AVRG		2.4004

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
33)MA 1,3-Dichloropropane	0.4982528	0.5492318	0.4315555		0.5163662	0.5047590				
	0.5107842	0.4985737					0.5014	AVRG		7.0553
34)MA Tetrachloroethylene	0.3229909	0.3552741	0.2671006		0.3328728	0.3434785				
	0.3449998	0.3340465					0.3287	AVRG		8.8383
35)MA Dibromochloromethane	0.3907032	0.3245225	0.3096664		0.3677553	0.3765284				
	0.3894224	0.3912493					0.3643	AVRG		9.2304
36)MA 1,2-Dibromoethane	0.3266562	0.3120366	0.2969854		0.2846447	0.3124131				
	0.3290724	0.3273926					0.3127	AVRG		5.4032
37)MA Chlorobenzene	0.9970638	1.0828284	1.0429959		1.0640477	1.0533393				
	1.0459466	0.9791418					1.0379	AVRG		3.5513
38)MA 1,1,1,2-Tetrachloroethan	0.4121855	0.3274865	0.4053065		0.4170444	0.4272045				
	0.4284790	0.4049125					0.4032	AVRG		8.6073
39)MA Ethylbenzene	3788429	31532	46761		335935	827941		1/x		
-0.0119 | 1.5020 | 0.00	1878358	4771612						LINR		0.9979
40)MA m,p-Xylenes	3260480	22716	33398		289763	689509		1/x		
-0.0155 | 0.6423 | 0.00	1549522	4109538						LINR	#	0.9988
41)MA o-Xylene	3279200	18056	26738		278994	685877		1/x		
-0.0223 | 1.3097 | 0.00	1597979	4216505						LINR	#	0.9986
42)MA Styrene	2700565	14775	22935		193720	540450		1/x		
-0.0198 | 1.0574 | 0.00	1250484	3434775						LINR	#	0.9980
44)MA Bromoform	0.3672484	0.2767068	0.2802154		0.2920515	0.3169945				
	0.3377590	0.3641730					0.3193	AVRG		11.9549
45)MA Isopropylbenzene	3911882	22970	31530		290292	809587		1/x		
-0.0346 | 2.1075 | 0.00	1917009	4855380						LINR	#	0.9970
46)SA Bromofluorobenzene	0.6207996	0.6527835	0.6224296		0.6391939	0.6484564				
	0.6571301	0.6226448					0.6376	AVRG		2.4534
47)MA 1,1,2,2-Tetrachloroethan	0.6422484	0.7542134	0.7127082		0.6315620	0.6112691				
	0.6613459	0.6173826					0.6615	AVRG		8.0355
48)MA 1,2,3-Trichloropropane	0.1902675	0.2353881	0.1942591		0.1678790	0.1805313				
	0.1900965	0.1766863					0.1907	AVRG		11.3884

Response Factor Report VOA8
GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
49)MA Bromobenzene	0.7430393	0.7416305	0.5939834		0.6432761	0.6880281				
	0.7331261	0.7309561					0.6963	AVRG		8.3219
50)MA n-Propylbenzene	2.4778889	2.1214777	1.7327810		2.3157895	2.5290455				
	2.6763867	2.3040344					2.3082	AVRG		13.4603
51)MA 1,3,5-Trimethylbenzene -0.0284 | 1.9028 | 0.00	3541197 1705408	20461 4394679	32888		277682	730078		1/x LINR	 #	 0.9981
52)MA 2-Chlorotoluene	0.6894545	0.5730196	0.4715668		0.6271672	0.6456783				
	0.6772566	0.6697505					0.6220	AVRG		12.3669
53)MA 4-Chlorotoluene	1.6052041	1.2639089	1.0987108		1.4451513	1.5147205				
	1.6310573	1.5356185					1.4421	AVRG		13.4587
54)MA tert-Butylbenzene -0.0074 | 0.4590 | 0.00	851364 399004	6254 1099035	6908		57118	164735		1/x LINR	 #	 0.9955
55)MA 1,2,4-Trimethylbenzene -0.0280 | 1.9814 | 0.00	3634448 1799920	20183 4545891	32404		321091	786621		1/x LINR	 #	 0.9985
56)MA sec-Butylbenzene -0.0283 | 2.2967 | 0.00	4277490 2123323	27471 5185423	38744		363154	919140		1/x LINR	 #	 0.9971
57)MA 4-Isopropyltoluene -0.0309 | 2.0840 | 0.00	3885810 1911059	26375 4737393	26459		305644	824472		1/x LINR	 #	 0.9964
58)MA 1,3-Dichlorobenzene	1.3437070	1.3958830	1.0931242		1.2502550	1.3393022				
	1.3645189	1.3061850					1.2990	AVRG		7.8327
59)MA 1,4-Dichlorobenzene	1.4069764	1.6776231	1.4864777		1.4182636	1.3828528				
	1.4309952	1.3442871					1.4496	AVRG		7.5591
60)MA n-Butylbenzene -0.0172 | 1.8879 | 0.00	3535343 1711649	27991 4322096	35838		297838	742189		1/x LINR		 0.9979
61)MA 1,2-Dichlorobenzene	1.3427587	1.3237216	1.0934835		1.1931045	1.2565785				
	1.3679304	1.2893069					1.2667	AVRG		7.5803
62)MA 1,2-Dibromo-3-chloroprop -0.0050 | 0.1545 | 0.00	291078 126721	 367024	2925		19499	49196		1/x LINR		 0.9948
63)MA 1,2,4-Trichlorobenzene -0.0064 | 0.9101 | 0.00	1743207 785288	17437 2157888	20177		123182	322873		1/x LINR		 0.9952

Response Factor Report VOA8
GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	10	2	3	4	5	6	Avg	Curve	Exp	%RSD/r2
b m1 m2	7	8	9							
64)MA Hexachlorobutadiene	0.3826538	0.5023213	0.3564358		0.3639191	0.3444560				
	0.3611017	0.3601046					0.3816	AVRG		14.2674
65)MA Naphthalene	4602827	43217	40290		306569	835616		1/x		
-0.0269 2.4109 0.00	2200801	5607649						LINR	#	0.9929
66)MA 1,2,3-Trichlorobenzene	1721945	17625	19627		127627	321080				
-0.0270 0.9283 0.00	786193	2147756						LINR		0.9984
68)B Trichlorotrifluoroethane							0.0000	AVRG	#	-1.0000
69)B 1,4-Dioxane							0.0000	AVRG	#	-1.0000

(#) = Out of Range ($) = Individual RF Out of Range
AVRG = Average, LINR = Linear Regression, 1/x = the inverse of concentration, 1/x^2 = the inverse square of concentration

Continuing Calibration Summary

Client SDG: 40783

Instrument ID: VOA8.I **Injection Date:** 26-FEB-19 12:20

Data File: 022619V8\8L208.D **Init. Cal. Date(s)** 07-JAN-19 10:35 - 07-JAN-19 14:14

Lab Sample ID W8VM190226-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD **Method Update:** 09-JAN-19 13:14

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.1478	0.13883		.01		-6.06901	30		Averaged
S	Toluene-d8	1.1786	1.22695		.01		4.10232	30		Averaged
S	Bromofluorobenzene	0.6376	0.52232		.01		-18.0803	30		Averaged
	Dichlorodifluoromethane	0.2364	0.21043		.01		-10.98562	30		Averaged
	Chloromethane	20	21.95	20			9.75	30		Linear
	Vinyl chloride	0.4329	0.44281		.01		2.28921	30		Averaged
	Bromomethane	20	20.58	20			2.9	30		Linear
	Chloroethane	0.2793	0.27492		.01		-1.56821	30		Averaged
	Trichlorofluoromethane	0.8314	0.85965		.01		3.39788	30		Averaged
	1,1-Dichloroethylene	0.5483	0.54431		.01		-0.7277	30		Averaged
	Methylene chloride	20	24.73	20			23.65	30		Linear
	tert-Butyl methyl ether	0.8848	0.89394		.01		1.033	30		Averaged
	trans-1,2-Dichloroethylene	0.5013	0.53448		.01		6.61879	30		Averaged
	1,1-Dichloroethane	0.5272	0.59277		.1		12.43741	30		Averaged
	cis-1,2-Dichloroethylene	0.2973	0.33515		.01		12.73125	30		Averaged
	2,2-Dichloropropane	0.2212	0.25155		.01		13.72061	30		Averaged
	Bromochloromethane	0.1742	0.18994		.01		9.03559	30		Averaged
	Chloroform	0.4997	0.49303		.01		-1.3348	30		Averaged
	1,1,1-Trichloroethane	0.4068	0.40501		.01		-0.44002	30		Averaged
	1,1-Dichloropropene	0.2963	0.34192		.01		15.39656	30		Averaged
	Carbon tetrachloride	0.4265	0.43898		.01		2.92614	30		Averaged
	1,2-Dichloroethane	0.349	0.32214		.01		-7.69628	30		Averaged
	Benzene	0.9399	1.13315		.01		20.5607	30		Averaged
	Trichloroethylene	0.266	0.26724		.01		0.46617	30		Averaged
	1,2-Dichloropropane	0.2658	0.32002		.01		20.3988	30		Averaged
	Dibromomethane	0.1966	0.20197		.01		2.73143	30		Averaged
	Bromodichloromethane	0.3649	0.35357		.01		-3.10496	30		Averaged
	cis-1,3-Dichloropropylene	20	18	20			-10	30		Linear
	Toluene	1.321	1.64367		.01		24.42619	30		Averaged
	trans-1,3-Dichloropropylene	20	20.6	20			3	30		Linear
	1,1,2-Trichloroethane	0.2577	0.3006		.01		16.64726	30		Averaged
	1,3-Dichloropropane	0.5014	0.61367		.01		22.3913	30		Averaged
	Tetrachloroethylene	0.3287	0.4109		.01		25.00761	30		Averaged
	Dibromochloromethane	0.3643	0.40916		.01		12.31403	30		Averaged
	1,2-Dibromoethane	0.3127	0.34786		.01		11.244	30		Averaged
	Chlorobenzene	1.0379	1.17965		.3		13.65739	30		Averaged
	1,1,1,2-Tetrachloroethane	0.4032	0.47677		.01		18.24653	30		Averaged

Continuing Calibration Summary

Instrument ID: VOA8.I **Injection Date:** 26-FEB-19 12:20

Data File: 022619V8\8L208.D **Init. Cal. Date(s)** 07-JAN-19 10:35 07-JAN-19 14:14

Lab Sample ID W8VM190226-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD

Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
Ethylbenzene	20	23.81	20			19.05	30		Linear
m,p-Xylenes	40	50.32	40			25.8	30		Linear
o-Xylene	20	23.57	20			17.85	30		Linear
Styrene	20	24.91	20			24.55	30		Linear
Bromoform	0.3193	0.34131		.1		6.8932	30		Averaged
Isopropylbenzene	20	20.57	20			2.85	30		Linear
1,1,2,2-Tetrachloroethane	0.6615	0.65684		.3		-0.70446	30		Averaged
1,2,3-Trichloropropane	0.1907	0.17455		.01		-8.4688	30		Averaged
Bromobenzene	0.6963	0.79642		.01		14.37886	30		Averaged
n-Propylbenzene	2.3082	2.78885		.01		20.82359	30		Averaged
1,3,5-Trimethylbenzene	20	21.18	20			5.9	30		Linear
2-Chlorotoluene	0.622	0.75897		.01		22.0209	30		Averaged
4-Chlorotoluene	1.4421	1.56033		.01		8.19846	30		Averaged
tert-Butylbenzene	20	20.14	20			0.7	30		Linear
1,2,4-Trimethylbenzene	20	20.78	20			3.9	30		Linear
sec-Butylbenzene	20	21.65	20			8.25	30		Linear
4-Isopropyltoluene	20	21.25	20			6.25	30		Linear
1,3-Dichlorobenzene	1.299	1.43202		.01		10.24018	30		Averaged
1,4-Dichlorobenzene	1.4496	1.50387		.01		3.74379	30		Averaged
n-Butylbenzene	20	21.32	20			6.6	30		Linear
1,2-Dichlorobenzene	1.2667	1.35636		.01		7.07823	30		Averaged
1,2-Dibromo-3-chloropropane	20	19.55	20			-2.25	30		Linear
1,2,4-Trichlorobenzene	20	18.22	20			-8.9	30		Linear
Hexachlorobutadiene	0.3816	0.36262		.01		-4.97379	30		Averaged
Naphthalene	20	18.16	20			-9.2	30		Linear
1,2,3-Trichlorobenzene	20	18.58	20			-7.1	30		Linear

Continuing Calibration Summary

Client SDG: 40783

Instrument ID: VOA8.I **Injection Date:** 27-FEB-19 12:16

Data File: 022719V8\8L306.D **Init. Cal. Date(s)** 07-JAN-19 10:35 - 07-JAN-19 14:14

Lab Sample ID W8VM190227-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD **Method Update:** 09-JAN-19 13:14

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.1478	0.136		.01		-7.98376	30		Averaged
S	Toluene-d8	1.1786	1.20507		.01		2.24588	30		Averaged
S	Bromofluorobenzene	0.6376	0.54694		.01		-14.21895	30		Averaged
	Dichlorodifluoromethane	0.2364	0.18628		.01		-21.20135	30		Averaged
	Chloromethane	20	21.2	20			6	30		Linear
	Vinyl chloride	0.4329	0.44944		.01		3.82074	30		Averaged
	Bromomethane	20	21.34	20			6.7	30		Linear
	Chloroethane	0.2793	0.27527		.01		-1.44289	30		Averaged
	Trichlorofluoromethane	0.8314	0.83529		.01		0.46789	30		Averaged
	1,1-Dichloroethylene	0.5483	0.57982		.01		5.74868	30		Averaged
	Methylene chloride	20	24.71	20			23.55	30		Linear
	tert-Butyl methyl ether	0.8848	0.95358		.01		7.77351	30		Averaged
	trans-1,2-Dichloroethylene	0.5013	0.55233		.01		10.17953	30		Averaged
	1,1-Dichloroethane	0.5272	0.56017		.1		6.25379	30		Averaged
	cis-1,2-Dichloroethylene	0.2973	0.34159		.01		14.89741	30		Averaged
	2,2-Dichloropropane	0.2212	0.2484		.01		12.29656	30		Averaged
	Bromochloromethane	0.1742	0.18481		.01		6.0907	30		Averaged
	Chloroform	0.4997	0.51392		.01		2.84571	30		Averaged
	1,1,1-Trichloroethane	0.4068	0.40945		.01		0.65143	30		Averaged
	1,1-Dichloropropene	0.2963	0.34042		.01		14.89031	30		Averaged
	Carbon tetrachloride	0.4265	0.4241		.01		-0.56272	30		Averaged
	1,2-Dichloroethane	0.349	0.3195		.01		-8.45272	30		Averaged
	Benzene	0.9399	1.12681		.01		19.88616	30		Averaged
	Trichloroethylene	0.266	0.28387		.01		6.71805	30		Averaged
	1,2-Dichloropropane	0.2658	0.31534		.01		18.63807	30		Averaged
	Dibromomethane	0.1966	0.22041		.01		12.11089	30		Averaged
	Bromodichloromethane	0.3649	0.37701		.01		3.31872	30		Averaged
	cis-1,3-Dichloropropylene	20	18.62	20			-6.9	30		Linear
	Toluene	1.321	1.57567		.01		19.27858	30		Averaged
	trans-1,3-Dichloropropylene	20	20.79	20			3.95	30		Linear
	1,1,2-Trichloroethane	0.2577	0.29109		.01		12.95693	30		Averaged
	1,3-Dichloropropane	0.5014	0.62047		.01		23.74751	30		Averaged
	Tetrachloroethylene	0.3287	0.40915		.01		24.47521	30		Averaged
	Dibromochloromethane	0.3643	0.40514		.01		11.21054	30		Averaged
	1,2-Dibromoethane	0.3127	0.32947		.01		5.36297	30		Averaged
	Chlorobenzene	1.0379	1.12858		.3		8.73687	30		Averaged
	1,1,1,2-Tetrachloroethane	0.4032	0.45939		.01		13.93601	30		Averaged

Continuing Calibration Summary

Instrument ID: VOA8.I **Injection Date:** 27-FEB-19 12:16

Data File: 022719V8\8L306.D **Init. Cal. Date(s)** 07-JAN-19 10:35 07-JAN-19 14:14

Lab Sample ID W8VM190227-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD

Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
Ethylbenzene	20	23.16	20			15.8	30		Linear
m,p-Xylenes	40	47.64	40			19.1	30		Linear
o-Xylene	20	22.51	20			12.55	30		Linear
Styrene	20	23.26	20			16.3	30		Linear
Bromoform	0.3193	0.36258		.1		13.55465	30		Averaged
Isopropylbenzene	20	20.35	20			1.75	30		Linear
1,1,2,2-Tetrachloroethane	0.6615	0.66673		.3		0.79063	30		Averaged
1,2,3-Trichloropropane	0.1907	0.16634		.01		-12.77399	30		Averaged
Bromobenzene	0.6963	0.76985		.01		10.56298	30		Averaged
n-Propylbenzene	2.3082	2.67251		.01		15.78329	30		Averaged
1,3,5-Trimethylbenzene	20	19.83	20			-0.85	30		Linear
2-Chlorotoluene	0.622	0.71667		.01		15.22026	30		Averaged
4-Chlorotoluene	1.4421	1.45771		.01		1.08245	30		Averaged
tert-Butylbenzene	20	18.34	20			-8.3	30		Linear
1,2,4-Trimethylbenzene	20	20.32	20			1.6	30		Linear
sec-Butylbenzene	20	20.23	20			1.15	30		Linear
4-Isopropyltoluene	20	20.32	20			1.6	30		Linear
1,3-Dichlorobenzene	1.299	1.40047		.01		7.81139	30		Averaged
1,4-Dichlorobenzene	1.4496	1.4716		.01		1.51766	30		Averaged
n-Butylbenzene	20	19.95	20			-0.25	30		Linear
1,2-Dichlorobenzene	1.2667	1.30448		.01		2.98255	30		Averaged
1,2-Dibromo-3-chloropropane	20	18.29	20			-8.55	30		Linear
1,2,4-Trichlorobenzene	20	18.12	20			-9.4	30		Linear
Hexachlorobutadiene	0.3816	0.3388		.01		-11.21593	30		Averaged
Naphthalene	20	17.84	20			-10.8	30		Linear
1,2,3-Trichlorobenzene	20	17.56	20			-12.2	30		Linear

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**			**Matrix:**	**WATER**
Lab Sample ID:	**1204227215**				
Client Sample:	**QC for batch 1852561**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1852561**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/26/2019 13:23**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/26/2019 13:23**				
Data File:	**022619V8\8L210B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**			**Matrix:**	**WATER**
Lab Sample ID:	**1204227215**				
Client Sample:	**QC for batch 1852561**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1852561**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/26/2019 13:23**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/26/2019 13:23**				
Data File:	**022619V8\8L210B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**			**Matrix:**	**WATER**
Lab Sample ID:	**1204227216**				
Client Sample:	**QC for batch 1852561**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1852561**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/26/2019 12:20**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/26/2019 12:20**				
Data File:	**022619V8\8L208B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		23.7	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		19.9	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		19.9	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		23.3	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		22.5	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		19.9	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		23.1	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		18.6	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		18.3	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		18.2	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		20.8	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		22.3	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		21.4	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		18.5	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		24.1	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		21.2	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		22.1	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		24.5	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		20.8	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		22.7	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		24.4	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		21.6	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		21.3	ug/L	0.167	0.500	0.500
71-43-2	Benzene		24.1	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		22.9	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		21.8	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		19.4	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		21.4	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		20.6	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		20.6	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		22.7	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		19.7	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		19.7	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		22.0	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		22.5	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		20.6	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		17.8	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		23.8	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**			**Matrix:**	**WATER**
Lab Sample ID:	**1204227216**				
Client Sample:	**QC for batch 1852561**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1852561**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/26/2019 12:20**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/26/2019 12:20**				
Data File:	**022619V8\8L208B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		19.0	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		20.6	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		24.7	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		18.2	ug/L	0.167	0.500	0.500
100-42-5	Styrene		24.9	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		25.0	ug/L	0.167	0.500	0.500
108-88-3	Toluene		24.9	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		20.1	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		20.7	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		20.5	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		22.6	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		18.0	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		50.3	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		21.3	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		24.2	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		23.6	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		21.7	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		20.2	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		20.1	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		21.3	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		20.6	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		19.6	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**	**Date Collected:**	**02/20/2019 10:32**	**Matrix:**	**W**
Lab Sample ID:	**1204227217**	**Date Received:**	**02/21/2019 09:00**		
Client Sample:	**QC for batch 1852561**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40786-002PS**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/26/2019 20:09**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/26/2019 20:09**				
Data File:	**022619V8\8L223.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		22.2	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		19.7	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		20.7	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		23.6	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		22.8	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		21.9	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		23.0	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		19.3	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		18.5	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		19.2	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		20.0	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		21.6	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		21.5	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		18.3	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		23.9	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		20.1	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		21.6	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		24.0	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		20.8	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		22.5	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		23.4	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		20.7	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		21.1	ug/L	0.167	0.500	0.500
71-43-2	Benzene		24.0	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		22.4	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		21.7	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		20.7	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		22.6	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		21.9	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		21.1	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		21.2	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		20.7	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		20.3	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		23.0	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		21.6	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		22.5	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		19.5	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		23.2	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**	**Date Collected:**	**02/20/2019 10:32**	**Matrix:**	**W**
Lab Sample ID:	**1204227217**	**Date Received:**	**02/21/2019 09:00**		
Client Sample:	**QC for batch 1852561**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40786-002PS**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/26/2019 20:09**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/26/2019 20:09**				
Data File:	**022619V8\8L223.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		17.9	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		20.7	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		23.8	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		19.6	ug/L	0.167	0.500	0.500
100-42-5	Styrene		22.8	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		24.6	ug/L	0.167	0.500	0.500
108-88-3	Toluene		24.0	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		22.6	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		21.7	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		23.9	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		23.5	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		19.0	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		47.9	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		20.4	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		23.3	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		22.9	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		21.3	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		22.5	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		19.8	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		22.2	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		20.2	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		19.5	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**	**Date Collected:**	**02/20/2019 10:32**	**Matrix:**	**W**
Lab Sample ID:	**1204227218**	**Date Received:**	**02/21/2019 09:00**		
Client Sample:	**QC for batch 1852561**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40786-002PSD**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/26/2019 20:41**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/26/2019 20:41**				
Data File:	**022619V8\8L224.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		21.9	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		20.1	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		21.2	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		22.6	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		22.1	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		21.0	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		23.5	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		19.6	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		19.3	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		20.5	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		21.0	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		21.1	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		21.4	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		18.8	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		23.9	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		20.8	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		21.4	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		23.0	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		20.9	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		20.5	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		23.0	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		21.7	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		20.8	ug/L	0.167	0.500	0.500
71-43-2	Benzene		23.5	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		22.6	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		21.6	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		21.0	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		22.1	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		22.0	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		21.5	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		21.5	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		21.6	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		20.0	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		23.3	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		21.3	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		21.8	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		19.2	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		22.9	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**	**Date Collected:**	**02/20/2019 10:32**	**Matrix:**	**W**
Lab Sample ID:	**1204227218**	**Date Received:**	**02/21/2019 09:00**		
Client Sample:	**QC for batch 1852561**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40786-002PSD**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/26/2019 20:41**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/26/2019 20:41**				
Data File:	**022619V8\8L224.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		19.1	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		20.9	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		24.3	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		19.8	ug/L	0.167	0.500	0.500
100-42-5	Styrene		23.2	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		23.6	ug/L	0.167	0.500	0.500
108-88-3	Toluene		23.4	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		23.2	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		21.6	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		24.6	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		22.9	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		19.5	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		47.8	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		20.4	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		23.7	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		22.7	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		22.0	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		22.3	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		20.1	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		22.4	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		20.0	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		19.3	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**			**Matrix:**	**WATER**
Lab Sample ID:	**1204228563**				
Client Sample:	**QC for batch 1852561**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1852561**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/27/2019 13:18**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/27/2019 13:18**				
Data File:	**022719V8\8L308B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**			**Matrix:**	**WATER**
Lab Sample ID:	**1204228563**				
Client Sample:	**QC for batch 1852561**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1852561**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/27/2019 13:18**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/27/2019 13:18**				
Data File:	**022719V8\8L308B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**			**Matrix:**	**WATER**
Lab Sample ID:	**1204228564**				
Client Sample:	**QC for batch 1852561**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1852561**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/27/2019 12:16**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/27/2019 12:16**				
Data File:	**022719V8\8L306B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		22.8	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		20.1	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		20.2	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		22.6	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		21.3	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		21.2	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		23.0	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		17.6	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		17.4	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		18.1	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		20.3	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		21.1	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		20.6	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		18.3	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		23.7	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		19.8	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		21.6	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		24.8	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		20.3	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		22.5	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		23.0	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		20.2	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		20.3	ug/L	0.167	0.500	0.500
71-43-2	Benzene		24.0	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		22.1	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		21.2	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		20.7	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		22.7	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		21.3	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		19.9	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		21.8	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		19.7	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		20.6	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		21.2	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		22.2	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		22.4	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		15.8	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		23.2	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40783**			**Matrix:**	**WATER**
Lab Sample ID:	**1204228564**				
Client Sample:	**QC for batch 1852561**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1852561**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1852561**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/27/2019 12:16**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/27/2019 12:16**				
Data File:	**022719V8\8L306B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		17.8	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		20.4	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		24.7	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		17.8	ug/L	0.167	0.500	0.500
100-42-5	Styrene		23.3	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		24.9	ug/L	0.167	0.500	0.500
108-88-3	Toluene		23.9	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		21.3	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		20.1	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		20.8	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		23.0	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		18.6	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		47.6	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		20.0	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		23.2	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		22.5	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		20.2	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		21.6	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		18.3	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		22.0	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		20.8	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		18.3	ug/L	0.330	1.00	1.00

Miscellaneous

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

01/08/2019
01/10/2019

Date: 1/7/2019 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42

Daily Instrument Readings:
Multiplier Voltage: 1575

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 1/7/2019

Cl test lot # 64312

Sequence Number: 010719V8

	Daily Standard Solution ID#	Volume Added for Purge (ul) Blk/ Smpl	CCV	MS/ LCS	BFB
IS/SS	IVM170915-03	1	1	1	
ICV[A]	W8VM190107-08			20uL ea.	
BFB	IVM181212-01				1

Purge Amount	
5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
7 Jan 2019 09:32	8E103.D	IVM181212-01	GEL	BFB	5ML	1	PH<2	1	W	PXY1	N/A	O	
7 Jan 2019 10:04	8E104.D	W8VM190107-01	VSTD0005	ICAL	5ML	1	PH<2	2	W	PXY1	N/A	X	MIX[A] UVM181127-04/UVM181228-04B
7 Jan 2019 10:35	8E105.D	W8VM190107-02	VSTD001	ICAL	5ML	1	PH<2	3	W	PXY1	N/A	O	MIX[A] UVM181127-05/UVM181228-05B
7 Jan 2019 11:07	8E106.D	W8VM190107-03	VSTD005	ICAL	5ML	1	PH<2	4	W	PXY1	N/A	O	MIX[A] UVM181127-07/UVM181228-07B
7 Jan 2019 11:38	8E107.D	W8VM190107-04	VSTD010	ICAL	5ML	1	PH<2	5	W	PXY1	N/A	O	MIX[A] UVM181127-08/UVM181228-08B
7 Jan 2019 12:09	8E108.D	W8VM190107-05	VSTD020	ICAL	5ML	1	PH<2	6	W	PXY1	N/A	O	MIX[A] UVM181127-09/UVM181228-09B
7 Jan 2019 12:40	8E109.D	W8VM190107-06	VSTD040	ICAL	5ML	1	PH<2	7	W	PXY1	N/A	O	MIX[A] UVM181127-09/UVM181228-09B
7 Jan 2019 13:11	8E110.D	W8VM190107-07	VSTD050	ICAL	5ML	1	PH<2	8	W	PXY1	N/A	O	MIX[A] UVM181127-09/UVM181228-09B
7 Jan 2019 13:42	8E111.D	BLANK	GEL	BLANK	5ML	1	PH<2	9	W	PXY1	N/A	X	RINSE
7 Jan 2019 14:14	8E112.D	W8VM190107-01	VSTD0005	ICAL	5ML	1	PH<2	10	W	PXY1	N/A	O	MIX[A] UVM181127-04/UVM181228-04B
7 Jan 2019 14:45	8E113.D	W8VM190107-08	ICV	ICV	5ML	1	PH<2	11	W	PXY1	N/A	O	MIX[A] UVM181023-10B/UVM181228-10B

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

02/27/2019

02/27/2019

Date: 2/26/2019 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42

Daily Instrument Readings:
Multiplier Voltage: 1706

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 1/7/2019

Cl test lot # 64312

Sequence Number: 022619V8

Daily Standard	Solution ID#	Volume Added for Purge (ul) Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W8VM190226-01			20uL ea.	
IS/SS	IVM170915-03	1	1	1	
LCS/MS	W8VM190226-01			20uL ea.	
BFB	IVM190208-01				1

Purge Amount	
5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
2/26/2019 10:15	8L203.D	IVM190208-01	GEL	BFB	5ML	1	N/A	1	W	PXY1	N/A	O	
2/26/2019 12:20	8L208.D	W8VM190226-01	GEL	CCV	5ML	1	PH<2	5	W	PXY1	N/A	O	MIX[A]
2/26/2019 12:51	8L209.D	120422	GEL	BLANK	5ML	1	PH<2	6	W	PXY1	N/A	X	RINSE
2/26/2019 13:23	8L210.D	120422	GEL	BLANK	5ML	1	PH<2	7	W	PXY1	N/A	O	
2/26/2019 13:54	8L211.D	471461005	BRKL	1851132	5ML	2	PH<2	8	W	PXY1	N	O	See 8K515 for first instance
2/26/2019 14:25	8L212.D	471489008	BRKL	1851132	5ML	1	PH<2	9	W	PXY1	N	O	
2/26/2019 14:56	8L213.D	471524003	BRKL	1852240	5ML	1	PH<2	10	W	PXY1	N	O	
2/26/2019 15:27	8L214.D	471524004	BRKL	1852240	5ML	1	PH<2	11	W	PXY1	N	O	
2/26/2019 15:58	8L215.D	471524005	BRKL	1852240	5ML	1	PH<2	12	W	PXY1	N	O	
2/26/2019 16:29	8L216.D	471873001	BRKL	1852240	5ML	1	PH<2	13	W	PXY1	N	O	
2/26/2019 17:01	8L217.D	471873002	BRKL	1852240	5ML	1	PH<2	14	W	PXY1	N	O	
2/26/2019 17:32	8L218.D	471873003	BRKL	1852240	5ML	1	PH<2	15	W	PXY1	N	O	
2/26/2019 18:04	8L219.D	471873004	BRKL	1852240	5ML	1	PH<2	16	W	PXY1	N	O	
2/26/2019 18:35	8L220.D	471880001	BRKL	1852561	5ML	1	PH<2	17	W	PXY1	N	O	
2/26/2019 19:06	8L221.D	1204226457	BRKL	1852240	5ML	1	PH<2	18	W	PXY1	N	O	MIX[A] 471464003PS
2/26/2019 19:38	8L222.D	1204226458	BRKL	1852240	5ML	1	PH<2	19	W	PXY1	N	O	MIX[A] 471464003PSD
2/26/2019 20:09	8L223.D	1204227217	BRKL	1852561	5ML	1	PH<2	20	W	PXY1	N	O	MIX[A] 471880002PS
2/26/2019 20:41	8L224.D	1204227218	BRKL	1852561	5ML	1	PH<2	21	W	PXY1	N	O	MIX[A] 471880002PSD
2/26/2019 21:12	8L225.D	1204227229	BRKL	1852561	5ML	1	PH<2	22	W	PXY1	N	O	MIX[A] 471890001PS
2/26/2019 21:43	8L226.D	1204227230	BRKL	1852561	5ML	1	PH<2	23	W	PXY1	N	O	MIX[A] 471889003PSD

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

02/28/2019
03/05/2019

Date: 2/27/2019 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42 Daily Instrument Readings:

Multiplier Voltage: 1906

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 1/7/2019

Cl test lot # 64312

Sequence Number: 022719V8

Daily Standard	Volume Added for Purge (ul)			
Solution ID#		Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W8VM190227-01			20uL ea.	
IS/SS	IVM170915-03	1	1	1	
LCS/MS	W8VM190227-01			20uL ea.	
BFB	IVM190208-01				1

Purge Amount	
5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
2/27/2019 11:45	8L304.D	IVM190208-01	GEL	BFB	5ML	1	N/A	1	W	PXY1	N/A	O	
2/27/2019 12:16	8L306.D	W8VM190227-01	GEL	CCV	5ML	1	PH<2	2	W	PXY1	N/A	O	MIX[A]
2/27/2019 12:47	8L307.D	120422	GEL	BLANK	5ML	1	PH<2	3	W	PXY1	N/A	X	RINSE
2/27/2019 13:18	8L308.D	120422	GEL	BLANK	5ML	1	PH<2	4	W	PXY1	N/A	O	
2/27/2019 13:50	8L309.D	471880002	BRKL	1852561	5ML	1	PH<2	5	W	PXY1	N	O	
2/27/2019 14:21	8L310.D	471880003	BRKL	1852561	5ML	1	PH<2	6	W	PXY1	N	O	
2/27/2019 14:52	8L311.D	471880004	BRKL	1852561	5ML	1	PH<2	7	W	PXY1	N	O	
2/27/2019 15:23	8L312.D	471880005	BRKL	1852561	5ML	1	PH<2	8	W	PXY1	N	O	
2/27/2019 15:54	8L313.D	471880006	BRKL	1852561	5ML	1	PH<2	9	W	PXY1	N	O	
2/27/2019 16:25	8L314.D	471880007	BRKL	1852561	5ML	1	PH<2	10	W	PXY1	N	O	
2/27/2019 16:57	8L315.D	471880008	BRKL	1852561	5ML	1	PH<2	11	W	PXY1	N	O	
2/27/2019 17:27	8L316.D	471887001	BRKL	1852561	5ML	1	PH<2	12	W	PXY1	N	O	
2/27/2019 17:58	8L317.D	471887002	BRKL	1852561	5ML	1	PH<2	13	W	PXY1	N	O	
2/27/2019 18:30	8L318.D	471887003	BRKL	1852561	5ML	1	PH<2	14	W	PXY1	N	O	
2/27/2019 19:00	8L319.D	471889001	BRKL	1852561	5ML	1	PH<2	15	W	PXY1	N	O	
2/27/2019 19:31	8L320.D	471889002	BRKL	1852561	5ML	1	PH<2	16	W	PXY1	N	O	
2/27/2019 20:02	8L321.D	471889003	BRKL	1852561	5ML	1	PH<2	17	W	PXY1	N	O	
2/27/2019 20:33	8L322.D	471890001	BRKL	1852561	5ML	1	PH<2	18	W	PXY1	N	O	
2/27/2019 21:04	8L323.D	471890002	BRKL	1852561	5ML	1	PH<2	19	W	PXY1	N	O	
2/27/2019 21:35	8L324.D	471890003	BRKL	1852561	5ML	1	PH<2	20	W	PXY1	N	O	
2/27/2019 22:07	8L325.D	471890004	BRKL	1852561	5ML	1	PH<2	21	W	PXY1	N	O	
2/27/2019 22:38	8L326.D	471890005	BRKL	1852561	5ML	1	PH<2	22	W	PXY1	N	O	
2/27/2019 23:09	8L327.D	471890006	BRKL	1852561	5ML	1	PH<2	23	W	PXY1	N	O	
2/27/2019 23:40	8L328.D	471890007	BRKL	1852561	5ML	1	PH<2	24	W	PXY1	N	O	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-33280-1
TestAmerica Sample Delivery Group: 40848
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Contracts Section
Building 134B
Upton, New York 11973

Attn: Mr. Bob Howe

Authorized for release by:
3/25/2019 5:19:32 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS
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Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-33280-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-33280-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 3/14/2019 10:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.2º C and 1.3º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 40848-001 (160-33280-1) and 40848-002 (160-33280-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 03/18/2019.

Job ID: 160-33280-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 40848

Requires EDD ✓

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J Mill	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD USC TB-1 From CoC # 40850

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals
001	E	G	095-151	0	3/12/19	1105	W	RTW-1 Influent	40 ML	SC	3	HCL					X				
002	E	G	095-152	0	↓	1110	W	RTW-1 Effluent	40 ML	SC	3	HCL					X				
003	E	G	TB-1	0			W	Trip Blank	40 ML	SG	3	HCL					X				

Analysis Requested

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Mill 3/13/19	Print	Print
Signature 1500	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Nicholas Press 3-14-19	Print	Print
Signature Nicholas Press 1010	Signature	Signature

Contractor Lab Sample Disposal:
- ❑ Return To Client
- ☒ Disposal by Lab
- ❑ Archive For ____ Months

Data Package: ❑ Full ☒ Summary

Turn-Around Time Required:
- ❑ Rush (1 Day)
- ☒ 14 Days
- ❑ 30 Days
- ❑ 7 Days
- ❑ Other ( )

160-33280 Chain of Custody

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-33280-1
SDG Number: 40848

Login Number: 33280
List Number: 1
Creator: Press, Nicholas B

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

TestAmerica Job ID: 160-33280-1
SDG: 40848

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

TestAmerica Job ID: 160-33280-1
SDG: 40848

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

TestAmerica Job ID: 160-33280-1
SDG: 40848

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-33280-1	40848-001	Water	03/12/19 11:05	03/14/19 10:10
160-33280-2	40848-002	Water	03/12/19 11:10	03/14/19 10:10

Client Sample ID: 40848-001
Date Collected: 03/12/19 11:05
Date Received: 03/14/19 10:10

Lab Sample ID: 160-33280-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/18/19 17:49	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/18/19 17:49	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			03/18/19 17:49	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			03/18/19 17:49	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			03/18/19 17:49	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			03/18/19 17:49	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			03/18/19 17:49	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			03/18/19 17:49	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			03/18/19 17:49	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			03/18/19 17:49	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			03/18/19 17:49	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			03/18/19 17:49	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			03/18/19 17:49	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			03/18/19 17:49	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			03/18/19 17:49	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			03/18/19 17:49	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			03/18/19 17:49	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			03/18/19 17:49	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			03/18/19 17:49	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			03/18/19 17:49	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			03/18/19 17:49	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			03/18/19 17:49	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			03/18/19 17:49	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			03/18/19 17:49	1
Benzene	0.50	U	0.50	0.10	ug/L			03/18/19 17:49	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			03/18/19 17:49	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			03/18/19 17:49	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			03/18/19 17:49	1
Bromoform	0.50	U	0.50	0.25	ug/L			03/18/19 17:49	1
Bromomethane	0.50	U	0.50	0.38	ug/L			03/18/19 17:49	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			03/18/19 17:49	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			03/18/19 17:49	1
Chloroethane	0.50	U	0.50	0.18	ug/L			03/18/19 17:49	1
Chloroform	**0.29**	**J**	0.50	0.24	ug/L			03/18/19 17:49	1
Chloromethane	0.50	U	0.50	0.20	ug/L			03/18/19 17:49	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/18/19 17:49	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/18/19 17:49	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			03/18/19 17:49	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			03/18/19 17:49	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			03/18/19 17:49	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			03/18/19 17:49	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			03/18/19 17:49	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			03/18/19 17:49	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			03/18/19 17:49	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/18/19 17:49	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			03/18/19 17:49	1
Naphthalene	0.50	U	0.50	0.57	ug/L			03/18/19 17:49	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			03/18/19 17:49	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			03/18/19 17:49	1

Client Sample ID: 40848-001

Date Collected: 03/12/19 11:05
Date Received: 03/14/19 10:10

Lab Sample ID: 160-33280-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			03/18/19 17:49	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			03/18/19 17:49	1
Styrene	0.50	U	0.50	0.21	ug/L			03/18/19 17:49	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			03/18/19 17:49	1
Tetrachloroethene	**2.0**		0.50	0.19	ug/L			03/18/19 17:49	1
Toluene	0.50	U	0.50	0.19	ug/L			03/18/19 17:49	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/18/19 17:49	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			03/18/19 17:49	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			03/18/19 17:49	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			03/18/19 17:49	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			03/18/19 17:49	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			03/18/19 17:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*		*03/18/19 17:49*	*1*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*03/18/19 17:49*	*1*

Client Sample ID: 40848-002

Date Collected: 03/12/19 11:10
Date Received: 03/14/19 10:10

Lab Sample ID: 160-33280-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/18/19 18:16	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/18/19 18:16	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			03/18/19 18:16	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			03/18/19 18:16	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			03/18/19 18:16	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			03/18/19 18:16	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			03/18/19 18:16	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			03/18/19 18:16	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			03/18/19 18:16	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			03/18/19 18:16	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			03/18/19 18:16	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			03/18/19 18:16	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			03/18/19 18:16	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			03/18/19 18:16	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			03/18/19 18:16	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			03/18/19 18:16	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			03/18/19 18:16	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			03/18/19 18:16	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			03/18/19 18:16	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			03/18/19 18:16	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			03/18/19 18:16	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			03/18/19 18:16	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			03/18/19 18:16	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			03/18/19 18:16	1
Benzene	0.50	U	0.50	0.10	ug/L			03/18/19 18:16	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			03/18/19 18:16	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			03/18/19 18:16	1

Client Sample ID: 40848-002
Date Collected: 03/12/19 11:10
Date Received: 03/14/19 10:10

Lab Sample ID: 160-33280-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			03/18/19 18:16	1
Bromoform	0.50	U	0.50	0.25	ug/L			03/18/19 18:16	1
Bromomethane	0.50	U	0.50	0.38	ug/L			03/18/19 18:16	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			03/18/19 18:16	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			03/18/19 18:16	1
Chloroethane	0.50	U	0.50	0.18	ug/L			03/18/19 18:16	1
Chloroform	0.50	U	0.50	0.24	ug/L			03/18/19 18:16	1
Chloromethane	0.50	U	0.50	0.20	ug/L			03/18/19 18:16	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/18/19 18:16	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/18/19 18:16	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			03/18/19 18:16	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			03/18/19 18:16	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			03/18/19 18:16	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			03/18/19 18:16	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			03/18/19 18:16	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			03/18/19 18:16	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			03/18/19 18:16	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/18/19 18:16	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			03/18/19 18:16	1
Naphthalene	0.50	U	0.50	0.57	ug/L			03/18/19 18:16	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			03/18/19 18:16	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			03/18/19 18:16	1
o-Xylene	0.50	U	0.50	0.29	ug/L			03/18/19 18:16	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			03/18/19 18:16	1
Styrene	0.50	U	0.50	0.21	ug/L			03/18/19 18:16	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			03/18/19 18:16	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			03/18/19 18:16	1
Toluene	0.50	U	0.50	0.19	ug/L			03/18/19 18:16	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/18/19 18:16	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			03/18/19 18:16	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			03/18/19 18:16	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			03/18/19 18:16	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			03/18/19 18:16	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			03/18/19 18:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*		*03/18/19 18:16*	*1*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*		*03/18/19 18:16*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-419783/6
Matrix: Water
Analysis Batch: 419783

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/18/19 12:43	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/18/19 12:43	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			03/18/19 12:43	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			03/18/19 12:43	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			03/18/19 12:43	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			03/18/19 12:43	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			03/18/19 12:43	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			03/18/19 12:43	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			03/18/19 12:43	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			03/18/19 12:43	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			03/18/19 12:43	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			03/18/19 12:43	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			03/18/19 12:43	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			03/18/19 12:43	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			03/18/19 12:43	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			03/18/19 12:43	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			03/18/19 12:43	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			03/18/19 12:43	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			03/18/19 12:43	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			03/18/19 12:43	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			03/18/19 12:43	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			03/18/19 12:43	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			03/18/19 12:43	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			03/18/19 12:43	1
Benzene	0.50	U	0.50	0.10	ug/L			03/18/19 12:43	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			03/18/19 12:43	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			03/18/19 12:43	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			03/18/19 12:43	1
Bromoform	0.50	U	0.50	0.25	ug/L			03/18/19 12:43	1
Bromomethane	0.50	U	0.50	0.38	ug/L			03/18/19 12:43	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			03/18/19 12:43	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			03/18/19 12:43	1
Chloroethane	0.50	U	0.50	0.18	ug/L			03/18/19 12:43	1
Chloroform	0.50	U	0.50	0.24	ug/L			03/18/19 12:43	1
Chloromethane	0.50	U	0.50	0.20	ug/L			03/18/19 12:43	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/18/19 12:43	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/18/19 12:43	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			03/18/19 12:43	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			03/18/19 12:43	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			03/18/19 12:43	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			03/18/19 12:43	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			03/18/19 12:43	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			03/18/19 12:43	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			03/18/19 12:43	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/18/19 12:43	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			03/18/19 12:43	1
Naphthalene	0.50	U	0.50	0.57	ug/L			03/18/19 12:43	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			03/18/19 12:43	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-419783/6
Matrix: Water
Analysis Batch: 419783

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			03/18/19 12:43	1
o-Xylene	0.50	U	0.50	0.29	ug/L			03/18/19 12:43	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			03/18/19 12:43	1
Styrene	0.50	U	0.50	0.21	ug/L			03/18/19 12:43	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			03/18/19 12:43	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			03/18/19 12:43	1
Toluene	0.50	U	0.50	0.19	ug/L			03/18/19 12:43	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/18/19 12:43	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			03/18/19 12:43	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			03/18/19 12:43	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			03/18/19 12:43	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			03/18/19 12:43	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			03/18/19 12:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*		*03/18/19 12:43*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*03/18/19 12:43*	*1*

Lab Sample ID: LCS 160-419783/4
Matrix: Water
Analysis Batch: 419783

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.2		ug/L		102	70 - 130
1,1,1-Trichloroethane	10.0	9.85		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1-Dichloroethane	10.0	9.72		ug/L		97	70 - 130
1,1-Dichloroethene	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloropropene	10.0	9.68		ug/L		97	70 - 130
1,2,3-Trichlorobenzene	10.0	10.0		ug/L		100	70 - 130
1,2,3-Trichloropropane	10.0	8.90		ug/L		89	70 - 130
1,2,4-Trichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,2,4-Trimethylbenzene	10.0	10.6		ug/L		106	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	8.39		ug/L		84	70 - 130
1,2-Dibromoethane	10.0	9.90		ug/L		99	70 - 130
1,2-Dichlorobenzene	10.0	11.4		ug/L		114	70 - 130
1,2-Dichloroethane	10.0	8.97		ug/L		90	70 - 130
1,2-Dichloropropane	10.0	10.5		ug/L		105	70 - 130
1,3,5-Trimethylbenzene	10.0	10.3		ug/L		103	70 - 130
1,3-Dichlorobenzene	10.0	11.3		ug/L		113	70 - 130
1,3-Dichloropropane	10.0	9.89		ug/L		99	70 - 130
1,4-Dichlorobenzene	10.0	11.1		ug/L		111	70 - 130
2,2-Dichloropropane	10.0	9.08		ug/L		91	70 - 130
2-Chlorotoluene	10.0	12.5		ug/L		125	70 - 130
4-Chlorotoluene	10.0	9.83		ug/L		98	70 - 130
4-Isopropyltoluene	10.0	11.1		ug/L		111	70 - 130
Benzene	10.0	11.4		ug/L		114	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-419783/4
Matrix: Water
Analysis Batch: 419783

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.5		ug/L		105	70 - 130
Bromochloromethane	10.0	11.9		ug/L		119	70 - 130
Bromodichloromethane	10.0	10.2		ug/L		102	70 - 130
Bromoform	10.0	10.1		ug/L		101	70 - 130
Bromomethane	10.0	12.8		ug/L		128	70 - 130
Carbon tetrachloride	10.0	9.80		ug/L		98	70 - 130
Chlorobenzene	10.0	11.4		ug/L		114	70 - 130
Chloroethane	10.0	12.7		ug/L		127	70 - 130
Chloroform	10.0	10.2		ug/L		102	70 - 130
Chloromethane	10.0	11.3		ug/L		113	70 - 130
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	70 - 130
cis-1,3-Dichloropropene	10.0	10.1		ug/L		101	70 - 130
Dibromochloromethane	10.0	10.0		ug/L		100	70 - 130
Dibromomethane	10.0	10.4		ug/L		104	70 - 130
Dichlorodifluoromethane	10.0	12.5		ug/L		125	70 - 130
Ethylbenzene	10.0	10.6		ug/L		106	70 - 130
Hexachlorobutadiene	10.0	9.42		ug/L		94	70 - 130
Isopropylbenzene	10.0	10.8		ug/L		108	70 - 130
Methylene Chloride	10.0	10.6		ug/L		106	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.95		ug/L		100	70 - 130
m-Xylene & p-Xylene	20.0	22.7		ug/L		114	70 - 130
Naphthalene	10.0	10.7		ug/L		107	70 - 130
n-Butylbenzene	10.0	10.5		ug/L		105	70 - 130
N-Propylbenzene	10.0	9.99		ug/L		100	70 - 130
o-Xylene	10.0	10.7		ug/L		107	70 - 130
sec-Butylbenzene	10.0	10.6		ug/L		106	70 - 130
Styrene	10.0	11.1		ug/L		111	70 - 130
tert-Butylbenzene	10.0	10.4		ug/L		104	70 - 130
Tetrachloroethene	10.0	10.1		ug/L		101	70 - 130
Toluene	10.0	10.3		ug/L		103	70 - 130
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 130
trans-1,3-Dichloropropene	10.0	9.45		ug/L		95	70 - 130
Trichloroethene	10.0	10.1		ug/L		101	70 - 130
Trichlorofluoromethane	10.0	12.7		ug/L		127	70 - 130
Vinyl chloride	10.0	10.9		ug/L		109	70 - 130
Xylenes, Total	30.0	33.4		ug/L		111	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

TestAmerica Job ID: 160-33280-1
SDG: 40848

GC/MS VOA

Analysis Batch: 419783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33280-1	40848-001	Total/NA	Water	524.2	
160-33280-2	40848-002	Total/NA	Water	524.2	
MB 160-419783/6	Method Blank	Total/NA	Water	524.2	
LCS 160-419783/4	Lab Control Sample	Total/NA	Water	524.2	

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

TestAmerica Job ID: 160-33280-1
SDG: 40848

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCZ	BFB								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-33280-1	40848-001	101	89								
160-33280-2	40848-002	98	85								
LCS 160-419783/4	Lab Control Sample	100	85								
MB 160-419783/6	Method Blank	100	92								

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-33491-1
Laboratory Sample Delivery Group: 40892
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Contracts Section
Building 134B
Upton, New York 11973

Attn: Mr. Bob Howe

Authorized for release by:
4/5/2019 5:07:12 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-33491-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-33491-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 3/29/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 40892-001 (160-33491-1), 40892-002 (160-33491-2) and 40892-003 (160-33491-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 04/02/2019.

Job ID: 160-33491-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Analytical Batch 160-422366:
The continuing calibration verification (CCV) associated with batch 160-422366 recovered outside of acceptance criteria, low biased, for 1,2-Dibromo-3-Chloropropane. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data was reported.

The laboratory control sample (LCS) recovered outside of upper control limits for the following analytes: 2-Chlorotoluene and Chloroethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data was reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 40892-002 (160-33491-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 04/02/2019 and analyzed on 04/05/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

Preparation Batch 160-422436, Analytical Batch 160-422801:
The following samples were diluted due to the abundance of non-target analytes: (480-151037-L-1-A), (480-151037-L-1-B MS), (480-151037-L-1-C MSD), and (480-151037-L-1-A SD). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 40892

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Mill	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	3/28/19	1325	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1330	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1330	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0	↓	0900	W	Trip Blank	40 ML	SC	3	HCL					X							

160-33491 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Mill 3/28/19	Print	Print
Signature 1400	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Nicholas Voss 3-29-19	Print	Print
Signature 0900	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-33491-1
SDG Number: 40892

Login Number: 33491
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33491-1
SDG: 40892

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
B	The reported value is less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33491-1
SDG: 40892

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33491-1
SDG: 40892

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-33491-1	40892-001	Water	03/28/19 13:25	03/29/19 09:00
160-33491-2	40892-002	Water	03/28/19 13:30	03/29/19 09:00
160-33491-3	40892-003	Water	03/28/19 09:00	03/29/19 09:00

Client Sample Results

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33491-1
SDG: 40892

Client Sample ID: 40892-001

Date Collected: 03/28/19 13:25
Date Received: 03/29/19 09:00

Lab Sample ID: 160-33491-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/02/19 16:39	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/02/19 16:39	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/02/19 16:39	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/02/19 16:39	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/02/19 16:39	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/02/19 16:39	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/02/19 16:39	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/02/19 16:39	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/02/19 16:39	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/02/19 16:39	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/02/19 16:39	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/02/19 16:39	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/02/19 16:39	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/02/19 16:39	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/02/19 16:39	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/02/19 16:39	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/02/19 16:39	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/02/19 16:39	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/02/19 16:39	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/02/19 16:39	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/02/19 16:39	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/02/19 16:39	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/02/19 16:39	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/02/19 16:39	1
Benzene	0.50	U	0.50	0.10	ug/L			04/02/19 16:39	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/02/19 16:39	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/02/19 16:39	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/02/19 16:39	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/02/19 16:39	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/02/19 16:39	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/02/19 16:39	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/02/19 16:39	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/02/19 16:39	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/02/19 16:39	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/02/19 16:39	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/02/19 16:39	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/02/19 16:39	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/02/19 16:39	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/02/19 16:39	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/02/19 16:39	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/02/19 16:39	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/02/19 16:39	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/02/19 16:39	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/02/19 16:39	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/02/19 16:39	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/02/19 16:39	1
Naphthalene	0.50	U	0.50	0.57	ug/L			04/02/19 16:39	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/02/19 16:39	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/02/19 16:39	1

Client Sample ID: 40892-001

Date Collected: 03/28/19 13:25
Date Received: 03/29/19 09:00

Lab Sample ID: 160-33491-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			04/02/19 16:39	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/02/19 16:39	1
Styrene	0.50	U	0.50	0.21	ug/L			04/02/19 16:39	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/02/19 16:39	1
Tetrachloroethene	**3.3**		0.50	0.19	ug/L			04/02/19 16:39	1
Toluene	0.50	U	0.50	0.19	ug/L			04/02/19 16:39	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/02/19 16:39	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/02/19 16:39	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/02/19 16:39	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/02/19 16:39	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/02/19 16:39	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/02/19 16:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*		*04/02/19 16:39*	*1*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*		*04/02/19 16:39*	*1*

Client Sample ID: 40892-002

Date Collected: 03/28/19 13:30
Date Received: 03/29/19 09:00

Lab Sample ID: 160-33491-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/02/19 14:22	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/02/19 14:22	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/02/19 14:22	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/02/19 14:22	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/02/19 14:22	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/02/19 14:22	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/02/19 14:22	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/02/19 14:22	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/02/19 14:22	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/02/19 14:22	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/02/19 14:22	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/02/19 14:22	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/02/19 14:22	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/02/19 14:22	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/02/19 14:22	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/02/19 14:22	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/02/19 14:22	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/02/19 14:22	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/02/19 14:22	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/02/19 14:22	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/02/19 14:22	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/02/19 14:22	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/02/19 14:22	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/02/19 14:22	1
Benzene	0.50	U	0.50	0.10	ug/L			04/02/19 14:22	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/02/19 14:22	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/02/19 14:22	1

Client Sample ID: 40892-002

Date Collected: 03/28/19 13:30
Date Received: 03/29/19 09:00

Lab Sample ID: 160-33491-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/02/19 14:22	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/02/19 14:22	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/02/19 14:22	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/02/19 14:22	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/02/19 14:22	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/02/19 14:22	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/02/19 14:22	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/02/19 14:22	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/02/19 14:22	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/02/19 14:22	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/02/19 14:22	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/02/19 14:22	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/02/19 14:22	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/02/19 14:22	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/02/19 14:22	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/02/19 14:22	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/02/19 14:22	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/02/19 14:22	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/02/19 14:22	1
Naphthalene	0.50	U	0.50	0.57	ug/L			04/02/19 14:22	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/02/19 14:22	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/02/19 14:22	1
o-Xylene	0.50	U	0.50	0.29	ug/L			04/02/19 14:22	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/02/19 14:22	1
Styrene	0.50	U	0.50	0.21	ug/L			04/02/19 14:22	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/02/19 14:22	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			04/02/19 14:22	1
Toluene	0.50	U	0.50	0.19	ug/L			04/02/19 14:22	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/02/19 14:22	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/02/19 14:22	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/02/19 14:22	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/02/19 14:22	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/02/19 14:22	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/02/19 14:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*		*04/02/19 14:22*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*04/02/19 14:22*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		04/02/19 14:55	04/05/19 07:38	2

Client Sample ID: 40892-003

Date Collected: 03/28/19 09:00
Date Received: 03/29/19 09:00

Lab Sample ID: 160-33491-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/02/19 11:26	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33491-1
SDG: 40892

Client Sample ID: 40892-003
Date Collected: 03/28/19 09:00
Date Received: 03/29/19 09:00

Lab Sample ID: 160-33491-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/02/19 11:26	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/02/19 11:26	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/02/19 11:26	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/02/19 11:26	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/02/19 11:26	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/02/19 11:26	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/02/19 11:26	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/02/19 11:26	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/02/19 11:26	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/02/19 11:26	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/02/19 11:26	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/02/19 11:26	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/02/19 11:26	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/02/19 11:26	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/02/19 11:26	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/02/19 11:26	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/02/19 11:26	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/02/19 11:26	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/02/19 11:26	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/02/19 11:26	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/02/19 11:26	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/02/19 11:26	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/02/19 11:26	1
Benzene	0.50	U	0.50	0.10	ug/L			04/02/19 11:26	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/02/19 11:26	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/02/19 11:26	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/02/19 11:26	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/02/19 11:26	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/02/19 11:26	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/02/19 11:26	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/02/19 11:26	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/02/19 11:26	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/02/19 11:26	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/02/19 11:26	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/02/19 11:26	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/02/19 11:26	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/02/19 11:26	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/02/19 11:26	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/02/19 11:26	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/02/19 11:26	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/02/19 11:26	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/02/19 11:26	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/02/19 11:26	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/02/19 11:26	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/02/19 11:26	1
Naphthalene	0.50	U	0.50	0.57	ug/L			04/02/19 11:26	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/02/19 11:26	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/02/19 11:26	1
o-Xylene	0.50	U	0.50	0.29	ug/L			04/02/19 11:26	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33491-1
SDG: 40892

Client Sample ID: 40892-003
Date Collected: 03/28/19 09:00
Date Received: 03/29/19 09:00

Lab Sample ID: 160-33491-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/02/19 11:26	1
Styrene	0.50	U	0.50	0.21	ug/L			04/02/19 11:26	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/02/19 11:26	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			04/02/19 11:26	1
Toluene	0.50	U	0.50	0.19	ug/L			04/02/19 11:26	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/02/19 11:26	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/02/19 11:26	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/02/19 11:26	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/02/19 11:26	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/02/19 11:26	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/02/19 11:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*107*		*70 - 130*		*04/02/19 11:26*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*04/02/19 11:26*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-422366/6
Matrix: Water
Analysis Batch: 422366

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/02/19 10:57	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/02/19 10:57	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/02/19 10:57	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/02/19 10:57	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/02/19 10:57	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/02/19 10:57	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/02/19 10:57	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/02/19 10:57	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/02/19 10:57	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/02/19 10:57	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/02/19 10:57	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/02/19 10:57	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/02/19 10:57	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/02/19 10:57	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/02/19 10:57	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/02/19 10:57	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/02/19 10:57	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/02/19 10:57	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/02/19 10:57	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/02/19 10:57	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/02/19 10:57	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/02/19 10:57	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/02/19 10:57	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/02/19 10:57	1
Benzene	0.50	U	0.50	0.10	ug/L			04/02/19 10:57	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/02/19 10:57	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/02/19 10:57	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/02/19 10:57	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/02/19 10:57	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/02/19 10:57	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/02/19 10:57	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/02/19 10:57	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/02/19 10:57	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/02/19 10:57	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/02/19 10:57	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/02/19 10:57	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/02/19 10:57	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/02/19 10:57	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/02/19 10:57	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/02/19 10:57	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/02/19 10:57	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/02/19 10:57	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/02/19 10:57	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/02/19 10:57	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/02/19 10:57	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/02/19 10:57	1
Naphthalene	0.50	U	0.50	0.57	ug/L			04/02/19 10:57	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/02/19 10:57	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-422366/6
Matrix: Water
Analysis Batch: 422366

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/02/19 10:57	1
o-Xylene	0.50	U	0.50	0.29	ug/L			04/02/19 10:57	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/02/19 10:57	1
Styrene	0.50	U	0.50	0.21	ug/L			04/02/19 10:57	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/02/19 10:57	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			04/02/19 10:57	1
Toluene	0.50	U	0.50	0.19	ug/L			04/02/19 10:57	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/02/19 10:57	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/02/19 10:57	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/02/19 10:57	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/02/19 10:57	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/02/19 10:57	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/02/19 10:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*04/02/19 10:57*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*04/02/19 10:57*	*1*

Lab Sample ID: LCS 160-422366/4
Matrix: Water
Analysis Batch: 422366

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,1-Trichloroethane	10.0	9.88		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.41		ug/L		94	70 - 130
1,1,2-Trichloroethane	10.0	9.98		ug/L		100	70 - 130
1,1-Dichloroethane	10.0	10.2		ug/L		102	70 - 130
1,1-Dichloroethene	10.0	11.0		ug/L		110	70 - 130
1,1-Dichloropropene	10.0	10.1		ug/L		101	70 - 130
1,2,3-Trichlorobenzene	10.0	9.73		ug/L		97	70 - 130
1,2,3-Trichloropropane	10.0	8.75		ug/L		88	70 - 130
1,2,4-Trichlorobenzene	10.0	9.88		ug/L		99	70 - 130
1,2,4-Trimethylbenzene	10.0	12.1		ug/L		121	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	7.51		ug/L		75	70 - 130
1,2-Dibromoethane	10.0	9.72		ug/L		97	70 - 130
1,2-Dichlorobenzene	10.0	11.7		ug/L		117	70 - 130
1,2-Dichloroethane	10.0	8.32		ug/L		83	70 - 130
1,2-Dichloropropane	10.0	10.6		ug/L		106	70 - 130
1,3,5-Trimethylbenzene	10.0	11.0		ug/L		110	70 - 130
1,3-Dichlorobenzene	10.0	12.0		ug/L		120	70 - 130
1,3-Dichloropropane	10.0	9.57		ug/L		96	70 - 130
1,4-Dichlorobenzene	10.0	11.7		ug/L		117	70 - 130
2,2-Dichloropropane	10.0	9.04		ug/L		90	70 - 130
2-Chlorotoluene	10.0	13.3		ug/L		133	70 - 130
4-Chlorotoluene	10.0	10.4		ug/L		104	70 - 130
4-Isopropyltoluene	10.0	12.3		ug/L		123	70 - 130
Benzene	10.0	12.0		ug/L		120	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-422366/4
Matrix: Water
Analysis Batch: 422366

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.7		ug/L		107	70 - 130
Bromochloromethane	10.0	12.0		ug/L		120	70 - 130
Bromodichloromethane	10.0	9.88		ug/L		99	70 - 130
Bromoform	10.0	8.82		ug/L		88	70 - 130
Bromomethane	10.0	11.1		ug/L		111	70 - 130
Carbon tetrachloride	10.0	9.88		ug/L		99	70 - 130
Chlorobenzene	10.0	12.2		ug/L		122	70 - 130
Chloroethane	10.0	13.1		ug/L		131	70 - 130
Chloroform	10.0	10.4		ug/L		104	70 - 130
Chloromethane	10.0	12.2		ug/L		122	70 - 130
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	70 - 130
cis-1,3-Dichloropropene	10.0	10.3		ug/L		103	70 - 130
Dibromochloromethane	10.0	9.70		ug/L		97	70 - 130
Dibromomethane	10.0	9.98		ug/L		100	70 - 130
Dichlorodifluoromethane	10.0	10.8		ug/L		108	70 - 130
Ethylbenzene	10.0	11.8		ug/L		118	70 - 130
Hexachlorobutadiene	10.0	10.3		ug/L		103	70 - 130
Isopropylbenzene	10.0	12.2		ug/L		122	70 - 130
Methylene Chloride	10.0	10.9		ug/L		109	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.00		ug/L		90	70 - 130
m-Xylene & p-Xylene	20.0	25.4		ug/L		127	70 - 130
Naphthalene	10.0	9.76		ug/L		98	70 - 130
n-Butylbenzene	10.0	11.4		ug/L		114	70 - 130
N-Propylbenzene	10.0	11.0		ug/L		110	70 - 130
o-Xylene	10.0	11.5		ug/L		115	70 - 130
sec-Butylbenzene	10.0	12.2		ug/L		122	70 - 130
Styrene	10.0	12.0		ug/L		120	70 - 130
tert-Butylbenzene	10.0	11.4		ug/L		114	70 - 130
Tetrachloroethene	10.0	11.1		ug/L		111	70 - 130
Toluene	10.0	11.2		ug/L		112	70 - 130
trans-1,2-Dichloroethene	10.0	11.1		ug/L		111	70 - 130
trans-1,3-Dichloropropene	10.0	9.68		ug/L		97	70 - 130
Trichloroethene	10.0	10.6		ug/L		106	70 - 130
Trichlorofluoromethane	10.0	12.4		ug/L		124	70 - 130
Vinyl chloride	10.0	11.0		ug/L		110	70 - 130
Xylenes, Total	30.0	36.9		ug/L		123	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*104*		*70 - 130*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-422436/1-A
Matrix: Water
Analysis Batch: 422801

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422436

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		04/02/19 14:55	04/05/19 06:31	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-422436/2-A
Matrix: Water
Analysis Batch: 422801

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422436

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	187		ug/L		94	80 - 120		

Lab Sample ID: 480-151037-L-1-B MS
Matrix: Water
Analysis Batch: 422801

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 422436

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	200	U	200	197	B	ug/L		99	75 - 125		

Lab Sample ID: 480-151037-L-1-C MSD
Matrix: Water
Analysis Batch: 422801

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 422436

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	200	U	200	196	B	ug/L		98	75 - 125	0	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33491-1
SDG: 40892

GC/MS VOA

Analysis Batch: 422366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33491-1	40892-001	Total/NA	Water	524.2	
160-33491-2	40892-002	Total/NA	Water	524.2	
160-33491-3	40892-003	Total/NA	Water	524.2	
MB 160-422366/6	Method Blank	Total/NA	Water	524.2	
LCS 160-422366/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 422436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33491-2	40892-002	Total/NA	Water	3010A	
MB 160-422436/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-422436/2-A	Lab Control Sample	Total/NA	Water	3010A	
480-151037-L-1-B MS	Matrix Spike	Total/NA	Water	3010A	
480-151037-L-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 422801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33491-2	40892-002	Total/NA	Water	6020A	422436
MB 160-422436/1-A	Method Blank	Total/NA	Water	6020A	422436
LCS 160-422436/2-A	Lab Control Sample	Total/NA	Water	6020A	422436
480-151037-L-1-B MS	Matrix Spike	Total/NA	Water	6020A	422436
480-151037-L-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	422436

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33491-1
SDG: 40892

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-33491-1	40892-001	109	91
160-33491-2	40892-002	109	92
160-33491-3	40892-003	107	93
LCS 160-422366/4	Lab Control Sample	104	91
MB 160-422366/6	Method Blank	103	93

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-33558-1
Laboratory Sample Delivery Group: 40900
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Contracts Section
Building 134B
Upton, New York 11973

Attn: Mr. Bob Howe

Authorized for release by:
4/9/2019 10:40:05 AM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-33558-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-33558-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 4/3/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.4° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 40900-001 (160-33558-1), 40900-002 (160-33558-2), 40900-003 (160-33558-3), 40900-004 (160-33558-4), 40900-005 (160-33558-5) and 40900-006 (160-33558-6) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2.

Job ID: 160-33558-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The samples were analyzed on 04/04/2019.

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 40900-002 (160-33558-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 04/04/2019 and analyzed on 04/05/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 40900

Requires EDD X

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Mill	Phone: 314-298-8566
2		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type UID	Smp	Coll	Sample Information: Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information: Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	4/2/14	1035	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1040	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1040	W	RTW-1 Effluent	250 ML	p	1	Hno3										X
003	E	G	095-153	0		1017	W	RTW-2 Influent	40 ML	SC	3	HCL					X					
004	E	G	095-155	0		1020	W	RTW-3 Influent	40 ML	SC	3	HCL					X					
005	E	G	095-157	0		1025	W	RTW-4 Influent	40 ML	SC	3	HCL					X					
006	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X					

160-33558 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Mill 4/2/14	Print	Print
Signature 1400	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Nicholas Stross 4-3-14	Print	Print
Signature 0920	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☒ Disposal by Lab
- ☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-33558-1
SDG Number: 40900

Login Number: 33558
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33558-1
SDG: 40900

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33558-1
SDG: 40900

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33558-1
SDG: 40900

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-33558-1	40900-001	Water	04/02/19 10:35	04/03/19 09:20
160-33558-2	40900-002	Water	04/02/19 10:40	04/03/19 09:20
160-33558-3	40900-003	Water	04/02/19 10:17	04/03/19 09:20
160-33558-4	40900-004	Water	04/02/19 10:20	04/03/19 09:20
160-33558-5	40900-005	Water	04/02/19 10:25	04/03/19 09:20
160-33558-6	40900-006	Water	04/02/19 09:00	04/03/19 09:20

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33558-1
SDG: 40900

Client Sample ID: 40900-001
Date Collected: 04/02/19 10:35
Date Received: 04/03/19 09:20

Lab Sample ID: 160-33558-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/04/19 20:51	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/04/19 20:51	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 20:51	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/04/19 20:51	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/04/19 20:51	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/04/19 20:51	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/04/19 20:51	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/04/19 20:51	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/04/19 20:51	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/04/19 20:51	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 20:51	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/04/19 20:51	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/04/19 20:51	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/04/19 20:51	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 20:51	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/04/19 20:51	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/04/19 20:51	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/04/19 20:51	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/04/19 20:51	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/04/19 20:51	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/04/19 20:51	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/04/19 20:51	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/04/19 20:51	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/04/19 20:51	1
Benzene	0.50	U	0.50	0.10	ug/L			04/04/19 20:51	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/04/19 20:51	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 20:51	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 20:51	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/04/19 20:51	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/04/19 20:51	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/04/19 20:51	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/04/19 20:51	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/04/19 20:51	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/04/19 20:51	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/04/19 20:51	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 20:51	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/04/19 20:51	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 20:51	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/04/19 20:51	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/04/19 20:51	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/04/19 20:51	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/04/19 20:51	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/04/19 20:51	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/04/19 20:51	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/04/19 20:51	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/04/19 20:51	1
Naphthalene	0.50	U	0.50	0.57	ug/L			04/04/19 20:51	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/04/19 20:51	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/04/19 20:51	1

Client Sample ID: 40900-001

Date Collected: 04/02/19 10:35
Date Received: 04/03/19 09:20

Lab Sample ID: 160-33558-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			04/04/19 20:51	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 20:51	1
Styrene	0.50	U	0.50	0.21	ug/L			04/04/19 20:51	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/04/19 20:51	1
Tetrachloroethene	**2.9**		0.50	0.19	ug/L			04/04/19 20:51	1
Toluene	0.50	U	0.50	0.19	ug/L			04/04/19 20:51	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 20:51	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/04/19 20:51	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/04/19 20:51	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/04/19 20:51	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/04/19 20:51	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/04/19 20:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*04/04/19 20:51*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*04/04/19 20:51*	*1*

Client Sample ID: 40900-002

Date Collected: 04/02/19 10:40
Date Received: 04/03/19 09:20

Lab Sample ID: 160-33558-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/04/19 18:32	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/04/19 18:32	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 18:32	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/04/19 18:32	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/04/19 18:32	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/04/19 18:32	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/04/19 18:32	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/04/19 18:32	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/04/19 18:32	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/04/19 18:32	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 18:32	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/04/19 18:32	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/04/19 18:32	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/04/19 18:32	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 18:32	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/04/19 18:32	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/04/19 18:32	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/04/19 18:32	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/04/19 18:32	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/04/19 18:32	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/04/19 18:32	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/04/19 18:32	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/04/19 18:32	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/04/19 18:32	1
Benzene	0.50	U	0.50	0.10	ug/L			04/04/19 18:32	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/04/19 18:32	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 18:32	1

Client Sample ID: 40900-002

Date Collected: 04/02/19 10:40
Date Received: 04/03/19 09:20

Lab Sample ID: 160-33558-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 18:32	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/04/19 18:32	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/04/19 18:32	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/04/19 18:32	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/04/19 18:32	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/04/19 18:32	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/04/19 18:32	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/04/19 18:32	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 18:32	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/04/19 18:32	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 18:32	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/04/19 18:32	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/04/19 18:32	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/04/19 18:32	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/04/19 18:32	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/04/19 18:32	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/04/19 18:32	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/04/19 18:32	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/04/19 18:32	1
Naphthalene	0.50	U	0.50	0.57	ug/L			04/04/19 18:32	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/04/19 18:32	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/04/19 18:32	1
o-Xylene	0.50	U	0.50	0.29	ug/L			04/04/19 18:32	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 18:32	1
Styrene	0.50	U	0.50	0.21	ug/L			04/04/19 18:32	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/04/19 18:32	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			04/04/19 18:32	1
Toluene	0.50	U	0.50	0.19	ug/L			04/04/19 18:32	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 18:32	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/04/19 18:32	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/04/19 18:32	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/04/19 18:32	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/04/19 18:32	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/04/19 18:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*		*04/04/19 18:32*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*04/04/19 18:32*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	5.0	U	5.0	0.90	ug/L		04/04/19 15:15	04/05/19 17:00	2

Client Sample ID: 40900-003

Date Collected: 04/02/19 10:17
Date Received: 04/03/19 09:20

Lab Sample ID: 160-33558-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/04/19 21:14	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33558-1
SDG: 40900

Client Sample ID: 40900-003
Date Collected: 04/02/19 10:17
Date Received: 04/03/19 09:20

Lab Sample ID: 160-33558-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/04/19 21:14	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 21:14	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/04/19 21:14	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/04/19 21:14	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/04/19 21:14	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/04/19 21:14	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/04/19 21:14	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/04/19 21:14	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/04/19 21:14	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 21:14	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/04/19 21:14	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/04/19 21:14	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/04/19 21:14	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 21:14	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/04/19 21:14	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/04/19 21:14	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/04/19 21:14	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/04/19 21:14	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/04/19 21:14	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/04/19 21:14	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/04/19 21:14	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/04/19 21:14	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/04/19 21:14	1
Benzene	0.50	U	0.50	0.10	ug/L			04/04/19 21:14	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/04/19 21:14	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 21:14	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 21:14	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/04/19 21:14	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/04/19 21:14	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/04/19 21:14	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/04/19 21:14	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/04/19 21:14	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/04/19 21:14	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/04/19 21:14	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 21:14	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/04/19 21:14	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 21:14	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/04/19 21:14	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/04/19 21:14	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/04/19 21:14	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/04/19 21:14	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/04/19 21:14	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/04/19 21:14	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/04/19 21:14	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/04/19 21:14	1
Naphthalene	0.50	U	0.50	0.57	ug/L			04/04/19 21:14	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/04/19 21:14	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/04/19 21:14	1
o-Xylene	0.50	U	0.50	0.29	ug/L			04/04/19 21:14	1

Client Sample ID: 40900-003

Date Collected: 04/02/19 10:17
Date Received: 04/03/19 09:20

Lab Sample ID: 160-33558-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 21:14	1
Styrene	0.50	U	0.50	0.21	ug/L			04/04/19 21:14	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/04/19 21:14	1
Tetrachloroethene	**2.1**		0.50	0.19	ug/L			04/04/19 21:14	1
Toluene	0.50	U	0.50	0.19	ug/L			04/04/19 21:14	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 21:14	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/04/19 21:14	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/04/19 21:14	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/04/19 21:14	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/04/19 21:14	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/04/19 21:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*113*		*70 - 130*		*04/04/19 21:14*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*04/04/19 21:14*	*1*

Client Sample ID: 40900-004

Date Collected: 04/02/19 10:20
Date Received: 04/03/19 09:20

Lab Sample ID: 160-33558-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/04/19 21:37	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/04/19 21:37	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 21:37	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/04/19 21:37	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/04/19 21:37	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/04/19 21:37	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/04/19 21:37	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/04/19 21:37	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/04/19 21:37	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/04/19 21:37	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 21:37	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/04/19 21:37	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/04/19 21:37	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/04/19 21:37	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 21:37	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/04/19 21:37	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/04/19 21:37	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/04/19 21:37	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/04/19 21:37	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/04/19 21:37	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/04/19 21:37	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/04/19 21:37	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/04/19 21:37	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/04/19 21:37	1
Benzene	0.50	U	0.50	0.10	ug/L			04/04/19 21:37	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/04/19 21:37	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 21:37	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 21:37	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33558-1
SDG: 40900

Client Sample ID: 40900-004

Date Collected: 04/02/19 10:20
Date Received: 04/03/19 09:20

Lab Sample ID: 160-33558-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.25	ug/L			04/04/19 21:37	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/04/19 21:37	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/04/19 21:37	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/04/19 21:37	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/04/19 21:37	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/04/19 21:37	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/04/19 21:37	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 21:37	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/04/19 21:37	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 21:37	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/04/19 21:37	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/04/19 21:37	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/04/19 21:37	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/04/19 21:37	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/04/19 21:37	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/04/19 21:37	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/04/19 21:37	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/04/19 21:37	1
Naphthalene	0.50	U	0.50	0.57	ug/L			04/04/19 21:37	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/04/19 21:37	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/04/19 21:37	1
o-Xylene	0.50	U	0.50	0.29	ug/L			04/04/19 21:37	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 21:37	1
Styrene	0.50	U	0.50	0.21	ug/L			04/04/19 21:37	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/04/19 21:37	1
Tetrachloroethene	**1.8**		0.50	0.19	ug/L			04/04/19 21:37	1
Toluene	0.50	U	0.50	0.19	ug/L			04/04/19 21:37	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 21:37	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/04/19 21:37	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/04/19 21:37	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/04/19 21:37	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/04/19 21:37	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/04/19 21:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*113*		*70 - 130*		*04/04/19 21:37*	*1*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*		*04/04/19 21:37*	*1*

Client Sample ID: 40900-005

Date Collected: 04/02/19 10:25
Date Received: 04/03/19 09:20

Lab Sample ID: 160-33558-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/04/19 22:00	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/04/19 22:00	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 22:00	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/04/19 22:00	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/04/19 22:00	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/04/19 22:00	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33558-1
SDG: 40900

Client Sample ID: 40900-005
Date Collected: 04/02/19 10:25
Date Received: 04/03/19 09:20

Lab Sample ID: 160-33558-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/04/19 22:00	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/04/19 22:00	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/04/19 22:00	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/04/19 22:00	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 22:00	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/04/19 22:00	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/04/19 22:00	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/04/19 22:00	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 22:00	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/04/19 22:00	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/04/19 22:00	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/04/19 22:00	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/04/19 22:00	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/04/19 22:00	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/04/19 22:00	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/04/19 22:00	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/04/19 22:00	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/04/19 22:00	1
Benzene	0.50	U	0.50	0.10	ug/L			04/04/19 22:00	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/04/19 22:00	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 22:00	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 22:00	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/04/19 22:00	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/04/19 22:00	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/04/19 22:00	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/04/19 22:00	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/04/19 22:00	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/04/19 22:00	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/04/19 22:00	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 22:00	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/04/19 22:00	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 22:00	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/04/19 22:00	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/04/19 22:00	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/04/19 22:00	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/04/19 22:00	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/04/19 22:00	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/04/19 22:00	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/04/19 22:00	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/04/19 22:00	1
Naphthalene	0.50	U	0.50	0.57	ug/L			04/04/19 22:00	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/04/19 22:00	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/04/19 22:00	1
o-Xylene	0.50	U	0.50	0.29	ug/L			04/04/19 22:00	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 22:00	1
Styrene	0.50	U	0.50	0.21	ug/L			04/04/19 22:00	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/04/19 22:00	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			04/04/19 22:00	1
Toluene	0.50	U	0.50	0.19	ug/L			04/04/19 22:00	1

Client Sample ID: 40900-005

Lab Sample ID: 160-33558-5

Date Collected: 04/02/19 10:25

Matrix: Water

Date Received: 04/03/19 09:20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 22:00	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/04/19 22:00	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/04/19 22:00	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/04/19 22:00	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/04/19 22:00	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/04/19 22:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*114*		*70 - 130*		*04/04/19 22:00*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*04/04/19 22:00*	*1*

Client Sample ID: 40900-006

Lab Sample ID: 160-33558-6

Date Collected: 04/02/19 09:00

Matrix: Water

Date Received: 04/03/19 09:20

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/04/19 17:46	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/04/19 17:46	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 17:46	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/04/19 17:46	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/04/19 17:46	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/04/19 17:46	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/04/19 17:46	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/04/19 17:46	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/04/19 17:46	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/04/19 17:46	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 17:46	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/04/19 17:46	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/04/19 17:46	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/04/19 17:46	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 17:46	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/04/19 17:46	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/04/19 17:46	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/04/19 17:46	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/04/19 17:46	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/04/19 17:46	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/04/19 17:46	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/04/19 17:46	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/04/19 17:46	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/04/19 17:46	1
Benzene	0.50	U	0.50	0.10	ug/L			04/04/19 17:46	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/04/19 17:46	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 17:46	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 17:46	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/04/19 17:46	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/04/19 17:46	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/04/19 17:46	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/04/19 17:46	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/04/19 17:46	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33558-1
SDG: 40900

Client Sample ID: 40900-006
Date Collected: 04/02/19 09:00
Date Received: 04/03/19 09:20

Lab Sample ID: 160-33558-6
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	0.50	U	0.50	0.24	ug/L			04/04/19 17:46	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/04/19 17:46	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 17:46	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/04/19 17:46	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 17:46	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/04/19 17:46	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/04/19 17:46	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/04/19 17:46	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/04/19 17:46	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/04/19 17:46	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/04/19 17:46	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/04/19 17:46	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/04/19 17:46	1
Naphthalene	0.50	U	0.50	0.57	ug/L			04/04/19 17:46	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/04/19 17:46	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/04/19 17:46	1
o-Xylene	0.50	U	0.50	0.29	ug/L			04/04/19 17:46	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 17:46	1
Styrene	0.50	U	0.50	0.21	ug/L			04/04/19 17:46	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/04/19 17:46	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			04/04/19 17:46	1
Toluene	0.50	U	0.50	0.19	ug/L			04/04/19 17:46	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 17:46	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/04/19 17:46	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/04/19 17:46	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/04/19 17:46	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/04/19 17:46	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/04/19 17:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*		*04/04/19 17:46*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*04/04/19 17:46*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-422685/6
Matrix: Water
Analysis Batch: 422685

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/04/19 17:00	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/04/19 17:00	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 17:00	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/04/19 17:00	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/04/19 17:00	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/04/19 17:00	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/04/19 17:00	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/04/19 17:00	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/04/19 17:00	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/04/19 17:00	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 17:00	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/04/19 17:00	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/04/19 17:00	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/04/19 17:00	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/04/19 17:00	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/04/19 17:00	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/04/19 17:00	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/04/19 17:00	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/04/19 17:00	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/04/19 17:00	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/04/19 17:00	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/04/19 17:00	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/04/19 17:00	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/04/19 17:00	1
Benzene	0.50	U	0.50	0.10	ug/L			04/04/19 17:00	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/04/19 17:00	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 17:00	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 17:00	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/04/19 17:00	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/04/19 17:00	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/04/19 17:00	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/04/19 17:00	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/04/19 17:00	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/04/19 17:00	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/04/19 17:00	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 17:00	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/04/19 17:00	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/04/19 17:00	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/04/19 17:00	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/04/19 17:00	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/04/19 17:00	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/04/19 17:00	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/04/19 17:00	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/04/19 17:00	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/04/19 17:00	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/04/19 17:00	1
Naphthalene	0.50	U	0.50	0.57	ug/L			04/04/19 17:00	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/04/19 17:00	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-422685/6
Matrix: Water
Analysis Batch: 422685

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/04/19 17:00	1
o-Xylene	0.50	U	0.50	0.29	ug/L			04/04/19 17:00	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/04/19 17:00	1
Styrene	0.50	U	0.50	0.21	ug/L			04/04/19 17:00	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/04/19 17:00	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			04/04/19 17:00	1
Toluene	0.50	U	0.50	0.19	ug/L			04/04/19 17:00	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/04/19 17:00	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/04/19 17:00	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/04/19 17:00	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/04/19 17:00	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/04/19 17:00	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/04/19 17:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*107*		*70 - 130*		*04/04/19 17:00*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*04/04/19 17:00*	*1*

Lab Sample ID: LCS 160-422685/4
Matrix: Water
Analysis Batch: 422685

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	11.3		ug/L		113	70 - 130
1,1,1-Trichloroethane	10.0	10.5		ug/L		105	70 - 130
1,1,2,2-Tetrachloroethane	10.0	11.0		ug/L		110	70 - 130
1,1,2-Trichloroethane	10.0	11.0		ug/L		110	70 - 130
1,1-Dichloroethane	10.0	10.8		ug/L		108	70 - 130
1,1-Dichloroethene	10.0	11.5		ug/L		115	70 - 130
1,1-Dichloropropene	10.0	11.0		ug/L		110	70 - 130
1,2,3-Trichlorobenzene	10.0	11.2		ug/L		112	70 - 130
1,2,3-Trichloropropane	10.0	10.2		ug/L		102	70 - 130
1,2,4-Trichlorobenzene	10.0	11.7		ug/L		117	70 - 130
1,2,4-Trimethylbenzene	10.0	12.1		ug/L		121	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	10.3		ug/L		103	70 - 130
1,2-Dibromoethane	10.0	11.1		ug/L		111	70 - 130
1,2-Dichlorobenzene	10.0	11.4		ug/L		114	70 - 130
1,2-Dichloroethane	10.0	9.45		ug/L		94	70 - 130
1,2-Dichloropropane	10.0	10.5		ug/L		105	70 - 130
1,3,5-Trimethylbenzene	10.0	11.8		ug/L		118	70 - 130
1,3-Dichlorobenzene	10.0	11.5		ug/L		115	70 - 130
1,3-Dichloropropane	10.0	10.7		ug/L		107	70 - 130
1,4-Dichlorobenzene	10.0	11.4		ug/L		114	70 - 130
2,2-Dichloropropane	10.0	10.7		ug/L		107	70 - 130
2-Chlorotoluene	10.0	10.6		ug/L		106	70 - 130
4-Chlorotoluene	10.0	11.7		ug/L		117	70 - 130
4-Isopropyltoluene	10.0	11.8		ug/L		118	70 - 130
Benzene	10.0	10.9		ug/L		109	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-422685/4
Matrix: Water
Analysis Batch: 422685

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	11.3		ug/L		113	70 - 130
Bromochloromethane	10.0	10.5		ug/L		105	70 - 130
Bromodichloromethane	10.0	10.4		ug/L		104	70 - 130
Bromoform	10.0	12.1		ug/L		121	70 - 130
Bromomethane	10.0	10.3		ug/L		103	70 - 130
Carbon tetrachloride	10.0	10.9		ug/L		109	70 - 130
Chlorobenzene	10.0	11.2		ug/L		112	70 - 130
Chloroethane	10.0	10.7		ug/L		107	70 - 130
Chloroform	10.0	10.3		ug/L		103	70 - 130
Chloromethane	10.0	12.5		ug/L		125	70 - 130
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	70 - 130
cis-1,3-Dichloropropene	10.0	11.0		ug/L		110	70 - 130
Dibromochloromethane	10.0	11.6		ug/L		116	70 - 130
Dibromomethane	10.0	10.1		ug/L		101	70 - 130
Dichlorodifluoromethane	10.0	11.9		ug/L		119	70 - 130
Ethylbenzene	10.0	11.6		ug/L		116	70 - 130
Hexachlorobutadiene	10.0	11.5		ug/L		115	70 - 130
Isopropylbenzene	10.0	11.8		ug/L		118	70 - 130
Methylene Chloride	10.0	10.7		ug/L		107	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.6		ug/L		106	70 - 130
m-Xylene & p-Xylene	20.0	23.1		ug/L		116	70 - 130
Naphthalene	10.0	11.5		ug/L		115	70 - 130
n-Butylbenzene	10.0	12.2		ug/L		122	70 - 130
N-Propylbenzene	10.0	12.2		ug/L		122	70 - 130
o-Xylene	10.0	11.4		ug/L		114	70 - 130
sec-Butylbenzene	10.0	12.1		ug/L		121	70 - 130
Styrene	10.0	11.8		ug/L		118	70 - 130
tert-Butylbenzene	10.0	11.9		ug/L		119	70 - 130
Tetrachloroethene	10.0	11.4		ug/L		114	70 - 130
Toluene	10.0	11.7		ug/L		117	70 - 130
trans-1,2-Dichloroethene	10.0	11.0		ug/L		110	70 - 130
trans-1,3-Dichloropropene	10.0	12.0		ug/L		120	70 - 130
Trichloroethene	10.0	10.5		ug/L		105	70 - 130
Trichlorofluoromethane	10.0	11.4		ug/L		114	70 - 130
Vinyl chloride	10.0	12.1		ug/L		121	70 - 130
Xylenes, Total	30.0	34.5		ug/L		115	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*107*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-422727/1-A
Matrix: Water
Analysis Batch: 423006

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422727

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	5.0	U	5.0	0.90	ug/L		04/04/19 15:15	04/05/19 16:38	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-422727/2-A
Matrix: Water
Analysis Batch: 423006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422727

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	199		ug/L		99	80 - 120		

Lab Sample ID: 160-33558-2 MS
Matrix: Water
Analysis Batch: 423006

Client Sample ID: 40900-002
Prep Type: Total/NA
Prep Batch: 422727

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	5.0	U	200	201		ug/L		100	75 - 125		

Lab Sample ID: 160-33558-2 MSD
Matrix: Water
Analysis Batch: 423006

Client Sample ID: 40900-002
Prep Type: Total/NA
Prep Batch: 422727

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	5.0	U	200	200		ug/L		100	75 - 125	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33558-1
SDG: 40900

GC/MS VOA

Analysis Batch: 422685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33558-1	40900-001	Total/NA	Water	524.2	
160-33558-2	40900-002	Total/NA	Water	524.2	
160-33558-3	40900-003	Total/NA	Water	524.2	
160-33558-4	40900-004	Total/NA	Water	524.2	
160-33558-5	40900-005	Total/NA	Water	524.2	
160-33558-6	40900-006	Total/NA	Water	524.2	
MB 160-422685/6	Method Blank	Total/NA	Water	524.2	
LCS 160-422685/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 422727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33558-2	40900-002	Total/NA	Water	3010A	
MB 160-422727/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-422727/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-33558-2 MS	40900-002	Total/NA	Water	3010A	
160-33558-2 MSD	40900-002	Total/NA	Water	3010A	

Analysis Batch: 423006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33558-2	40900-002	Total/NA	Water	6020A	422727
MB 160-422727/1-A	Method Blank	Total/NA	Water	6020A	422727
LCS 160-422727/2-A	Lab Control Sample	Total/NA	Water	6020A	422727
160-33558-2 MS	40900-002	Total/NA	Water	6020A	422727
160-33558-2 MSD	40900-002	Total/NA	Water	6020A	422727

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33558-1
SDG: 40900

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		DCZ	BFB										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
160-33558-1	40900-001	111	104										
160-33558-2	40900-002	110	102										
160-33558-3	40900-003	113	104										
160-33558-4	40900-004	113	107										
160-33558-5	40900-005	114	104										
160-33558-6	40900-006	109	101										
LCS 160-422685/4	Lab Control Sample	107	104										
MB 160-422685/6	Method Blank	107	101										

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4
BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-33806-1
Laboratory Sample Delivery Group: 40992
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Contracts Section
Building 134B
Upton, New York 11973

Attn: Mr. Bob Howe

Authorized for release by:
4/26/2019 9:36:07 AM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-33806-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-33806-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 4/18/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 40992-001 (160-33806-1), 40992-002 (160-33806-2) and 40992-003 (160-33806-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 04/22/2019.

Job ID: 160-33806-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-424931:
The continuing calibration verification (CCVIS) recovered above the upper control limit for Chloromethane and Dichlorodifluoromethane. The samples associated with this CCV excursion were non-detects for the affected analytes; therefore, the data was reported: 40992-001 (160-33806-1), 40992-002 (160-33806-2), 40992-003 (160-33806-3), and (CCVIS 160-424931/3).

The laboratory control sample (LCS) for analytical batch 160-424931 recovered outside of upper control limits for the following analytes: Chloromethane and Dichlorodifluoromethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data was reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 40992-002 (160-33806-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 04/23/2019 and analyzed on 04/25/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

BROOKHAVEN NATIONAL LABORATORY

P.O.# _____

Chain of Custody No. 40992

Requires EDD Y

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Miller	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	4/16/19	1105	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1110	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1110	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X							

160-33806 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Miller 4/17/19	Print	Print
Signature 1400	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Nicholas Press 4-18-19	Print	Print
Signature 0920	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☒ Disposal by Lab
- ☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-33806-1
SDG Number: 40992

Login Number: 33806
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33806-1
SDG: 40992

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33806-1
SDG: 40992

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33806-1
SDG: 40992

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-33806-1	40992-001	Water	04/16/19 11:05	04/18/19 09:20
160-33806-2	40992-002	Water	04/16/19 11:10	04/18/19 09:20
160-33806-3	40992-003	Water	04/16/19 09:00	04/18/19 09:20

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33806-1
SDG: 40992

Client Sample ID: 40992-001
Date Collected: 04/16/19 11:05
Date Received: 04/18/19 09:20

Lab Sample ID: 160-33806-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/22/19 12:59	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/22/19 12:59	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/22/19 12:59	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/22/19 12:59	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/22/19 12:59	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/22/19 12:59	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/22/19 12:59	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/22/19 12:59	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/22/19 12:59	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/22/19 12:59	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/22/19 12:59	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/22/19 12:59	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/22/19 12:59	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/22/19 12:59	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/22/19 12:59	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/22/19 12:59	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/22/19 12:59	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/22/19 12:59	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/22/19 12:59	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/22/19 12:59	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/22/19 12:59	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/22/19 12:59	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/22/19 12:59	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/22/19 12:59	1
Benzene	0.50	U	0.50	0.10	ug/L			04/22/19 12:59	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/22/19 12:59	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/22/19 12:59	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/22/19 12:59	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/22/19 12:59	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/22/19 12:59	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/22/19 12:59	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/22/19 12:59	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/22/19 12:59	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/22/19 12:59	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/22/19 12:59	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/22/19 12:59	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/22/19 12:59	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/22/19 12:59	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/22/19 12:59	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/22/19 12:59	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/22/19 12:59	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/22/19 12:59	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/22/19 12:59	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/22/19 12:59	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/22/19 12:59	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/22/19 12:59	1
Naphthalene	0.67	U	0.67	0.57	ug/L			04/22/19 12:59	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/22/19 12:59	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/22/19 12:59	1

Client Sample ID: 40992-001

Lab Sample ID: 160-33806-1

Date Collected: 04/16/19 11:05

Matrix: Water

Date Received: 04/18/19 09:20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			04/22/19 12:59	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/22/19 12:59	1
Styrene	0.50	U	0.50	0.21	ug/L			04/22/19 12:59	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/22/19 12:59	1
Tetrachloroethene	**2.8**		0.50	0.19	ug/L			04/22/19 12:59	1
Toluene	0.50	U	0.50	0.19	ug/L			04/22/19 12:59	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/22/19 12:59	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/22/19 12:59	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/22/19 12:59	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/22/19 12:59	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/22/19 12:59	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/22/19 12:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*113*		*70 - 130*		*04/22/19 12:59*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*04/22/19 12:59*	*1*

Client Sample ID: 40992-002

Lab Sample ID: 160-33806-2

Date Collected: 04/16/19 11:10

Matrix: Water

Date Received: 04/18/19 09:20

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/22/19 13:22	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/22/19 13:22	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/22/19 13:22	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/22/19 13:22	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/22/19 13:22	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/22/19 13:22	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/22/19 13:22	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/22/19 13:22	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/22/19 13:22	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/22/19 13:22	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/22/19 13:22	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/22/19 13:22	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/22/19 13:22	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/22/19 13:22	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/22/19 13:22	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/22/19 13:22	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/22/19 13:22	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/22/19 13:22	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/22/19 13:22	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/22/19 13:22	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/22/19 13:22	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/22/19 13:22	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/22/19 13:22	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/22/19 13:22	1
Benzene	0.50	U	0.50	0.10	ug/L			04/22/19 13:22	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/22/19 13:22	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/22/19 13:22	1

Client Sample ID: 40992-002
Date Collected: 04/16/19 11:10
Date Received: 04/18/19 09:20

Lab Sample ID: 160-33806-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/22/19 13:22	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/22/19 13:22	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/22/19 13:22	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/22/19 13:22	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/22/19 13:22	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/22/19 13:22	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/22/19 13:22	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/22/19 13:22	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/22/19 13:22	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/22/19 13:22	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/22/19 13:22	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/22/19 13:22	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/22/19 13:22	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/22/19 13:22	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/22/19 13:22	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/22/19 13:22	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/22/19 13:22	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/22/19 13:22	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/22/19 13:22	1
Naphthalene	0.67	U	0.67	0.57	ug/L			04/22/19 13:22	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/22/19 13:22	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/22/19 13:22	1
o-Xylene	0.50	U	0.50	0.29	ug/L			04/22/19 13:22	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/22/19 13:22	1
Styrene	0.50	U	0.50	0.21	ug/L			04/22/19 13:22	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/22/19 13:22	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			04/22/19 13:22	1
Toluene	0.50	U	0.50	0.19	ug/L			04/22/19 13:22	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/22/19 13:22	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/22/19 13:22	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/22/19 13:22	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/22/19 13:22	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/22/19 13:22	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/22/19 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*114*		*70 - 130*		*04/22/19 13:22*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*04/22/19 13:22*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		04/23/19 18:53	04/25/19 01:37	2

Client Sample ID: 40992-003
Date Collected: 04/16/19 09:00
Date Received: 04/18/19 09:20

Lab Sample ID: 160-33806-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/22/19 12:36	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33806-1
SDG: 40992

Client Sample ID: 40992-003
Date Collected: 04/16/19 09:00
Date Received: 04/18/19 09:20

Lab Sample ID: 160-33806-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/22/19 12:36	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/22/19 12:36	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/22/19 12:36	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/22/19 12:36	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/22/19 12:36	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/22/19 12:36	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/22/19 12:36	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/22/19 12:36	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/22/19 12:36	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/22/19 12:36	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/22/19 12:36	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/22/19 12:36	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/22/19 12:36	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/22/19 12:36	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/22/19 12:36	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/22/19 12:36	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/22/19 12:36	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/22/19 12:36	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/22/19 12:36	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/22/19 12:36	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/22/19 12:36	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/22/19 12:36	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/22/19 12:36	1
Benzene	0.50	U	0.50	0.10	ug/L			04/22/19 12:36	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/22/19 12:36	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/22/19 12:36	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/22/19 12:36	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/22/19 12:36	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/22/19 12:36	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/22/19 12:36	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/22/19 12:36	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/22/19 12:36	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/22/19 12:36	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/22/19 12:36	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/22/19 12:36	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/22/19 12:36	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/22/19 12:36	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/22/19 12:36	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/22/19 12:36	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/22/19 12:36	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/22/19 12:36	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/22/19 12:36	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/22/19 12:36	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/22/19 12:36	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/22/19 12:36	1
Naphthalene	0.67	U	0.67	0.57	ug/L			04/22/19 12:36	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/22/19 12:36	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/22/19 12:36	1
o-Xylene	0.50	U	0.50	0.29	ug/L			04/22/19 12:36	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33806-1
SDG: 40992

Client Sample ID: 40992-003
Date Collected: 04/16/19 09:00
Date Received: 04/18/19 09:20

Lab Sample ID: 160-33806-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/22/19 12:36	1
Styrene	0.50	U	0.50	0.21	ug/L			04/22/19 12:36	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/22/19 12:36	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			04/22/19 12:36	1
Toluene	0.50	U	0.50	0.19	ug/L			04/22/19 12:36	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/22/19 12:36	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/22/19 12:36	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/22/19 12:36	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/22/19 12:36	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/22/19 12:36	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/22/19 12:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*		*04/22/19 12:36*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*04/22/19 12:36*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-424931/6
Matrix: Water
Analysis Batch: 424931

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/22/19 11:49	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/22/19 11:49	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			04/22/19 11:49	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/22/19 11:49	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			04/22/19 11:49	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			04/22/19 11:49	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			04/22/19 11:49	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			04/22/19 11:49	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			04/22/19 11:49	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			04/22/19 11:49	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			04/22/19 11:49	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			04/22/19 11:49	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			04/22/19 11:49	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			04/22/19 11:49	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			04/22/19 11:49	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			04/22/19 11:49	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			04/22/19 11:49	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			04/22/19 11:49	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			04/22/19 11:49	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			04/22/19 11:49	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			04/22/19 11:49	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			04/22/19 11:49	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			04/22/19 11:49	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/22/19 11:49	1
Benzene	0.50	U	0.50	0.10	ug/L			04/22/19 11:49	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			04/22/19 11:49	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			04/22/19 11:49	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			04/22/19 11:49	1
Bromoform	0.50	U	0.50	0.25	ug/L			04/22/19 11:49	1
Bromomethane	0.50	U	0.50	0.38	ug/L			04/22/19 11:49	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			04/22/19 11:49	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			04/22/19 11:49	1
Chloroethane	0.50	U	0.50	0.18	ug/L			04/22/19 11:49	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/22/19 11:49	1
Chloromethane	0.50	U	0.50	0.20	ug/L			04/22/19 11:49	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/22/19 11:49	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/22/19 11:49	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/22/19 11:49	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			04/22/19 11:49	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			04/22/19 11:49	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			04/22/19 11:49	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			04/22/19 11:49	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			04/22/19 11:49	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/22/19 11:49	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/22/19 11:49	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			04/22/19 11:49	1
Naphthalene	0.67	U	0.67	0.57	ug/L			04/22/19 11:49	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/22/19 11:49	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-424931/6
Matrix: Water
Analysis Batch: 424931

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			04/22/19 11:49	1
o-Xylene	0.50	U	0.50	0.29	ug/L			04/22/19 11:49	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/22/19 11:49	1
Styrene	0.50	U	0.50	0.21	ug/L			04/22/19 11:49	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/22/19 11:49	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			04/22/19 11:49	1
Toluene	0.50	U	0.50	0.19	ug/L			04/22/19 11:49	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			04/22/19 11:49	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/22/19 11:49	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			04/22/19 11:49	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			04/22/19 11:49	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/22/19 11:49	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			04/22/19 11:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*113*		*70 - 130*		*04/22/19 11:49*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*04/22/19 11:49*	*1*

Lab Sample ID: LCS 160-424931/4
Matrix: Water
Analysis Batch: 424931

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	11.5		ug/L		115	70 - 130
1,1,1-Trichloroethane	10.0	11.0		ug/L		110	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.6		ug/L		106	70 - 130
1,1,2-Trichloroethane	10.0	11.2		ug/L		112	70 - 130
1,1-Dichloroethane	10.0	11.3		ug/L		113	70 - 130
1,1-Dichloroethene	10.0	11.8		ug/L		118	70 - 130
1,1-Dichloropropene	10.0	11.4		ug/L		114	70 - 130
1,2,3-Trichlorobenzene	10.0	11.3		ug/L		113	70 - 130
1,2,3-Trichloropropane	10.0	10.1		ug/L		101	70 - 130
1,2,4-Trichlorobenzene	10.0	11.7		ug/L		117	70 - 130
1,2,4-Trimethylbenzene	10.0	12.0		ug/L		120	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	10.4		ug/L		104	70 - 130
1,2-Dibromoethane	10.0	11.1		ug/L		111	70 - 130
1,2-Dichlorobenzene	10.0	11.4		ug/L		114	70 - 130
1,2-Dichloroethane	10.0	9.98		ug/L		100	70 - 130
1,2-Dichloropropane	10.0	11.0		ug/L		110	70 - 130
1,3,5-Trimethylbenzene	10.0	11.7		ug/L		117	70 - 130
1,3-Dichlorobenzene	10.0	11.5		ug/L		115	70 - 130
1,3-Dichloropropane	10.0	10.7		ug/L		107	70 - 130
1,4-Dichlorobenzene	10.0	11.4		ug/L		114	70 - 130
2,2-Dichloropropane	10.0	10.6		ug/L		106	70 - 130
2-Chlorotoluene	10.0	11.3		ug/L		113	70 - 130
4-Chlorotoluene	10.0	11.3		ug/L		113	70 - 130
4-Isopropyltoluene	10.0	11.8		ug/L		118	70 - 130
Benzene	10.0	11.6		ug/L		116	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-424931/4
Matrix: Water
Analysis Batch: 424931

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	11.1		ug/L		111	70 - 130
Bromochloromethane	10.0	11.2		ug/L		112	70 - 130
Bromodichloromethane	10.0	11.3		ug/L		113	70 - 130
Bromoform	10.0	12.5		ug/L		125	70 - 130
Bromomethane	10.0	10.5		ug/L		105	70 - 130
Carbon tetrachloride	10.0	11.4		ug/L		114	70 - 130
Chlorobenzene	10.0	11.5		ug/L		115	70 - 130
Chloroethane	10.0	10.9		ug/L		109	70 - 130
Chloroform	10.0	11.0		ug/L		110	70 - 130
Chloromethane	10.0	13.3		ug/L		133	70 - 130
cis-1,2-Dichloroethene	10.0	11.2		ug/L		112	70 - 130
cis-1,3-Dichloropropene	10.0	11.4		ug/L		114	70 - 130
Dibromochloromethane	10.0	12.0		ug/L		120	70 - 130
Dibromomethane	10.0	10.5		ug/L		105	70 - 130
Dichlorodifluoromethane	10.0	13.8		ug/L		138	70 - 130
Ethylbenzene	10.0	11.8		ug/L		118	70 - 130
Hexachlorobutadiene	10.0	11.5		ug/L		115	70 - 130
Isopropylbenzene	10.0	12.0		ug/L		120	70 - 130
Methylene Chloride	10.0	11.6		ug/L		116	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.6		ug/L		106	70 - 130
m-Xylene & p-Xylene	20.0	23.3		ug/L		117	70 - 130
Naphthalene	10.0	11.3		ug/L		113	70 - 130
n-Butylbenzene	10.0	12.1		ug/L		121	70 - 130
N-Propylbenzene	10.0	12.2		ug/L		122	70 - 130
o-Xylene	10.0	11.4		ug/L		114	70 - 130
sec-Butylbenzene	10.0	11.9		ug/L		119	70 - 130
Styrene	10.0	12.1		ug/L		121	70 - 130
tert-Butylbenzene	10.0	11.7		ug/L		117	70 - 130
Tetrachloroethene	10.0	11.6		ug/L		116	70 - 130
Toluene	10.0	11.7		ug/L		117	70 - 130
trans-1,2-Dichloroethene	10.0	11.6		ug/L		116	70 - 130
trans-1,3-Dichloropropene	10.0	11.9		ug/L		119	70 - 130
Trichloroethene	10.0	11.1		ug/L		111	70 - 130
Trichlorofluoromethane	10.0	12.1		ug/L		121	70 - 130
Vinyl chloride	10.0	12.5		ug/L		125	70 - 130
Xylenes, Total	30.0	34.7		ug/L		116	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-425276/1-A
Matrix: Water
Analysis Batch: 425498

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425276

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		04/23/19 18:53	04/25/19 01:24	2

QC Sample Results

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33806-1
SDG: 40992

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-425276/2-A
Matrix: Water
Analysis Batch: 425498

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425276

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	200		ug/L		100	80 - 120		

Lab Sample ID: 160-33806-2 MS
Matrix: Water
Analysis Batch: 425498

Client Sample ID: 40992-002
Prep Type: Total/NA
Prep Batch: 425276

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	202		ug/L		101	75 - 125		

Lab Sample ID: 160-33806-2 MSD
Matrix: Water
Analysis Batch: 425498

Client Sample ID: 40992-002
Prep Type: Total/NA
Prep Batch: 425276

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	201		ug/L		101	75 - 125	0	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33806-1
SDG: 40992

GC/MS VOA

Analysis Batch: 424931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33806-1	40992-001	Total/NA	Water	524.2	
160-33806-2	40992-002	Total/NA	Water	524.2	
160-33806-3	40992-003	Total/NA	Water	524.2	
MB 160-424931/6	Method Blank	Total/NA	Water	524.2	
LCS 160-424931/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 425276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33806-2	40992-002	Total/NA	Water	3010A	
MB 160-425276/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-425276/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-33806-2 MS	40992-002	Total/NA	Water	3010A	
160-33806-2 MSD	40992-002	Total/NA	Water	3010A	

Analysis Batch: 425498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33806-2	40992-002	Total/NA	Water	6020A	425276
MB 160-425276/1-A	Method Blank	Total/NA	Water	6020A	425276
LCS 160-425276/2-A	Lab Control Sample	Total/NA	Water	6020A	425276
160-33806-2 MS	40992-002	Total/NA	Water	6020A	425276
160-33806-2 MSD	40992-002	Total/NA	Water	6020A	425276

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33806-1
SDG: 40992

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		DCZ	BFB								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-33806-1	40992-001	113	103								
160-33806-2	40992-002	114	104								
160-33806-3	40992-003	110	103								
LCS 160-424931/4	Lab Control Sample	111	109								
MB 160-424931/6	Method Blank	113	104								

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-33988-1
Laboratory Sample Delivery Group: 41034
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Contracts Section
Building 134B
Upton, New York 11973

Attn: Mr. Bob Howe

Authorized for release by:
5/13/2019 12:56:21 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-33988-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-33988-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 5/2/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41034-001 (160-33988-1), 41034-002 (160-33988-2) and 41034-003 (160-33988-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 05/03/2019.

Job ID: 160-33988-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 41034-002 (160-33988-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 05/03/2019 and analyzed on 05/07/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41034

Requires EDD Y

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler:	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD Use TB-1 for Coc# 41033

Type UID	Smp	Coll	Sample Information Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	5/1/19	1315	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1318	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1318	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X					

160-33988 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Mirin 5/1/19	Print	Print
Signature 1400	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Nicholas Press 5-2-19	Print	Print
Signature 0915	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☐ Archive For _____ Months
- ☒ Disposal by Lab

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☐ 7 Days
- ☒ 14 Days
- ☐ Other ( )
- ☐ 30 Days

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-33988-1
SDG Number: 41034

Login Number: 33988
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33988-1
SDG: 41034

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33988-1
SDG: 41034

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33988-1
SDG: 41034

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-33988-1	41034-001	Water	05/01/19 13:15	05/02/19 09:15
160-33988-2	41034-002	Water	05/01/19 13:18	05/02/19 09:15
160-33988-3	41034-003	Water	05/01/19 09:00	05/02/19 09:15

Client Sample ID: 41034-001

Date Collected: 05/01/19 13:15
Date Received: 05/02/19 09:15

Lab Sample ID: 160-33988-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			05/03/19 13:50	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			05/03/19 13:50	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			05/03/19 13:50	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/03/19 13:50	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			05/03/19 13:50	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			05/03/19 13:50	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			05/03/19 13:50	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			05/03/19 13:50	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			05/03/19 13:50	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			05/03/19 13:50	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			05/03/19 13:50	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			05/03/19 13:50	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			05/03/19 13:50	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			05/03/19 13:50	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			05/03/19 13:50	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			05/03/19 13:50	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			05/03/19 13:50	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			05/03/19 13:50	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			05/03/19 13:50	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			05/03/19 13:50	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			05/03/19 13:50	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			05/03/19 13:50	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			05/03/19 13:50	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/03/19 13:50	1
Benzene	0.50	U	0.50	0.10	ug/L			05/03/19 13:50	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			05/03/19 13:50	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			05/03/19 13:50	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			05/03/19 13:50	1
Bromoform	0.50	U	0.50	0.25	ug/L			05/03/19 13:50	1
Bromomethane	0.50	U	0.50	0.38	ug/L			05/03/19 13:50	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			05/03/19 13:50	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			05/03/19 13:50	1
Chloroethane	0.50	U	0.50	0.18	ug/L			05/03/19 13:50	1
Chloroform	**0.71**		0.50	0.24	ug/L			05/03/19 13:50	1
Chloromethane	0.50	U	0.50	0.20	ug/L			05/03/19 13:50	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/03/19 13:50	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			05/03/19 13:50	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/03/19 13:50	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			05/03/19 13:50	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			05/03/19 13:50	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			05/03/19 13:50	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			05/03/19 13:50	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			05/03/19 13:50	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/03/19 13:50	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			05/03/19 13:50	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			05/03/19 13:50	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/03/19 13:50	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/03/19 13:50	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			05/03/19 13:50	1

Client Sample ID: 41034-001

Date Collected: 05/01/19 13:15
Date Received: 05/02/19 09:15

Lab Sample ID: 160-33988-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			05/03/19 13:50	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/03/19 13:50	1
Styrene	0.50	U	0.50	0.21	ug/L			05/03/19 13:50	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/03/19 13:50	1
Tetrachloroethene	**9.9**		0.50	0.19	ug/L			05/03/19 13:50	1
Toluene	0.50	U	0.50	0.19	ug/L			05/03/19 13:50	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/03/19 13:50	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/03/19 13:50	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			05/03/19 13:50	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			05/03/19 13:50	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/03/19 13:50	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			05/03/19 13:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*05/03/19 13:50*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*05/03/19 13:50*	*1*

Client Sample ID: 41034-002

Date Collected: 05/01/19 13:18
Date Received: 05/02/19 09:15

Lab Sample ID: 160-33988-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			05/03/19 14:13	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			05/03/19 14:13	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			05/03/19 14:13	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/03/19 14:13	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			05/03/19 14:13	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			05/03/19 14:13	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			05/03/19 14:13	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			05/03/19 14:13	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			05/03/19 14:13	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			05/03/19 14:13	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			05/03/19 14:13	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			05/03/19 14:13	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			05/03/19 14:13	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			05/03/19 14:13	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			05/03/19 14:13	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			05/03/19 14:13	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			05/03/19 14:13	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			05/03/19 14:13	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			05/03/19 14:13	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			05/03/19 14:13	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			05/03/19 14:13	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			05/03/19 14:13	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			05/03/19 14:13	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/03/19 14:13	1
Benzene	0.50	U	0.50	0.10	ug/L			05/03/19 14:13	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			05/03/19 14:13	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			05/03/19 14:13	1

Client Sample ID: 41034-002

Date Collected: 05/01/19 13:18
Date Received: 05/02/19 09:15

Lab Sample ID: 160-33988-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			05/03/19 14:13	1
Bromoform	0.50	U	0.50	0.25	ug/L			05/03/19 14:13	1
Bromomethane	0.50	U	0.50	0.38	ug/L			05/03/19 14:13	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			05/03/19 14:13	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			05/03/19 14:13	1
Chloroethane	0.50	U	0.50	0.18	ug/L			05/03/19 14:13	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/03/19 14:13	1
Chloromethane	0.50	U	0.50	0.20	ug/L			05/03/19 14:13	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/03/19 14:13	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			05/03/19 14:13	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/03/19 14:13	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			05/03/19 14:13	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			05/03/19 14:13	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			05/03/19 14:13	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			05/03/19 14:13	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			05/03/19 14:13	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/03/19 14:13	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			05/03/19 14:13	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			05/03/19 14:13	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/03/19 14:13	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/03/19 14:13	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			05/03/19 14:13	1
o-Xylene	0.50	U	0.50	0.29	ug/L			05/03/19 14:13	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/03/19 14:13	1
Styrene	0.50	U	0.50	0.21	ug/L			05/03/19 14:13	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/03/19 14:13	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			05/03/19 14:13	1
Toluene	0.50	U	0.50	0.19	ug/L			05/03/19 14:13	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/03/19 14:13	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/03/19 14:13	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			05/03/19 14:13	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			05/03/19 14:13	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/03/19 14:13	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			05/03/19 14:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*113*		*70 - 130*		*05/03/19 14:13*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*05/03/19 14:13*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/03/19 13:58	05/07/19 19:34	2

Client Sample ID: 41034-003

Date Collected: 05/01/19 09:00
Date Received: 05/02/19 09:15

Lab Sample ID: 160-33988-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			05/03/19 11:55	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33988-1
SDG: 41034

Client Sample ID: 41034-003
Date Collected: 05/01/19 09:00
Date Received: 05/02/19 09:15

Lab Sample ID: 160-33988-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			05/03/19 11:55	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			05/03/19 11:55	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/03/19 11:55	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			05/03/19 11:55	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			05/03/19 11:55	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			05/03/19 11:55	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			05/03/19 11:55	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			05/03/19 11:55	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			05/03/19 11:55	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			05/03/19 11:55	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			05/03/19 11:55	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			05/03/19 11:55	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			05/03/19 11:55	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			05/03/19 11:55	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			05/03/19 11:55	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			05/03/19 11:55	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			05/03/19 11:55	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			05/03/19 11:55	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			05/03/19 11:55	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			05/03/19 11:55	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			05/03/19 11:55	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			05/03/19 11:55	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/03/19 11:55	1
Benzene	0.50	U	0.50	0.10	ug/L			05/03/19 11:55	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			05/03/19 11:55	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			05/03/19 11:55	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			05/03/19 11:55	1
Bromoform	0.50	U	0.50	0.25	ug/L			05/03/19 11:55	1
Bromomethane	0.50	U	0.50	0.38	ug/L			05/03/19 11:55	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			05/03/19 11:55	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			05/03/19 11:55	1
Chloroethane	0.50	U	0.50	0.18	ug/L			05/03/19 11:55	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/03/19 11:55	1
Chloromethane	0.50	U	0.50	0.20	ug/L			05/03/19 11:55	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/03/19 11:55	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			05/03/19 11:55	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/03/19 11:55	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			05/03/19 11:55	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			05/03/19 11:55	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			05/03/19 11:55	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			05/03/19 11:55	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			05/03/19 11:55	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/03/19 11:55	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			05/03/19 11:55	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			05/03/19 11:55	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/03/19 11:55	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/03/19 11:55	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			05/03/19 11:55	1
o-Xylene	0.50	U	0.50	0.29	ug/L			05/03/19 11:55	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33988-1
SDG: 41034

Client Sample ID: 41034-003
Date Collected: 05/01/19 09:00
Date Received: 05/02/19 09:15

Lab Sample ID: 160-33988-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/03/19 11:55	1
Styrene	0.50	U	0.50	0.21	ug/L			05/03/19 11:55	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/03/19 11:55	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			05/03/19 11:55	1
Toluene	0.50	U	0.50	0.19	ug/L			05/03/19 11:55	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/03/19 11:55	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/03/19 11:55	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			05/03/19 11:55	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			05/03/19 11:55	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/03/19 11:55	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			05/03/19 11:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*		*05/03/19 11:55*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*05/03/19 11:55*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-426568/6
Matrix: Water
Analysis Batch: 426568

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			05/03/19 11:32	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			05/03/19 11:32	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			05/03/19 11:32	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/03/19 11:32	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			05/03/19 11:32	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			05/03/19 11:32	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			05/03/19 11:32	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			05/03/19 11:32	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			05/03/19 11:32	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			05/03/19 11:32	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			05/03/19 11:32	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			05/03/19 11:32	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			05/03/19 11:32	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			05/03/19 11:32	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			05/03/19 11:32	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			05/03/19 11:32	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			05/03/19 11:32	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			05/03/19 11:32	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			05/03/19 11:32	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			05/03/19 11:32	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			05/03/19 11:32	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			05/03/19 11:32	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			05/03/19 11:32	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/03/19 11:32	1
Benzene	0.50	U	0.50	0.10	ug/L			05/03/19 11:32	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			05/03/19 11:32	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			05/03/19 11:32	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			05/03/19 11:32	1
Bromoform	0.50	U	0.50	0.25	ug/L			05/03/19 11:32	1
Bromomethane	0.50	U	0.50	0.38	ug/L			05/03/19 11:32	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			05/03/19 11:32	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			05/03/19 11:32	1
Chloroethane	0.50	U	0.50	0.18	ug/L			05/03/19 11:32	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/03/19 11:32	1
Chloromethane	0.50	U	0.50	0.20	ug/L			05/03/19 11:32	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/03/19 11:32	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			05/03/19 11:32	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/03/19 11:32	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			05/03/19 11:32	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			05/03/19 11:32	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			05/03/19 11:32	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			05/03/19 11:32	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			05/03/19 11:32	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/03/19 11:32	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			05/03/19 11:32	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			05/03/19 11:32	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/03/19 11:32	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/03/19 11:32	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-426568/6
Matrix: Water
Analysis Batch: 426568

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			05/03/19 11:32	1
o-Xylene	0.50	U	0.50	0.29	ug/L			05/03/19 11:32	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/03/19 11:32	1
Styrene	0.50	U	0.50	0.21	ug/L			05/03/19 11:32	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/03/19 11:32	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			05/03/19 11:32	1
Toluene	0.50	U	0.50	0.19	ug/L			05/03/19 11:32	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/03/19 11:32	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/03/19 11:32	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			05/03/19 11:32	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			05/03/19 11:32	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/03/19 11:32	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			05/03/19 11:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*		*05/03/19 11:32*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*05/03/19 11:32*	*1*

Lab Sample ID: LCS 160-426568/4
Matrix: Water
Analysis Batch: 426568

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.8		ug/L		108	70 - 130
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.96		ug/L		100	70 - 130
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	70 - 130
1,1-Dichloroethane	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloroethene	10.0	10.9		ug/L		109	70 - 130
1,1-Dichloropropene	10.0	10.6		ug/L		106	70 - 130
1,2,3-Trichlorobenzene	10.0	11.4		ug/L		114	70 - 130
1,2,3-Trichloropropane	10.0	9.30		ug/L		93	70 - 130
1,2,4-Trichlorobenzene	10.0	11.4		ug/L		114	70 - 130
1,2,4-Trimethylbenzene	10.0	11.7		ug/L		117	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	9.83		ug/L		98	70 - 130
1,2-Dibromoethane	10.0	10.5		ug/L		105	70 - 130
1,2-Dichlorobenzene	10.0	11.1		ug/L		111	70 - 130
1,2-Dichloroethane	10.0	9.13		ug/L		91	70 - 130
1,2-Dichloropropane	10.0	10.0		ug/L		100	70 - 130
1,3,5-Trimethylbenzene	10.0	11.4		ug/L		114	70 - 130
1,3-Dichlorobenzene	10.0	11.2		ug/L		112	70 - 130
1,3-Dichloropropane	10.0	10.1		ug/L		101	70 - 130
1,4-Dichlorobenzene	10.0	11.1		ug/L		111	70 - 130
2,2-Dichloropropane	10.0	9.84		ug/L		98	70 - 130
2-Chlorotoluene	10.0	10.5		ug/L		105	70 - 130
4-Chlorotoluene	10.0	11.0		ug/L		110	70 - 130
4-Isopropyltoluene	10.0	11.5		ug/L		115	70 - 130
Benzene	10.0	10.7		ug/L		107	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-426568/4
Matrix: Water
Analysis Batch: 426568

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	11.0		ug/L		110	70 - 130
Bromochloromethane	10.0	10.5		ug/L		105	70 - 130
Bromodichloromethane	10.0	10.1		ug/L		101	70 - 130
Bromoform	10.0	11.1		ug/L		111	70 - 130
Bromomethane	10.0	9.42		ug/L		94	70 - 130
Carbon tetrachloride	10.0	10.7		ug/L		107	70 - 130
Chlorobenzene	10.0	10.9		ug/L		109	70 - 130
Chloroethane	10.0	9.90		ug/L		99	70 - 130
Chloroform	10.0	10.3		ug/L		103	70 - 130
Chloromethane	10.0	10.9		ug/L		109	70 - 130
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
cis-1,3-Dichloropropene	10.0	10.3		ug/L		103	70 - 130
Dibromochloromethane	10.0	11.2		ug/L		112	70 - 130
Dibromomethane	10.0	9.53		ug/L		95	70 - 130
Dichlorodifluoromethane	10.0	9.75		ug/L		98	70 - 130
Ethylbenzene	10.0	11.2		ug/L		112	70 - 130
Hexachlorobutadiene	10.0	11.4		ug/L		114	70 - 130
Isopropylbenzene	10.0	11.5		ug/L		115	70 - 130
Methylene Chloride	10.0	10.8		ug/L		108	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.76		ug/L		98	70 - 130
m-Xylene & p-Xylene	20.0	22.5		ug/L		112	70 - 130
Naphthalene	10.0	11.1		ug/L		111	70 - 130
n-Butylbenzene	10.0	11.8		ug/L		118	70 - 130
N-Propylbenzene	10.0	11.8		ug/L		118	70 - 130
o-Xylene	10.0	10.9		ug/L		109	70 - 130
sec-Butylbenzene	10.0	11.7		ug/L		117	70 - 130
Styrene	10.0	11.5		ug/L		115	70 - 130
tert-Butylbenzene	10.0	11.5		ug/L		115	70 - 130
Tetrachloroethene	10.0	11.3		ug/L		113	70 - 130
Toluene	10.0	11.2		ug/L		112	70 - 130
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	70 - 130
trans-1,3-Dichloropropene	10.0	10.9		ug/L		109	70 - 130
Trichloroethene	10.0	10.3		ug/L		103	70 - 130
Trichlorofluoromethane	10.0	11.1		ug/L		111	70 - 130
Vinyl chloride	10.0	10.5		ug/L		105	70 - 130
Xylenes, Total	30.0	33.4		ug/L		111	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-426601/1-A
Matrix: Water
Analysis Batch: 427671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426601

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/03/19 13:58	05/07/19 19:26	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-426601/2-A
Matrix: Water
Analysis Batch: 427671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426601

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	200	217		ug/L		108	80 - 120

Lab Sample ID: 160-33988-2 MS
Matrix: Water
Analysis Batch: 427671

Client Sample ID: 41034-002
Prep Type: Total/NA
Prep Batch: 426601

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	2.0	U	200	215		ug/L		107	75 - 125

Lab Sample ID: 160-33988-2 MSD
Matrix: Water
Analysis Batch: 427671

Client Sample ID: 41034-002
Prep Type: Total/NA
Prep Batch: 426601

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	216		ug/L		108	75 - 125	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33988-1
SDG: 41034

GC/MS VOA

Analysis Batch: 426568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33988-1	41034-001	Total/NA	Water	524.2	
160-33988-2	41034-002	Total/NA	Water	524.2	
160-33988-3	41034-003	Total/NA	Water	524.2	
MB 160-426568/6	Method Blank	Total/NA	Water	524.2	
LCS 160-426568/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 426601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33988-2	41034-002	Total/NA	Water	3010A	
MB 160-426601/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-426601/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-33988-2 MS	41034-002	Total/NA	Water	3010A	
160-33988-2 MSD	41034-002	Total/NA	Water	3010A	

Analysis Batch: 427671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-33988-2	41034-002	Total/NA	Water	6020A	426601
MB 160-426601/1-A	Method Blank	Total/NA	Water	6020A	426601
LCS 160-426601/2-A	Lab Control Sample	Total/NA	Water	6020A	426601
160-33988-2 MS	41034-002	Total/NA	Water	6020A	426601
160-33988-2 MSD	41034-002	Total/NA	Water	6020A	426601

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-33988-1
SDG: 41034

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-33988-1	41034-001	111	99
160-33988-2	41034-002	113	98
160-33988-3	41034-003	110	98
LCS 160-426568/4	Lab Control Sample	108	102
MB 160-426568/6	Method Blank	110	100

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4
BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-34190-1
Laboratory Sample Delivery Group: 41079
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
5/21/2019 3:47:23 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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QC Association Summary 17
Surrogate Summary 18

Job ID: 160-34190-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-34190-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 5/16/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.0° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41079-001 (160-34190-1) and 41079-002 (160-34190-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 05/17/2019.

Job ID: 160-34190-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-428894:
The Continuing Calibration Verification (CCVIS) recovered outside of upper control limits for the following target analytes: 1,2,3-Trichloropropane, Vinyl chloride, Chloromethane, Dichlorodifluoromethane, n-Butylbenzene, and N-Propylbenzene. Sample 160-34193-1 had a quantifiable detection for Dichlorodifluoromethane above the reporting limit. Dichlorodifluoromethane is not part of the client's data quality objectives; therefore, the results were reported. The remaining samples in batch 160-428894 were non-detect for the analytes: 41079-001 (160-34190-1), 41079-002 (160-34190-2), and (CCVIS 160-428894/4).

The Laboratory Control Sample (LCS) recovered outside of upper control limits for the following target analytes: 1,2,3-Trichloropropane, Chloromethane, and Dichlorodifluoromethane. Sample 160-34193-1 had a quantifiable hit for Dichlorodifluoromethane above the reporting limit. Dichlorodifluoromethane is not part of the client's data quality objectives; therefore, the results were reported. The remaining samples in batch 160-428894 were non-detect for the analytes: 41079-001 (160-34190-1), 41079-002 (160-34190-2), and (LCS 160-428894/5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 41079-002 (160-34190-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 05/17/2019 and analyzed on 05/20/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41079

Requires EDD Y

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext: 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: JMiH	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD Use TB from CoC# 41077

Type UID	Smp	Coll	Sample Information: Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information: Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	5/14/19	1415	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	5/14/19	1418	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	5/14/19	1418	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0			W	Trip Blank	40 ML	SC	3	HCL					X					

160-34190 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Mih 5/15/19	Print	Print
Signature 1200	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Nicholas Press 5-16-19	Print	Print
Signature 0915	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☒ Disposal by Lab
- ☐ Archive For ____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-34190-1
SDG Number: 41079

Login Number: 34190
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34190-1
SDG: 41079

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
B	The reported value is less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34190-1
SDG: 41079

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34190-1
SDG: 41079

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Assest ID
160-34190-1	41079-001	Water	05/14/19 14:15	05/16/19 09:15	
160-34190-2	41079-002	Water	05/14/19 14:18	05/16/19 09:15	

Client Sample ID: 41079-001

Date Collected: 05/14/19 14:15
Date Received: 05/16/19 09:15

Lab Sample ID: 160-34190-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			05/17/19 13:01	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			05/17/19 13:01	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			05/17/19 13:01	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/17/19 13:01	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			05/17/19 13:01	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			05/17/19 13:01	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			05/17/19 13:01	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			05/17/19 13:01	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			05/17/19 13:01	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			05/17/19 13:01	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			05/17/19 13:01	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			05/17/19 13:01	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			05/17/19 13:01	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			05/17/19 13:01	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			05/17/19 13:01	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			05/17/19 13:01	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			05/17/19 13:01	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			05/17/19 13:01	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			05/17/19 13:01	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			05/17/19 13:01	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			05/17/19 13:01	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			05/17/19 13:01	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			05/17/19 13:01	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/17/19 13:01	1
Benzene	0.50	U	0.50	0.10	ug/L			05/17/19 13:01	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			05/17/19 13:01	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			05/17/19 13:01	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			05/17/19 13:01	1
Bromoform	0.50	U	0.50	0.25	ug/L			05/17/19 13:01	1
Bromomethane	0.50	U	0.50	0.38	ug/L			05/17/19 13:01	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			05/17/19 13:01	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			05/17/19 13:01	1
Chloroethane	0.50	U	0.50	0.18	ug/L			05/17/19 13:01	1
Chloroform	**0.76**		0.50	0.24	ug/L			05/17/19 13:01	1
Chloromethane	0.50	U	0.50	0.20	ug/L			05/17/19 13:01	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/17/19 13:01	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			05/17/19 13:01	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/17/19 13:01	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			05/17/19 13:01	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			05/17/19 13:01	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			05/17/19 13:01	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			05/17/19 13:01	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			05/17/19 13:01	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/17/19 13:01	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			05/17/19 13:01	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			05/17/19 13:01	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/17/19 13:01	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/17/19 13:01	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			05/17/19 13:01	1

Client Sample ID: 41079-001

Lab Sample ID: 160-34190-1

Date Collected: 05/14/19 14:15

Matrix: Water

Date Received: 05/16/19 09:15

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			05/17/19 13:01	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/17/19 13:01	1
Styrene	0.50	U	0.50	0.21	ug/L			05/17/19 13:01	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/17/19 13:01	1
Tetrachloroethene	**10**		0.50	0.19	ug/L			05/17/19 13:01	1
Toluene	0.50	U	0.50	0.19	ug/L			05/17/19 13:01	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/17/19 13:01	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/17/19 13:01	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			05/17/19 13:01	1
Trichlorofluoromethane	**0.69**		0.50	0.16	ug/L			05/17/19 13:01	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/17/19 13:01	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			05/17/19 13:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*		*05/17/19 13:01*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*05/17/19 13:01*	*1*

Client Sample ID: 41079-002

Lab Sample ID: 160-34190-2

Date Collected: 05/14/19 14:18

Matrix: Water

Date Received: 05/16/19 09:15

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			05/17/19 13:24	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			05/17/19 13:24	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			05/17/19 13:24	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/17/19 13:24	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			05/17/19 13:24	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			05/17/19 13:24	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			05/17/19 13:24	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			05/17/19 13:24	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			05/17/19 13:24	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			05/17/19 13:24	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			05/17/19 13:24	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			05/17/19 13:24	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			05/17/19 13:24	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			05/17/19 13:24	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			05/17/19 13:24	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			05/17/19 13:24	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			05/17/19 13:24	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			05/17/19 13:24	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			05/17/19 13:24	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			05/17/19 13:24	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			05/17/19 13:24	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			05/17/19 13:24	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			05/17/19 13:24	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/17/19 13:24	1
Benzene	0.50	U	0.50	0.10	ug/L			05/17/19 13:24	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			05/17/19 13:24	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			05/17/19 13:24	1

Client Sample ID: 41079-002

Date Collected: 05/14/19 14:18
Date Received: 05/16/19 09:15

Lab Sample ID: 160-34190-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			05/17/19 13:24	1
Bromoform	0.50	U	0.50	0.25	ug/L			05/17/19 13:24	1
Bromomethane	0.50	U	0.50	0.38	ug/L			05/17/19 13:24	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			05/17/19 13:24	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			05/17/19 13:24	1
Chloroethane	0.50	U	0.50	0.18	ug/L			05/17/19 13:24	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/17/19 13:24	1
Chloromethane	0.50	U	0.50	0.20	ug/L			05/17/19 13:24	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/17/19 13:24	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			05/17/19 13:24	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/17/19 13:24	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			05/17/19 13:24	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			05/17/19 13:24	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			05/17/19 13:24	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			05/17/19 13:24	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			05/17/19 13:24	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/17/19 13:24	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			05/17/19 13:24	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			05/17/19 13:24	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/17/19 13:24	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/17/19 13:24	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			05/17/19 13:24	1
o-Xylene	0.50	U	0.50	0.29	ug/L			05/17/19 13:24	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/17/19 13:24	1
Styrene	0.50	U	0.50	0.21	ug/L			05/17/19 13:24	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/17/19 13:24	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			05/17/19 13:24	1
Toluene	0.50	U	0.50	0.19	ug/L			05/17/19 13:24	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/17/19 13:24	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/17/19 13:24	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			05/17/19 13:24	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			05/17/19 13:24	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/17/19 13:24	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			05/17/19 13:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*		*05/17/19 13:24*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*05/17/19 13:24*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	**0.94**	**B**	2.0	0.90	ug/L		05/17/19 15:16	05/20/19 21:55	2

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34190-1
SDG: 41079

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-428894/7
Matrix: Water
Analysis Batch: 428894

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			05/17/19 12:14	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			05/17/19 12:14	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			05/17/19 12:14	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/17/19 12:14	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			05/17/19 12:14	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			05/17/19 12:14	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			05/17/19 12:14	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.58	ug/L			05/17/19 12:14	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			05/17/19 12:14	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.54	ug/L			05/17/19 12:14	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			05/17/19 12:14	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.62	ug/L			05/17/19 12:14	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			05/17/19 12:14	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			05/17/19 12:14	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			05/17/19 12:14	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			05/17/19 12:14	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			05/17/19 12:14	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			05/17/19 12:14	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			05/17/19 12:14	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			05/17/19 12:14	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			05/17/19 12:14	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			05/17/19 12:14	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			05/17/19 12:14	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/17/19 12:14	1
Benzene	0.50	U	0.50	0.10	ug/L			05/17/19 12:14	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			05/17/19 12:14	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			05/17/19 12:14	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			05/17/19 12:14	1
Bromoform	0.50	U	0.50	0.25	ug/L			05/17/19 12:14	1
Bromomethane	0.50	U	0.50	0.38	ug/L			05/17/19 12:14	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			05/17/19 12:14	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			05/17/19 12:14	1
Chloroethane	0.50	U	0.50	0.18	ug/L			05/17/19 12:14	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/17/19 12:14	1
Chloromethane	0.50	U	0.50	0.20	ug/L			05/17/19 12:14	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/17/19 12:14	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			05/17/19 12:14	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/17/19 12:14	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			05/17/19 12:14	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			05/17/19 12:14	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			05/17/19 12:14	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			05/17/19 12:14	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			05/17/19 12:14	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/17/19 12:14	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			05/17/19 12:14	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			05/17/19 12:14	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/17/19 12:14	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/17/19 12:14	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-428894/7
Matrix: Water
Analysis Batch: 428894

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			05/17/19 12:14	1
o-Xylene	0.50	U	0.50	0.29	ug/L			05/17/19 12:14	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/17/19 12:14	1
Styrene	0.50	U	0.50	0.21	ug/L			05/17/19 12:14	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/17/19 12:14	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			05/17/19 12:14	1
Toluene	0.50	U	0.50	0.19	ug/L			05/17/19 12:14	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			05/17/19 12:14	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/17/19 12:14	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			05/17/19 12:14	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			05/17/19 12:14	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/17/19 12:14	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			05/17/19 12:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*107*		*70 - 130*		*05/17/19 12:14*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*05/17/19 12:14*	*1*

Lab Sample ID: LCS 160-428894/5
Matrix: Water
Analysis Batch: 428894

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,1-Trichloroethane	10.0	9.90		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	10.0	11.0		ug/L		110	70 - 130
1,1,2-Trichloroethane	10.0	10.9		ug/L		109	70 - 130
1,1-Dichloroethane	10.0	10.4		ug/L		104	70 - 130
1,1-Dichloroethene	10.0	10.7		ug/L		107	70 - 130
1,1-Dichloropropene	10.0	10.6		ug/L		106	70 - 130
1,2,3-Trichlorobenzene	10.0	12.3		ug/L		123	70 - 130
1,2,3-Trichloropropane	10.0	14.1		ug/L		141	70 - 130
1,2,4-Trichlorobenzene	10.0	11.8		ug/L		118	70 - 130
1,2,4-Trimethylbenzene	10.0	11.8		ug/L		118	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	11.8		ug/L		118	70 - 130
1,2-Dibromoethane	10.0	10.7		ug/L		107	70 - 130
1,2-Dichlorobenzene	10.0	11.6		ug/L		116	70 - 130
1,2-Dichloroethane	10.0	9.69		ug/L		97	70 - 130
1,2-Dichloropropane	10.0	10.3		ug/L		103	70 - 130
1,3,5-Trimethylbenzene	10.0	11.9		ug/L		119	70 - 130
1,3-Dichlorobenzene	10.0	11.4		ug/L		114	70 - 130
1,3-Dichloropropane	10.0	10.3		ug/L		103	70 - 130
1,4-Dichlorobenzene	10.0	11.1		ug/L		111	70 - 130
2,2-Dichloropropane	10.0	9.52		ug/L		95	70 - 130
2-Chlorotoluene	10.0	10.4		ug/L		104	70 - 130
4-Chlorotoluene	10.0	11.8		ug/L		118	70 - 130
4-Isopropyltoluene	10.0	12.2		ug/L		122	70 - 130
Benzene	10.0	10.7		ug/L		107	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-428894/5
Matrix: Water
Analysis Batch: 428894

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.8		ug/L		108	70 - 130
Bromochloromethane	10.0	9.90		ug/L		99	70 - 130
Bromodichloromethane	10.0	9.97		ug/L		100	70 - 130
Bromoform	10.0	11.5		ug/L		115	70 - 130
Bromomethane	10.0	10.1		ug/L		101	70 - 130
Carbon tetrachloride	10.0	10.2		ug/L		102	70 - 130
Chlorobenzene	10.0	10.6		ug/L		106	70 - 130
Chloroethane	10.0	10.2		ug/L		102	70 - 130
Chloroform	10.0	10.0		ug/L		100	70 - 130
Chloromethane	10.0	14.1		ug/L		141	70 - 130
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	70 - 130
cis-1,3-Dichloropropene	10.0	10.9		ug/L		109	70 - 130
Dibromochloromethane	10.0	11.1		ug/L		111	70 - 130
Dibromomethane	10.0	9.80		ug/L		98	70 - 130
Dichlorodifluoromethane	10.0	18.1		ug/L		181	70 - 130
Ethylbenzene	10.0	11.2		ug/L		112	70 - 130
Hexachlorobutadiene	10.0	10.9		ug/L		109	70 - 130
Isopropylbenzene	10.0	11.1		ug/L		111	70 - 130
Methylene Chloride	10.0	10.6		ug/L		106	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	8.14		ug/L		81	70 - 130
m-Xylene & p-Xylene	10.0	11.0		ug/L		110	70 - 130
Naphthalene	10.0	12.6		ug/L		126	70 - 130
n-Butylbenzene	10.0	12.9		ug/L		129	70 - 130
N-Propylbenzene	10.0	12.7		ug/L		127	70 - 130
o-Xylene	10.0	10.5		ug/L		105	70 - 130
sec-Butylbenzene	10.0	12.3		ug/L		123	70 - 130
Styrene	10.0	11.1		ug/L		111	70 - 130
tert-Butylbenzene	10.0	11.9		ug/L		119	70 - 130
Tetrachloroethene	10.0	10.2		ug/L		102	70 - 130
Toluene	10.0	11.0		ug/L		110	70 - 130
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	70 - 130
trans-1,3-Dichloropropene	10.0	12.3		ug/L		123	70 - 130
Trichloroethene	10.0	9.91		ug/L		99	70 - 130
Trichlorofluoromethane	10.0	10.4		ug/L		104	70 - 130
Vinyl chloride	10.0	12.1		ug/L		121	70 - 130
Xylenes, Total	20.0	21.5		ug/L		108	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-428936/1-A
Matrix: Water
Analysis Batch: 429213

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 428936

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/17/19 15:16	05/20/19 21:42	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-428936/2-A
Matrix: Water
Analysis Batch: 429213

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 428936

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	209		ug/L		105	80 - 120		

Lab Sample ID: 160-34190-2 MS
Matrix: Water
Analysis Batch: 429213

Client Sample ID: 41079-002
Prep Type: Total/NA
Prep Batch: 428936

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	0.94	B	200	200		ug/L		100	75 - 125		

Lab Sample ID: 160-34190-2 MSD
Matrix: Water
Analysis Batch: 429213

Client Sample ID: 41079-002
Prep Type: Total/NA
Prep Batch: 428936

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	0.94	B	200	199		ug/L		99	75 - 125	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34190-1
SDG: 41079

GC/MS VOA

Analysis Batch: 428894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34190-1	41079-001	Total/NA	Water	524.2	
160-34190-2	41079-002	Total/NA	Water	524.2	
MB 160-428894/7	Method Blank	Total/NA	Water	524.2	
LCS 160-428894/5	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 428936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34190-2	41079-002	Total/NA	Water	3010A	
MB 160-428936/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-428936/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-34190-2 MS	41079-002	Total/NA	Water	3010A	
160-34190-2 MSD	41079-002	Total/NA	Water	3010A	

Analysis Batch: 429213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34190-2	41079-002	Total/NA	Water	6020A	428936
MB 160-428936/1-A	Method Blank	Total/NA	Water	6020A	428936
LCS 160-428936/2-A	Lab Control Sample	Total/NA	Water	6020A	428936
160-34190-2 MS	41079-002	Total/NA	Water	6020A	428936
160-34190-2 MSD	41079-002	Total/NA	Water	6020A	428936

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34190-1
SDG: 41079

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCZ (70-130)	BFB (70-130)
160-34190-1	41079-001	109	102
160-34190-2	41079-002	109	103
LCS 160-428894/5	Lab Control Sample	108	103
MB 160-428894/7	Method Blank	107	102

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-34740-1
Laboratory Sample Delivery Group: 41124
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
7/11/2019 9:50:10 AM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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QC Association Summary 19
Surrogate Summary 20

Job ID: 160-34740-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-34740-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 6/27/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.1° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41124-001 (160-34740-1), 41124-002 (160-34740-2) and 41124-003 (160-34740-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 07/03/2019.

Job ID: 160-34740-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41124-002 (160-34740-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 07/02/2019 and analyzed on 07/06/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

The low level continuing calibration verification (CCVL) associated with batchanalytical batch 160-434302 recovered above the upper control limit for Thallium. The samples associated with this CCVL were below the reporting limit for the affected analytes; therefore, the data was reported: (CCVL 160-434302/77).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41124

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Milhan	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD Sample Parts now Located @ Free Bit (095-316 and 095-317)

Type UID	Smp.	Coll.	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	6/25/19	1433	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	1435	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	1435	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0	6/25/19	13-00	W	Trip Blank	40 ML	SC	3	HCL					X					

160-34740 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milhan 6/26/19 1400	Print	Print
Signature	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Nicholas Press 6-27-19	Print	Print
Signature 0900	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☐ Archive For _____ Months
- ☑ Disposal by Lab

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☑ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-34740-1
SDG Number: 41124

Login Number: 34740
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34740-1
SDG: 41124

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
B	The reported value is less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34740-1
SDG: 41124

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34740-1
SDG: 41124

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-34740-1	41124-001	Water	06/25/19 14:33	06/27/19 09:00	
160-34740-2	41124-002	Water	06/25/19 14:35	06/27/19 09:00	
160-34740-3	41124-003	Water	06/25/19 13:00	06/27/19 09:00	

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34740-1
SDG: 41124

Client Sample ID: 41124-001
Date Collected: 06/25/19 14:33
Date Received: 06/27/19 09:00

Lab Sample ID: 160-34740-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/03/19 16:42	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/03/19 16:42	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/03/19 16:42	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/03/19 16:42	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/03/19 16:42	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/03/19 16:42	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/03/19 16:42	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/03/19 16:42	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/03/19 16:42	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/03/19 16:42	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/03/19 16:42	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/03/19 16:42	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/03/19 16:42	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/03/19 16:42	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/03/19 16:42	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/03/19 16:42	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/03/19 16:42	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/03/19 16:42	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/03/19 16:42	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/03/19 16:42	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/03/19 16:42	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/03/19 16:42	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/03/19 16:42	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/03/19 16:42	1
Benzene	0.50	U	0.50	0.10	ug/L			07/03/19 16:42	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/03/19 16:42	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/03/19 16:42	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/03/19 16:42	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/03/19 16:42	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/03/19 16:42	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/03/19 16:42	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/03/19 16:42	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/03/19 16:42	1
Chloroform	**0.51**		0.50	0.24	ug/L			07/03/19 16:42	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/03/19 16:42	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/03/19 16:42	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/03/19 16:42	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/03/19 16:42	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/03/19 16:42	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/03/19 16:42	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/03/19 16:42	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/03/19 16:42	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/03/19 16:42	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/03/19 16:42	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/03/19 16:42	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/03/19 16:42	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/03/19 16:42	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/03/19 16:42	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/03/19 16:42	1

Client Sample ID: 41124-001

Lab Sample ID: 160-34740-1

Date Collected: 06/25/19 14:33

Matrix: Water

Date Received: 06/27/19 09:00

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			07/03/19 16:42	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/03/19 16:42	1
Styrene	0.50	U	0.50	0.21	ug/L			07/03/19 16:42	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/03/19 16:42	1
Tetrachloroethene	**3.2**		0.50	0.19	ug/L			07/03/19 16:42	1
Toluene	0.50	U	0.50	0.19	ug/L			07/03/19 16:42	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/03/19 16:42	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/03/19 16:42	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/03/19 16:42	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			07/03/19 16:42	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/03/19 16:42	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/03/19 16:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*07/03/19 16:42*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*07/03/19 16:42*	*1*

Client Sample ID: 41124-002

Lab Sample ID: 160-34740-2

Date Collected: 06/25/19 14:35

Matrix: Water

Date Received: 06/27/19 09:00

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/03/19 16:19	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/03/19 16:19	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/03/19 16:19	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/03/19 16:19	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/03/19 16:19	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/03/19 16:19	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/03/19 16:19	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/03/19 16:19	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/03/19 16:19	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/03/19 16:19	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/03/19 16:19	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/03/19 16:19	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/03/19 16:19	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/03/19 16:19	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/03/19 16:19	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/03/19 16:19	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/03/19 16:19	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/03/19 16:19	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/03/19 16:19	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/03/19 16:19	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/03/19 16:19	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/03/19 16:19	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/03/19 16:19	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/03/19 16:19	1
Benzene	0.50	U	0.50	0.10	ug/L			07/03/19 16:19	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/03/19 16:19	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/03/19 16:19	1

Client Sample ID: 41124-002

Date Collected: 06/25/19 14:35
Date Received: 06/27/19 09:00

Lab Sample ID: 160-34740-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/03/19 16:19	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/03/19 16:19	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/03/19 16:19	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/03/19 16:19	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/03/19 16:19	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/03/19 16:19	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/03/19 16:19	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/03/19 16:19	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/03/19 16:19	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/03/19 16:19	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/03/19 16:19	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/03/19 16:19	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/03/19 16:19	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/03/19 16:19	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/03/19 16:19	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/03/19 16:19	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/03/19 16:19	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/03/19 16:19	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/03/19 16:19	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/03/19 16:19	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/03/19 16:19	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/03/19 16:19	1
o-Xylene	0.50	U	0.50	0.29	ug/L			07/03/19 16:19	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/03/19 16:19	1
Styrene	0.50	U	0.50	0.21	ug/L			07/03/19 16:19	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/03/19 16:19	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			07/03/19 16:19	1
Toluene	0.50	U	0.50	0.19	ug/L			07/03/19 16:19	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/03/19 16:19	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/03/19 16:19	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/03/19 16:19	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			07/03/19 16:19	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/03/19 16:19	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/03/19 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*07/03/19 16:19*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*07/03/19 16:19*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	1.8	B	2.0	0.90	ug/L		07/02/19 12:59	07/06/19 23:51	2

Client Sample ID: 41124-003

Date Collected: 06/25/19 13:00
Date Received: 06/27/19 09:00

Lab Sample ID: 160-34740-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/03/19 15:55	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34740-1
SDG: 41124

Client Sample ID: 41124-003
Date Collected: 06/25/19 13:00
Date Received: 06/27/19 09:00

Lab Sample ID: 160-34740-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/03/19 15:55	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/03/19 15:55	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/03/19 15:55	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/03/19 15:55	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/03/19 15:55	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/03/19 15:55	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/03/19 15:55	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/03/19 15:55	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/03/19 15:55	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/03/19 15:55	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/03/19 15:55	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/03/19 15:55	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/03/19 15:55	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/03/19 15:55	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/03/19 15:55	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/03/19 15:55	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/03/19 15:55	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/03/19 15:55	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/03/19 15:55	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/03/19 15:55	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/03/19 15:55	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/03/19 15:55	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/03/19 15:55	1
Benzene	0.50	U	0.50	0.10	ug/L			07/03/19 15:55	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/03/19 15:55	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/03/19 15:55	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/03/19 15:55	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/03/19 15:55	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/03/19 15:55	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/03/19 15:55	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/03/19 15:55	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/03/19 15:55	1
Chloroform	**1.1**		0.50	0.24	ug/L			07/03/19 15:55	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/03/19 15:55	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/03/19 15:55	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/03/19 15:55	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/03/19 15:55	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/03/19 15:55	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/03/19 15:55	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/03/19 15:55	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/03/19 15:55	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/03/19 15:55	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/03/19 15:55	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/03/19 15:55	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/03/19 15:55	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/03/19 15:55	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/03/19 15:55	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/03/19 15:55	1
o-Xylene	0.50	U	0.50	0.29	ug/L			07/03/19 15:55	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34740-1
SDG: 41124

Client Sample ID: 41124-003
Date Collected: 06/25/19 13:00
Date Received: 06/27/19 09:00

Lab Sample ID: 160-34740-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/03/19 15:55	1
Styrene	0.50	U	0.50	0.21	ug/L			07/03/19 15:55	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/03/19 15:55	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			07/03/19 15:55	1
Toluene	0.50	U	0.50	0.19	ug/L			07/03/19 15:55	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/03/19 15:55	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/03/19 15:55	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/03/19 15:55	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			07/03/19 15:55	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/03/19 15:55	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/03/19 15:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*		*07/03/19 15:55*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*07/03/19 15:55*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-433663/6
Matrix: Water
Analysis Batch: 433663

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/03/19 15:31	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/03/19 15:31	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/03/19 15:31	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/03/19 15:31	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/03/19 15:31	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/03/19 15:31	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/03/19 15:31	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/03/19 15:31	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/03/19 15:31	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/03/19 15:31	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/03/19 15:31	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/03/19 15:31	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/03/19 15:31	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/03/19 15:31	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/03/19 15:31	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/03/19 15:31	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/03/19 15:31	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/03/19 15:31	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/03/19 15:31	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/03/19 15:31	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/03/19 15:31	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/03/19 15:31	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/03/19 15:31	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/03/19 15:31	1
Benzene	0.50	U	0.50	0.10	ug/L			07/03/19 15:31	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/03/19 15:31	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/03/19 15:31	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/03/19 15:31	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/03/19 15:31	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/03/19 15:31	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/03/19 15:31	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/03/19 15:31	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/03/19 15:31	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/03/19 15:31	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/03/19 15:31	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/03/19 15:31	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/03/19 15:31	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/03/19 15:31	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/03/19 15:31	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/03/19 15:31	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/03/19 15:31	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/03/19 15:31	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/03/19 15:31	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/03/19 15:31	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/03/19 15:31	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/03/19 15:31	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/03/19 15:31	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/03/19 15:31	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-433663/6
Matrix: Water
Analysis Batch: 433663

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/03/19 15:31	1
o-Xylene	0.50	U	0.50	0.29	ug/L			07/03/19 15:31	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/03/19 15:31	1
Styrene	0.50	U	0.50	0.21	ug/L			07/03/19 15:31	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/03/19 15:31	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			07/03/19 15:31	1
Toluene	0.50	U	0.50	0.19	ug/L			07/03/19 15:31	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/03/19 15:31	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/03/19 15:31	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/03/19 15:31	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			07/03/19 15:31	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/03/19 15:31	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/03/19 15:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*		*07/03/19 15:31*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*07/03/19 15:31*	*1*

Lab Sample ID: LCS 160-433663/4
Matrix: Water
Analysis Batch: 433663

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.4		ug/L		104	70 - 130
1,1,1-Trichloroethane	10.0	10.7		ug/L		107	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.1		ug/L		101	70 - 130
1,1,2-Trichloroethane	10.0	9.84		ug/L		98	70 - 130
1,1-Dichloroethane	10.0	10.9		ug/L		109	70 - 130
1,1-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
1,1-Dichloropropene	10.0	10.5		ug/L		105	70 - 130
1,2,3-Trichlorobenzene	10.0	9.67		ug/L		97	70 - 130
1,2,3-Trichloropropane	10.0	9.53		ug/L		95	70 - 130
1,2,4-Trichlorobenzene	10.0	9.57		ug/L		96	70 - 130
1,2,4-Trimethylbenzene	10.0	10.8		ug/L		108	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	9.24		ug/L		92	70 - 130
1,2-Dibromoethane	10.0	10.0		ug/L		100	70 - 130
1,2-Dichlorobenzene	10.0	10.7		ug/L		107	70 - 130
1,2-Dichloroethane	10.0	11.3		ug/L		113	70 - 130
1,2-Dichloropropane	10.0	10.5		ug/L		105	70 - 130
1,3,5-Trimethylbenzene	10.0	10.8		ug/L		108	70 - 130
1,3-Dichlorobenzene	10.0	10.7		ug/L		107	70 - 130
1,3-Dichloropropane	10.0	9.73		ug/L		97	70 - 130
1,4-Dichlorobenzene	10.0	10.9		ug/L		109	70 - 130
2,2-Dichloropropane	10.0	10.9		ug/L		109	70 - 130
2-Chlorotoluene	10.0	11.0		ug/L		110	70 - 130
4-Chlorotoluene	10.0	10.5		ug/L		105	70 - 130
4-Isopropyltoluene	10.0	11.1		ug/L		111	70 - 130
Benzene	10.0	10.5		ug/L		105	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-433663/4
Matrix: Water
Analysis Batch: 433663

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.8		ug/L		108	70 - 130
Bromochloromethane	10.0	11.1		ug/L		111	70 - 130
Bromodichloromethane	10.0	10.7		ug/L		107	70 - 130
Bromoform	10.0	10.8		ug/L		108	70 - 130
Bromomethane	10.0	11.3		ug/L		113	70 - 130
Carbon tetrachloride	10.0	11.0		ug/L		110	70 - 130
Chlorobenzene	10.0	10.7		ug/L		107	70 - 130
Chloroethane	10.0	12.4		ug/L		124	70 - 130
Chloroform	10.0	10.8		ug/L		108	70 - 130
Chloromethane	10.0	12.2		ug/L		122	70 - 130
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 130
cis-1,3-Dichloropropene	10.0	9.81		ug/L		98	70 - 130
Dibromochloromethane	10.0	10.6		ug/L		106	70 - 130
Dibromomethane	10.0	10.7		ug/L		107	70 - 130
Dichlorodifluoromethane	10.0	9.92		ug/L		99	70 - 130
Ethylbenzene	10.0	10.7		ug/L		107	70 - 130
Hexachlorobutadiene	10.0	9.93		ug/L		99	70 - 130
Isopropylbenzene	10.0	10.9		ug/L		109	70 - 130
Methylene Chloride	10.0	10.7		ug/L		107	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.31		ug/L		93	70 - 130
m-Xylene & p-Xylene	20.0	21.7		ug/L		108	70 - 130
Naphthalene	10.0	8.88		ug/L		89	70 - 130
n-Butylbenzene	10.0	10.7		ug/L		107	70 - 130
N-Propylbenzene	10.0	10.4		ug/L		104	70 - 130
o-Xylene	10.0	9.79		ug/L		98	70 - 130
sec-Butylbenzene	10.0	10.3		ug/L		103	70 - 130
Styrene	10.0	10.0		ug/L		100	70 - 130
tert-Butylbenzene	10.0	10.9		ug/L		109	70 - 130
Tetrachloroethene	10.0	10.1		ug/L		101	70 - 130
Toluene	10.0	9.60		ug/L		96	70 - 130
trans-1,2-Dichloroethene	10.0	10.7		ug/L		107	70 - 130
trans-1,3-Dichloropropene	10.0	10.0		ug/L		100	70 - 130
Trichloroethene	10.0	10.5		ug/L		105	70 - 130
Trichlorofluoromethane	10.0	11.9		ug/L		119	70 - 130
Vinyl chloride	10.0	11.1		ug/L		111	70 - 130
Xylenes, Total	30.0	31.5		ug/L		105	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-433444/1-A
Matrix: Water
Analysis Batch: 434302

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 433444

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		07/02/19 12:59	07/06/19 23:38	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-433444/2-A
Matrix: Water
Analysis Batch: 434302

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 433444

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	204		ug/L		102	80 - 120		

Lab Sample ID: 160-34740-2 MS
Matrix: Water
Analysis Batch: 434302

Client Sample ID: 41124-002
Prep Type: Total/NA
Prep Batch: 433444

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	1.8	B	200	198		ug/L		98	75 - 125		

Lab Sample ID: 160-34740-2 MSD
Matrix: Water
Analysis Batch: 434302

Client Sample ID: 41124-002
Prep Type: Total/NA
Prep Batch: 433444

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	1.8	B	200	206		ug/L		102	75 - 125	4	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34740-1
SDG: 41124

GC/MS VOA

Analysis Batch: 433663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34740-1	41124-001	Total/NA	Water	524.2	
160-34740-2	41124-002	Total/NA	Water	524.2	
160-34740-3	41124-003	Total/NA	Water	524.2	
MB 160-433663/6	Method Blank	Total/NA	Water	524.2	
LCS 160-433663/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 433444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34740-2	41124-002	Total/NA	Water	3010A	
MB 160-433444/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-433444/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-34740-2 MS	41124-002	Total/NA	Water	3010A	
160-34740-2 MSD	41124-002	Total/NA	Water	3010A	

Analysis Batch: 434302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34740-2	41124-002	Total/NA	Water	6020A	433444
MB 160-433444/1-A	Method Blank	Total/NA	Water	6020A	433444
LCS 160-433444/2-A	Lab Control Sample	Total/NA	Water	6020A	433444
160-34740-2 MS	41124-002	Total/NA	Water	6020A	433444
160-34740-2 MSD	41124-002	Total/NA	Water	6020A	433444

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34740-1
SDG: 41124

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-34740-1	41124-001	103	94
160-34740-2	41124-002	103	94
160-34740-3	41124-003	100	94
LCS 160-433663/4	Lab Control Sample	100	97
MB 160-433663/6	Method Blank	102	94

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-34788-1
Laboratory Sample Delivery Group: 41168
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
7/11/2019 9:57:33 AM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-34788-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-34788-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 7/3/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.1° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41168-001 (160-34788-1), 41168-002 (160-34788-2), 41168-004 (160-34788-3), 41168-005 (160-34788-4) and 41168-006 (160-34788-5) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on

Job ID: 160-34788-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

07/08/2019.

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41168-002 (160-34788-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 07/08/2019 and analyzed on 07/09/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41168

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Miller	Phone: 314-298-8566
2		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD well #2 on CoC# 41169. use TB-1 for 41169

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	7/2/19	1035	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	1038	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	1038	W	RTW-1 Effluent	250 ML	p	1	Hno3										X
~~003~~	~~E~~	~~G~~	~~095-153~~	~~0~~			~~W~~	~~RTW-2 Influent~~	~~40 ML~~	~~SC~~	~~3~~	~~HCL~~					X					
004	E	G	095-155	0	7/2/19	1058	W	RTW-3 Influent	40 ML	SC	3	HCL					X					
005	E	G	095-157	0	↓	1116	W	RTW-4 Influent	40 ML	SC	3	HCL					X					
006	E	G	TB-1	0	↓	0900	W	Trip Blank	40 ML	SC	3	HCL					X					

160-34788 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Miller 7/2/19 1300	Print	Print
Signature	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Nicholas Jones 7-3-19	Print	Print
Signature 0930	Signature	Signature

Contractor Lab Sample Disposal:
❑ Return To Client ☑ Disposal by Lab
❑ Archive For _____ Months

Data Package: ❑ Full ☑ Summary

Turn-Around Time Required:
❑ Rush (1 Day) ☑ 14 Days ❑ 30 Days
❑ 7 Days ❑ Other ( )

BNL F 3101F (rev. 6/13) Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-34788-1
SDG Number: 41168

Login Number: 34788
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34788-1
SDG: 41168

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34788-1
SDG: 41168

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34788-1
SDG: 41168

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-34788-1	41168-001	Water	07/02/19 10:35	07/03/19 09:30	
160-34788-2	41168-002	Water	07/02/19 10:38	07/03/19 09:30	
160-34788-3	41168-004	Water	07/02/19 10:58	07/03/19 09:30	
160-34788-4	41168-005	Water	07/02/19 11:16	07/03/19 09:30	
160-34788-5	41168-006	Water	07/02/19 09:00	07/03/19 09:30	

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34788-1
SDG: 41168

Client Sample ID: 41168-001
Date Collected: 07/02/19 10:35
Date Received: 07/03/19 09:30

Lab Sample ID: 160-34788-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/08/19 17:21	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/08/19 17:21	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/08/19 17:21	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/08/19 17:21	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/08/19 17:21	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/08/19 17:21	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/08/19 17:21	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/08/19 17:21	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/08/19 17:21	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/08/19 17:21	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/08/19 17:21	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/08/19 17:21	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/08/19 17:21	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/08/19 17:21	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/08/19 17:21	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/08/19 17:21	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/08/19 17:21	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/08/19 17:21	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/08/19 17:21	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/08/19 17:21	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/08/19 17:21	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/08/19 17:21	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/08/19 17:21	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/08/19 17:21	1
Benzene	0.50	U	0.50	0.10	ug/L			07/08/19 17:21	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/08/19 17:21	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 17:21	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 17:21	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/08/19 17:21	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/08/19 17:21	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/08/19 17:21	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/08/19 17:21	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/08/19 17:21	1
Chloroform	**1.1**		0.50	0.24	ug/L			07/08/19 17:21	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/08/19 17:21	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/08/19 17:21	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/08/19 17:21	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 17:21	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/08/19 17:21	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/08/19 17:21	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/08/19 17:21	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/08/19 17:21	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/08/19 17:21	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/08/19 17:21	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/08/19 17:21	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/08/19 17:21	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/08/19 17:21	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/08/19 17:21	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/08/19 17:21	1

Client Sample ID: 41168-001

Lab Sample ID: 160-34788-1

Date Collected: 07/02/19 10:35

Matrix: Water

Date Received: 07/03/19 09:30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			07/08/19 17:21	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/08/19 17:21	1
Styrene	0.50	U	0.50	0.21	ug/L			07/08/19 17:21	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/08/19 17:21	1
Tetrachloroethene	**12**		0.50	0.19	ug/L			07/08/19 17:21	1
Toluene	0.50	U	0.50	0.19	ug/L			07/08/19 17:21	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/08/19 17:21	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/08/19 17:21	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/08/19 17:21	1
Trichlorofluoromethane	**1.5**		0.50	0.16	ug/L			07/08/19 17:21	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/08/19 17:21	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/08/19 17:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*		*07/08/19 17:21*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*07/08/19 17:21*	*1*

Client Sample ID: 41168-002

Lab Sample ID: 160-34788-2

Date Collected: 07/02/19 10:38

Matrix: Water

Date Received: 07/03/19 09:30

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/08/19 17:45	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/08/19 17:45	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/08/19 17:45	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/08/19 17:45	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/08/19 17:45	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/08/19 17:45	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/08/19 17:45	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/08/19 17:45	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/08/19 17:45	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/08/19 17:45	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/08/19 17:45	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/08/19 17:45	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/08/19 17:45	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/08/19 17:45	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/08/19 17:45	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/08/19 17:45	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/08/19 17:45	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/08/19 17:45	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/08/19 17:45	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/08/19 17:45	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/08/19 17:45	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/08/19 17:45	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/08/19 17:45	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/08/19 17:45	1
Benzene	0.50	U	0.50	0.10	ug/L			07/08/19 17:45	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/08/19 17:45	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 17:45	1

Client Sample ID: 41168-002

Date Collected: 07/02/19 10:38
Date Received: 07/03/19 09:30

Lab Sample ID: 160-34788-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 17:45	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/08/19 17:45	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/08/19 17:45	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/08/19 17:45	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/08/19 17:45	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/08/19 17:45	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/08/19 17:45	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/08/19 17:45	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/08/19 17:45	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/08/19 17:45	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 17:45	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/08/19 17:45	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/08/19 17:45	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/08/19 17:45	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/08/19 17:45	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/08/19 17:45	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/08/19 17:45	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/08/19 17:45	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/08/19 17:45	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/08/19 17:45	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/08/19 17:45	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/08/19 17:45	1
o-Xylene	0.50	U	0.50	0.29	ug/L			07/08/19 17:45	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/08/19 17:45	1
Styrene	0.50	U	0.50	0.21	ug/L			07/08/19 17:45	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/08/19 17:45	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			07/08/19 17:45	1
Toluene	0.50	U	0.50	0.19	ug/L			07/08/19 17:45	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/08/19 17:45	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/08/19 17:45	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/08/19 17:45	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			07/08/19 17:45	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/08/19 17:45	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/08/19 17:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*107*		*70 - 130*		*07/08/19 17:45*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*07/08/19 17:45*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		07/08/19 11:21	07/09/19 22:10	2

Client Sample ID: 41168-004

Date Collected: 07/02/19 10:58
Date Received: 07/03/19 09:30

Lab Sample ID: 160-34788-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/08/19 18:09	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34788-1
SDG: 41168

Client Sample ID: 41168-004
Date Collected: 07/02/19 10:58
Date Received: 07/03/19 09:30

Lab Sample ID: 160-34788-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/08/19 18:09	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/08/19 18:09	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/08/19 18:09	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/08/19 18:09	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/08/19 18:09	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/08/19 18:09	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/08/19 18:09	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/08/19 18:09	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/08/19 18:09	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/08/19 18:09	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/08/19 18:09	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/08/19 18:09	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/08/19 18:09	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/08/19 18:09	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/08/19 18:09	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/08/19 18:09	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/08/19 18:09	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/08/19 18:09	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/08/19 18:09	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/08/19 18:09	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/08/19 18:09	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/08/19 18:09	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/08/19 18:09	1
Benzene	0.50	U	0.50	0.10	ug/L			07/08/19 18:09	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/08/19 18:09	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 18:09	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 18:09	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/08/19 18:09	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/08/19 18:09	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/08/19 18:09	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/08/19 18:09	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/08/19 18:09	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/08/19 18:09	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/08/19 18:09	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/08/19 18:09	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/08/19 18:09	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 18:09	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/08/19 18:09	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/08/19 18:09	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/08/19 18:09	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/08/19 18:09	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/08/19 18:09	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/08/19 18:09	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/08/19 18:09	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/08/19 18:09	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/08/19 18:09	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/08/19 18:09	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/08/19 18:09	1
o-Xylene	0.50	U	0.50	0.29	ug/L			07/08/19 18:09	1

Client Sample ID: 41168-004

Date Collected: 07/02/19 10:58
Date Received: 07/03/19 09:30

Lab Sample ID: 160-34788-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/08/19 18:09	1
Styrene	0.50	U	0.50	0.21	ug/L			07/08/19 18:09	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/08/19 18:09	1
Tetrachloroethene	**2.4**		0.50	0.19	ug/L			07/08/19 18:09	1
Toluene	0.50	U	0.50	0.19	ug/L			07/08/19 18:09	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/08/19 18:09	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/08/19 18:09	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/08/19 18:09	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			07/08/19 18:09	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/08/19 18:09	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/08/19 18:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*		*07/08/19 18:09*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*07/08/19 18:09*	*1*

Client Sample ID: 41168-005

Date Collected: 07/02/19 11:16
Date Received: 07/03/19 09:30

Lab Sample ID: 160-34788-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/08/19 18:32	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/08/19 18:32	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/08/19 18:32	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/08/19 18:32	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/08/19 18:32	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/08/19 18:32	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/08/19 18:32	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/08/19 18:32	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/08/19 18:32	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/08/19 18:32	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/08/19 18:32	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/08/19 18:32	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/08/19 18:32	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/08/19 18:32	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/08/19 18:32	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/08/19 18:32	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/08/19 18:32	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/08/19 18:32	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/08/19 18:32	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/08/19 18:32	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/08/19 18:32	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/08/19 18:32	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/08/19 18:32	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/08/19 18:32	1
Benzene	0.50	U	0.50	0.10	ug/L			07/08/19 18:32	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/08/19 18:32	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 18:32	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 18:32	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34788-1
SDG: 41168

Client Sample ID: 41168-005

Date Collected: 07/02/19 11:16
Date Received: 07/03/19 09:30

Lab Sample ID: 160-34788-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.25	ug/L			07/08/19 18:32	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/08/19 18:32	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/08/19 18:32	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/08/19 18:32	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/08/19 18:32	1
Chloroform	**1.5**		0.50	0.24	ug/L			07/08/19 18:32	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/08/19 18:32	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/08/19 18:32	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/08/19 18:32	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 18:32	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/08/19 18:32	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/08/19 18:32	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/08/19 18:32	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/08/19 18:32	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/08/19 18:32	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/08/19 18:32	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/08/19 18:32	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/08/19 18:32	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/08/19 18:32	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/08/19 18:32	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/08/19 18:32	1
o-Xylene	0.50	U	0.50	0.29	ug/L			07/08/19 18:32	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/08/19 18:32	1
Styrene	0.50	U	0.50	0.21	ug/L			07/08/19 18:32	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/08/19 18:32	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			07/08/19 18:32	1
Toluene	0.50	U	0.50	0.19	ug/L			07/08/19 18:32	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/08/19 18:32	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/08/19 18:32	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/08/19 18:32	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			07/08/19 18:32	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/08/19 18:32	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/08/19 18:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*		*07/08/19 18:32*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*07/08/19 18:32*	*1*

Client Sample ID: 41168-006

Date Collected: 07/02/19 09:00
Date Received: 07/03/19 09:30

Lab Sample ID: 160-34788-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/08/19 12:00	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/08/19 12:00	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/08/19 12:00	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/08/19 12:00	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/08/19 12:00	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/08/19 12:00	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34788-1
SDG: 41168

Client Sample ID: 41168-006
Date Collected: 07/02/19 09:00
Date Received: 07/03/19 09:30

Lab Sample ID: 160-34788-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/08/19 12:00	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/08/19 12:00	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/08/19 12:00	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/08/19 12:00	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/08/19 12:00	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/08/19 12:00	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/08/19 12:00	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/08/19 12:00	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/08/19 12:00	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/08/19 12:00	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/08/19 12:00	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/08/19 12:00	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/08/19 12:00	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/08/19 12:00	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/08/19 12:00	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/08/19 12:00	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/08/19 12:00	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/08/19 12:00	1
Benzene	0.50	U	0.50	0.10	ug/L			07/08/19 12:00	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/08/19 12:00	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 12:00	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 12:00	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/08/19 12:00	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/08/19 12:00	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/08/19 12:00	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/08/19 12:00	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/08/19 12:00	1
Chloroform	**0.98**		0.50	0.24	ug/L			07/08/19 12:00	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/08/19 12:00	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/08/19 12:00	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/08/19 12:00	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 12:00	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/08/19 12:00	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/08/19 12:00	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/08/19 12:00	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/08/19 12:00	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/08/19 12:00	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/08/19 12:00	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/08/19 12:00	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/08/19 12:00	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/08/19 12:00	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/08/19 12:00	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/08/19 12:00	1
o-Xylene	0.50	U	0.50	0.29	ug/L			07/08/19 12:00	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/08/19 12:00	1
Styrene	0.50	U	0.50	0.21	ug/L			07/08/19 12:00	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/08/19 12:00	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			07/08/19 12:00	1
Toluene	0.50	U	0.50	0.19	ug/L			07/08/19 12:00	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34788-1
SDG: 41168

Client Sample ID: 41168-006
Date Collected: 07/02/19 09:00
Date Received: 07/03/19 09:30

Lab Sample ID: 160-34788-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/08/19 12:00	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/08/19 12:00	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/08/19 12:00	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			07/08/19 12:00	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/08/19 12:00	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/08/19 12:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*		*07/08/19 12:00*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*07/08/19 12:00*	*1*

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34788-1
SDG: 41168

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-434031/6
Matrix: Water
Analysis Batch: 434031

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/08/19 11:11	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/08/19 11:11	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/08/19 11:11	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/08/19 11:11	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/08/19 11:11	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/08/19 11:11	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/08/19 11:11	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/08/19 11:11	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/08/19 11:11	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/08/19 11:11	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/08/19 11:11	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/08/19 11:11	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/08/19 11:11	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/08/19 11:11	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/08/19 11:11	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/08/19 11:11	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/08/19 11:11	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/08/19 11:11	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/08/19 11:11	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/08/19 11:11	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/08/19 11:11	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/08/19 11:11	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/08/19 11:11	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/08/19 11:11	1
Benzene	0.50	U	0.50	0.10	ug/L			07/08/19 11:11	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/08/19 11:11	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 11:11	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 11:11	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/08/19 11:11	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/08/19 11:11	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/08/19 11:11	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/08/19 11:11	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/08/19 11:11	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/08/19 11:11	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/08/19 11:11	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/08/19 11:11	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/08/19 11:11	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/08/19 11:11	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/08/19 11:11	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/08/19 11:11	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/08/19 11:11	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/08/19 11:11	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/08/19 11:11	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/08/19 11:11	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/08/19 11:11	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/08/19 11:11	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/08/19 11:11	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/08/19 11:11	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-434031/6
Matrix: Water
Analysis Batch: 434031

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/08/19 11:11	1
o-Xylene	0.50	U	0.50	0.29	ug/L			07/08/19 11:11	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/08/19 11:11	1
Styrene	0.50	U	0.50	0.21	ug/L			07/08/19 11:11	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/08/19 11:11	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			07/08/19 11:11	1
Toluene	0.50	U	0.50	0.19	ug/L			07/08/19 11:11	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/08/19 11:11	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/08/19 11:11	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/08/19 11:11	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			07/08/19 11:11	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/08/19 11:11	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/08/19 11:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*		*07/08/19 11:11*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*07/08/19 11:11*	*1*

Lab Sample ID: LCS 160-434031/4
Matrix: Water
Analysis Batch: 434031

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.6		ug/L		106	70 - 130
1,1,1-Trichloroethane	10.0	11.0		ug/L		110	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.57		ug/L		96	70 - 130
1,1,2-Trichloroethane	10.0	9.59		ug/L		96	70 - 130
1,1-Dichloroethane	10.0	11.1		ug/L		111	70 - 130
1,1-Dichloroethene	10.0	10.8		ug/L		108	70 - 130
1,1-Dichloropropene	10.0	10.7		ug/L		107	70 - 130
1,2,3-Trichlorobenzene	10.0	10.1		ug/L		101	70 - 130
1,2,3-Trichloropropane	10.0	8.78		ug/L		88	70 - 130
1,2,4-Trichlorobenzene	10.0	9.90		ug/L		99	70 - 130
1,2,4-Trimethylbenzene	10.0	10.8		ug/L		108	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	9.34		ug/L		93	70 - 130
1,2-Dibromoethane	10.0	9.97		ug/L		100	70 - 130
1,2-Dichlorobenzene	10.0	10.6		ug/L		106	70 - 130
1,2-Dichloroethane	10.0	11.3		ug/L		113	70 - 130
1,2-Dichloropropane	10.0	10.6		ug/L		106	70 - 130
1,3,5-Trimethylbenzene	10.0	10.8		ug/L		108	70 - 130
1,3-Dichlorobenzene	10.0	10.7		ug/L		107	70 - 130
1,3-Dichloropropane	10.0	9.56		ug/L		96	70 - 130
1,4-Dichlorobenzene	10.0	10.9		ug/L		109	70 - 130
2,2-Dichloropropane	10.0	11.5		ug/L		115	70 - 130
2-Chlorotoluene	10.0	11.4		ug/L		114	70 - 130
4-Chlorotoluene	10.0	10.3		ug/L		103	70 - 130
4-Isopropyltoluene	10.0	11.3		ug/L		113	70 - 130
Benzene	10.0	10.6		ug/L		106	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-434031/4
Matrix: Water
Analysis Batch: 434031

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.4		ug/L		104	70 - 130
Bromochloromethane	10.0	11.1		ug/L		111	70 - 130
Bromodichloromethane	10.0	10.9		ug/L		109	70 - 130
Bromoform	10.0	10.6		ug/L		106	70 - 130
Bromomethane	10.0	11.8		ug/L		118	70 - 130
Carbon tetrachloride	10.0	11.4		ug/L		114	70 - 130
Chlorobenzene	10.0	10.9		ug/L		109	70 - 130
Chloroethane	10.0	12.2		ug/L		122	70 - 130
Chloroform	10.0	11.2		ug/L		112	70 - 130
Chloromethane	10.0	12.0		ug/L		120	70 - 130
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	70 - 130
cis-1,3-Dichloropropene	10.0	9.84		ug/L		98	70 - 130
Dibromochloromethane	10.0	10.5		ug/L		105	70 - 130
Dibromomethane	10.0	10.7		ug/L		107	70 - 130
Dichlorodifluoromethane	10.0	9.39		ug/L		94	70 - 130
Ethylbenzene	10.0	11.0		ug/L		110	70 - 130
Hexachlorobutadiene	10.0	10.6		ug/L		106	70 - 130
Isopropylbenzene	10.0	11.1		ug/L		111	70 - 130
Methylene Chloride	10.0	10.7		ug/L		107	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	8.80		ug/L		88	70 - 130
m-Xylene & p-Xylene	20.0	22.1		ug/L		110	70 - 130
Naphthalene	10.0	8.97		ug/L		90	70 - 130
n-Butylbenzene	10.0	10.9		ug/L		109	70 - 130
N-Propylbenzene	10.0	10.2		ug/L		102	70 - 130
o-Xylene	10.0	9.98		ug/L		100	70 - 130
sec-Butylbenzene	10.0	10.4		ug/L		104	70 - 130
Styrene	10.0	10.1		ug/L		101	70 - 130
tert-Butylbenzene	10.0	11.0		ug/L		110	70 - 130
Tetrachloroethene	10.0	10.5		ug/L		105	70 - 130
Toluene	10.0	9.80		ug/L		98	70 - 130
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	70 - 130
trans-1,3-Dichloropropene	10.0	9.88		ug/L		99	70 - 130
Trichloroethene	10.0	10.6		ug/L		106	70 - 130
Trichlorofluoromethane	10.0	12.1		ug/L		121	70 - 130
Vinyl chloride	10.0	10.9		ug/L		109	70 - 130
Xylenes, Total	30.0	32.1		ug/L		107	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 160-34786-A-8 MS
Matrix: Water
Analysis Batch: 434031

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.50	U	10.0	10.5		ug/L		105	73 - 123
1,1,1-Trichloroethane	0.50	U	10.0	10.7		ug/L		107	76 - 122

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-34786-A-8 MS
Matrix: Water
Analysis Batch: 434031

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	0.50	U	10.0	10.1		ug/L		101	77 - 118
1,1,2-Trichloroethane	0.50	U	10.0	9.93		ug/L		99	79 - 116
1,1-Dichloroethane	0.50	U	10.0	11.1		ug/L		111	81 - 120
1,1-Dichloroethene	0.50	U	10.0	10.1		ug/L		101	68 - 116
1,1-Dichloropropene	0.50	U	10.0	10.3		ug/L		103	74 - 124
1,2,3-Trichlorobenzene	0.59	U	10.0	10.4		ug/L		104	57 - 128
1,2,3-Trichloropropane	0.50	U	10.0	9.90		ug/L		99	72 - 122
1,2,4-Trichlorobenzene	0.55	U	10.0	9.78		ug/L		98	54 - 150
1,2,4-Trimethylbenzene	0.50	U	10.0	10.8		ug/L		108	70 - 125
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	9.33		ug/L		93	58 - 130
1,2-Dibromoethane	0.50	U	10.0	9.88		ug/L		99	76 - 118
1,2-Dichlorobenzene	0.50	U	10.0	10.7		ug/L		107	76 - 120
1,2-Dichloroethane	0.50	U	10.0	11.6		ug/L		116	78 - 123
1,2-Dichloropropane	0.50	U	10.0	10.8		ug/L		108	80 - 119
1,3,5-Trimethylbenzene	0.50	U	10.0	10.5		ug/L		105	76 - 126
1,3-Dichlorobenzene	0.50	U	10.0	10.6		ug/L		106	76 - 120
1,3-Dichloropropane	0.50	U	10.0	9.93		ug/L		99	79 - 116
1,4-Dichlorobenzene	0.50	U	10.0	10.8		ug/L		108	75 - 117
2,2-Dichloropropane	0.50	U	10.0	10.3		ug/L		103	76 - 120
2-Chlorotoluene	0.50	U	10.0	11.6		ug/L		116	79 - 125
4-Chlorotoluene	0.50	U	10.0	10.2		ug/L		102	76 - 136
4-Isopropyltoluene	0.50	U	10.0	10.9		ug/L		109	78 - 132
Benzene	0.50	U	10.0	10.8		ug/L		108	77 - 124
Bromobenzene	0.50	U	10.0	10.4		ug/L		104	77 - 115
Bromochloromethane	0.50	U	10.0	11.6		ug/L		116	73 - 118
Bromodichloromethane	0.50	U	10.0	11.3		ug/L		113	73 - 118
Bromoform	0.50	U	10.0	10.2		ug/L		102	70 - 118
Bromomethane	0.50	U	10.0	11.0		ug/L		110	46 - 147
Carbon tetrachloride	0.50	U	10.0	10.6		ug/L		106	70 - 128
Chlorobenzene	0.50	U	10.0	10.9		ug/L		109	76 - 124
Chloroethane	0.50	U	10.0	11.5		ug/L		115	66 - 129
Chloroform	0.50	U	10.0	11.3		ug/L		113	77 - 122
Chloromethane	0.50	U	10.0	11.8		ug/L		118	68 - 132
cis-1,2-Dichloroethene	0.50	U	10.0	10.3		ug/L		103	71 - 117
cis-1,3-Dichloropropene	0.50	U	10.0	9.65		ug/L		96	76 - 128
Dibromochloromethane	0.50	U	10.0	10.7		ug/L		107	73 - 114
Dibromomethane	0.50	U	10.0	11.3		ug/L		113	77 - 118
Dichlorodifluoromethane	0.50	U	10.0	8.54		ug/L		85	61 - 134
Ethylbenzene	0.50	U	10.0	10.8		ug/L		108	80 - 122
Hexachlorobutadiene	0.50	U	10.0	10.4		ug/L		104	57 - 144
Isopropylbenzene	0.50	U	10.0	11.0		ug/L		110	85 - 148
Methylene Chloride	0.50	U	10.0	11.0		ug/L		110	65 - 131
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	9.09		ug/L		91	75 - 122
m-Xylene & p-Xylene	1.0	U	20.0	21.7		ug/L		108	70 - 130
Naphthalene	0.67	U	10.0	8.93		ug/L		89	56 - 143
n-Butylbenzene	0.50	U	10.0	10.7		ug/L		107	74 - 128
N-Propylbenzene	0.50	U	10.0	9.91		ug/L		99	80 - 132
o-Xylene	0.50	U	10.0	9.84		ug/L		98	70 - 130
sec-Butylbenzene	0.50	U	10.0	10.0		ug/L		100	78 - 128

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-34786-A-8 MS
Matrix: Water
Analysis Batch: 434031

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Styrene	0.50	U	10.0	9.65		ug/L		97	68 - 125
tert-Butylbenzene	0.50	U	10.0	10.6		ug/L		106	75 - 131
Tetrachloroethene	0.50	U	10.0	10.2		ug/L		102	71 - 124
Toluene	0.50	U	10.0	9.62		ug/L		96	76 - 127
trans-1,2-Dichloroethene	0.50	U	10.0	10.4		ug/L		104	72 - 117
trans-1,3-Dichloropropene	0.50	U	10.0	9.64		ug/L		96	85 - 135
Trichloroethene	0.50	U	10.0	10.3		ug/L		103	71 - 118
Trichlorofluoromethane	0.50	U	10.0	11.8		ug/L		118	56 - 127
Vinyl chloride	0.50	U	10.0	9.84		ug/L		98	58 - 114
Xylenes, Total	3.0	U	30.0	31.5		ug/L		105	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 160-34786-A-8 MSD
Matrix: Water
Analysis Batch: 434031

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.50	U	10.0	10.4		ug/L		104	73 - 123	1	20
1,1,1-Trichloroethane	0.50	U	10.0	10.6		ug/L		106	76 - 122	2	20
1,1,2,2-Tetrachloroethane	0.50	U	10.0	10.2		ug/L		102	77 - 118	1	20
1,1,2-Trichloroethane	0.50	U	10.0	10.1		ug/L		101	79 - 116	2	20
1,1-Dichloroethane	0.50	U	10.0	10.9		ug/L		109	81 - 120	2	20
1,1-Dichloroethene	0.50	U	10.0	9.83		ug/L		98	68 - 116	3	20
1,1-Dichloropropene	0.50	U	10.0	9.91		ug/L		99	74 - 124	4	20
1,2,3-Trichlorobenzene	0.59	U	10.0	10.0		ug/L		100	57 - 128	4	20
1,2,3-Trichloropropane	0.50	U	10.0	9.26		ug/L		93	72 - 122	7	20
1,2,4-Trichlorobenzene	0.55	U	10.0	9.78		ug/L		98	54 - 150	0	20
1,2,4-Trimethylbenzene	0.50	U	10.0	10.6		ug/L		106	70 - 125	1	20
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	9.51		ug/L		95	58 - 130	2	20
1,2-Dibromoethane	0.50	U	10.0	10.1		ug/L		101	76 - 118	2	20
1,2-Dichlorobenzene	0.50	U	10.0	10.7		ug/L		107	76 - 120	0	20
1,2-Dichloroethane	0.50	U	10.0	11.5		ug/L		115	78 - 123	1	20
1,2-Dichloropropane	0.50	U	10.0	10.8		ug/L		108	80 - 119	0	20
1,3,5-Trimethylbenzene	0.50	U	10.0	10.4		ug/L		104	76 - 126	1	20
1,3-Dichlorobenzene	0.50	U	10.0	10.6		ug/L		106	76 - 120	0	20
1,3-Dichloropropane	0.50	U	10.0	9.88		ug/L		99	79 - 116	1	20
1,4-Dichlorobenzene	0.50	U	10.0	10.8		ug/L		108	75 - 117	0	20
2,2-Dichloropropane	0.50	U	10.0	9.81		ug/L		98	76 - 120	4	20
2-Chlorotoluene	0.50	U	10.0	11.3		ug/L		113	79 - 125	2	20
4-Chlorotoluene	0.50	U	10.0	10.1		ug/L		101	76 - 136	1	20
4-Isopropyltoluene	0.50	U	10.0	10.8		ug/L		108	78 - 132	1	20
Benzene	0.50	U	10.0	10.5		ug/L		105	77 - 124	3	20
Bromobenzene	0.50	U	10.0	10.4		ug/L		104	77 - 115	0	20
Bromochloromethane	0.50	U	10.0	11.2		ug/L		112	73 - 118	4	20
Bromodichloromethane	0.50	U	10.0	11.1		ug/L		111	73 - 118	2	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-34786-A-8 MSD
Matrix: Water
Analysis Batch: 434031

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromoform	0.50	U	10.0	10.3		ug/L		103	70 - 118	1	20
Bromomethane	0.50	U	10.0	11.1		ug/L		111	46 - 147	1	20
Carbon tetrachloride	0.50	U	10.0	10.4		ug/L		104	70 - 128	2	20
Chlorobenzene	0.50	U	10.0	10.8		ug/L		108	76 - 124	1	20
Chloroethane	0.50	U	10.0	11.4		ug/L		114	66 - 129	1	20
Chloroform	0.50	U	10.0	11.1		ug/L		111	77 - 122	2	20
Chloromethane	0.50	U	10.0	11.6		ug/L		116	68 - 132	2	20
cis-1,2-Dichloroethene	0.50	U	10.0	10.4		ug/L		104	71 - 117	1	20
cis-1,3-Dichloropropene	0.50	U	10.0	9.79		ug/L		98	76 - 128	1	20
Dibromochloromethane	0.50	U	10.0	10.6		ug/L		106	73 - 114	0	20
Dibromomethane	0.50	U	10.0	10.9		ug/L		109	77 - 118	3	20
Dichlorodifluoromethane	0.50	U	10.0	8.06		ug/L		81	61 - 134	6	20
Ethylbenzene	0.50	U	10.0	10.7		ug/L		107	80 - 122	1	20
Hexachlorobutadiene	0.50	U	10.0	9.87		ug/L		99	57 - 144	5	20
Isopropylbenzene	0.50	U	10.0	10.8		ug/L		108	85 - 148	1	20
Methylene Chloride	0.50	U	10.0	10.6		ug/L		106	65 - 131	4	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	8.94		ug/L		89	75 - 122	2	20
m-Xylene & p-Xylene	1.0	U	20.0	21.6		ug/L		108	70 - 130	0	20
Naphthalene	0.67	U	10.0	9.12		ug/L		91	56 - 143	2	20
n-Butylbenzene	0.50	U	10.0	10.3		ug/L		103	74 - 128	3	20
N-Propylbenzene	0.50	U	10.0	9.75		ug/L		98	80 - 132	2	20
o-Xylene	0.50	U	10.0	9.84		ug/L		98	70 - 130	0	20
sec-Butylbenzene	0.50	U	10.0	9.85		ug/L		98	78 - 128	2	20
Styrene	0.50	U	10.0	9.80		ug/L		98	68 - 125	2	20
tert-Butylbenzene	0.50	U	10.0	10.5		ug/L		105	75 - 131	1	20
Tetrachloroethene	0.50	U	10.0	9.77		ug/L		98	71 - 124	4	20
Toluene	0.50	U	10.0	9.53		ug/L		95	76 - 127	1	20
trans-1,2-Dichloroethene	0.50	U	10.0	10.2		ug/L		102	72 - 117	2	20
trans-1,3-Dichloropropene	0.50	U	10.0	9.74		ug/L		97	85 - 135	1	20
Trichloroethene	0.50	U	10.0	10.2		ug/L		102	71 - 118	1	20
Trichlorofluoromethane	0.50	U	10.0	10.9		ug/L		109	56 - 127	7	20
Vinyl chloride	0.50	U	10.0	10.0		ug/L		100	58 - 114	2	20
Xylenes, Total	3.0	U	30.0	31.4		ug/L		105	78 - 128	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-434063/1-A
Matrix: Water
Analysis Batch: 434361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 434063

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		07/08/19 11:21	07/09/19 22:02	2

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 160-434063/2-A
Matrix: Water
Analysis Batch: 434361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 434063

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	196		ug/L		98	80 - 120		

Lab Sample ID: 160-34788-2 MS
Matrix: Water
Analysis Batch: 434361

Client Sample ID: 41168-002
Prep Type: Total/NA
Prep Batch: 434063

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	195		ug/L		97	75 - 125		

Lab Sample ID: 160-34788-2 MSD
Matrix: Water
Analysis Batch: 434361

Client Sample ID: 41168-002
Prep Type: Total/NA
Prep Batch: 434063

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	204		ug/L		102	75 - 125	4	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34788-1
SDG: 41168

GC/MS VOA

Analysis Batch: 434031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34788-1	41168-001	Total/NA	Water	524.2	
160-34788-2	41168-002	Total/NA	Water	524.2	
160-34788-3	41168-004	Total/NA	Water	524.2	
160-34788-4	41168-005	Total/NA	Water	524.2	
160-34788-5	41168-006	Total/NA	Water	524.2	
MB 160-434031/6	Method Blank	Total/NA	Water	524.2	
LCS 160-434031/4	Lab Control Sample	Total/NA	Water	524.2	
160-34786-A-8 MS	Matrix Spike	Total/NA	Water	524.2	
160-34786-A-8 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Metals

Prep Batch: 434063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34788-2	41168-002	Total/NA	Water	3010A	
MB 160-434063/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-434063/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-34788-2 MS	41168-002	Total/NA	Water	3010A	
160-34788-2 MSD	41168-002	Total/NA	Water	3010A	

Analysis Batch: 434361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34788-2	41168-002	Total/NA	Water	6020A	434063
MB 160-434063/1-A	Method Blank	Total/NA	Water	6020A	434063
LCS 160-434063/2-A	Lab Control Sample	Total/NA	Water	6020A	434063
160-34788-2 MS	41168-002	Total/NA	Water	6020A	434063
160-34788-2 MSD	41168-002	Total/NA	Water	6020A	434063

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-34788-1
SDG: 41168

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		DCZ	BFB										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
160-34786-A-8 MS	Matrix Spike	103	99										
160-34786-A-8 MSD	Matrix Spike Duplicate	101	98										
160-34788-1	41168-001	105	94										
160-34788-2	41168-002	107	95										
160-34788-3	41168-004	105	93										
160-34788-4	41168-005	108	94										
160-34788-5	41168-006	101	93										
LCS 160-434031/4	Lab Control Sample	100	96										
MB 160-434031/6	Method Blank	102	95										

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-35035-1
Laboratory Sample Delivery Group: 41221
Client Project/Site: OU3B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Rhonda Ridenhower

Authorized for release by:
7/30/2019 2:02:30 PM
Rhonda Ridenhower, Manager of Project Management
rhonda.ridenhower@testamericainc.com

Designee for

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-35035-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3B96

Report Number: 160-35035-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 07/19/2019; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.2º C and 0.2º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41221-001 (160-35035-1), 41221-002 (160-35035-2) and 41221-003 (160-35035-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 07/28/2019.

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

Job ID: 160-35035-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41221-002 (160-35035-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 07/22/2019 and analyzed on 07/29/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41221

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Milligan	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	7/17/19	0955	W	RTW-1 Influent	40 ML	SO	3	HCL					X							
002	E	G	095-152	0		1000	W	RTW-1 Effluent	40 ML	SO	3	HCL					X							
002	E	G	095-152	0		1000	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SO	3	HCL					X							

160-35035 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milligan 7/18/19 1500	Print	Print
Signature	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print L. Harris	Print	Print
Signature	Signature	Signature

Contractor Lab Sample Disposal:
❑ Return To Client ☒ Disposal by Lab
❑ Archive For _____ Months

Data Package: ❑ Full ☒ Summary

Turn-Around Time Required:
❑ Rush (1 Day) ☒ 14 Days ❑ 30 Days
❑ 7 Days ❑ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-35035-1
SDG Number: 41221

Login Number: 35035
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3B96

Job ID: 160-35035-1
SDG: 41221

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3B96

Job ID: 160-35035-1
SDG: 41221

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3B96

Job ID: 160-35035-1
SDG: 41221

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-35035-1	41221-001	Water	07/17/19 09:55	07/19/19 09:15	
160-35035-2	41221-002	Water	07/17/19 10:00	07/19/19 09:15	
160-35035-3	41221-003	Water	07/17/19 09:00	07/19/19 09:15	

Client: Brookhaven National Labs
Project/Site: OU3B96

Job ID: 160-35035-1
SDG: 41221

Client Sample ID: 41221-001
Date Collected: 07/17/19 09:55
Date Received: 07/19/19 09:15

Lab Sample ID: 160-35035-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/28/19 14:26	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/28/19 14:26	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/28/19 14:26	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/28/19 14:26	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/28/19 14:26	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/28/19 14:26	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/28/19 14:26	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/28/19 14:26	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/28/19 14:26	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/28/19 14:26	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/28/19 14:26	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/28/19 14:26	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/28/19 14:26	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/28/19 14:26	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/28/19 14:26	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/28/19 14:26	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/28/19 14:26	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/28/19 14:26	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/28/19 14:26	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/28/19 14:26	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/28/19 14:26	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/28/19 14:26	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/28/19 14:26	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/28/19 14:26	1
Benzene	0.50	U	0.50	0.10	ug/L			07/28/19 14:26	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/28/19 14:26	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/28/19 14:26	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/28/19 14:26	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/28/19 14:26	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/28/19 14:26	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/28/19 14:26	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/28/19 14:26	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/28/19 14:26	1
Chloroform	**1.0**		0.50	0.24	ug/L			07/28/19 14:26	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/28/19 14:26	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/28/19 14:26	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/28/19 14:26	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/28/19 14:26	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/28/19 14:26	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/28/19 14:26	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/28/19 14:26	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/28/19 14:26	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/28/19 14:26	1
Methylene Chloride	**0.30**	**J**	0.50	0.27	ug/L			07/28/19 14:26	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/28/19 14:26	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/28/19 14:26	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/28/19 14:26	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/28/19 14:26	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/28/19 14:26	1

Client Sample ID: 41221-001

Date Collected: 07/17/19 09:55
Date Received: 07/19/19 09:15

Lab Sample ID: 160-35035-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			07/28/19 14:26	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/28/19 14:26	1
Styrene	0.50	U	0.50	0.21	ug/L			07/28/19 14:26	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/28/19 14:26	1
Tetrachloroethene	**12**		0.50	0.19	ug/L			07/28/19 14:26	1
Toluene	0.50	U	0.50	0.19	ug/L			07/28/19 14:26	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/28/19 14:26	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/28/19 14:26	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/28/19 14:26	1
Trichlorofluoromethane	**0.97**		0.50	0.16	ug/L			07/28/19 14:26	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/28/19 14:26	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/28/19 14:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*07/28/19 14:26*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*07/28/19 14:26*	*1*

Client Sample ID: 41221-002

Date Collected: 07/17/19 10:00
Date Received: 07/19/19 09:15

Lab Sample ID: 160-35035-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/28/19 14:49	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/28/19 14:49	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/28/19 14:49	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/28/19 14:49	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/28/19 14:49	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/28/19 14:49	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/28/19 14:49	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/28/19 14:49	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/28/19 14:49	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/28/19 14:49	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/28/19 14:49	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/28/19 14:49	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/28/19 14:49	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/28/19 14:49	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/28/19 14:49	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/28/19 14:49	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/28/19 14:49	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/28/19 14:49	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/28/19 14:49	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/28/19 14:49	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/28/19 14:49	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/28/19 14:49	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/28/19 14:49	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/28/19 14:49	1
Benzene	0.50	U	0.50	0.10	ug/L			07/28/19 14:49	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/28/19 14:49	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/28/19 14:49	1

Client Sample ID: 41221-002

Date Collected: 07/17/19 10:00
Date Received: 07/19/19 09:15

Lab Sample ID: 160-35035-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/28/19 14:49	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/28/19 14:49	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/28/19 14:49	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/28/19 14:49	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/28/19 14:49	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/28/19 14:49	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/28/19 14:49	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/28/19 14:49	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/28/19 14:49	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/28/19 14:49	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/28/19 14:49	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/28/19 14:49	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/28/19 14:49	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/28/19 14:49	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/28/19 14:49	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/28/19 14:49	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/28/19 14:49	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/28/19 14:49	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/28/19 14:49	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/28/19 14:49	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/28/19 14:49	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/28/19 14:49	1
o-Xylene	0.50	U	0.50	0.29	ug/L			07/28/19 14:49	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/28/19 14:49	1
Styrene	0.50	U	0.50	0.21	ug/L			07/28/19 14:49	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/28/19 14:49	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			07/28/19 14:49	1
Toluene	0.50	U	0.50	0.19	ug/L			07/28/19 14:49	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/28/19 14:49	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/28/19 14:49	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/28/19 14:49	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			07/28/19 14:49	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/28/19 14:49	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/28/19 14:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*07/28/19 14:49*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*07/28/19 14:49*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		07/22/19 17:12	07/29/19 22:33	2

Client Sample ID: 41221-003

Date Collected: 07/17/19 09:00
Date Received: 07/19/19 09:15

Lab Sample ID: 160-35035-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/28/19 13:41	1

Client: Brookhaven National Labs
Project/Site: OU3B96

Job ID: 160-35035-1
SDG: 41221

Client Sample ID: 41221-003
Date Collected: 07/17/19 09:00
Date Received: 07/19/19 09:15

Lab Sample ID: 160-35035-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/28/19 13:41	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/28/19 13:41	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/28/19 13:41	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/28/19 13:41	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/28/19 13:41	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/28/19 13:41	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/28/19 13:41	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/28/19 13:41	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/28/19 13:41	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/28/19 13:41	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/28/19 13:41	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/28/19 13:41	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/28/19 13:41	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/28/19 13:41	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/28/19 13:41	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/28/19 13:41	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/28/19 13:41	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/28/19 13:41	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/28/19 13:41	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/28/19 13:41	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/28/19 13:41	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/28/19 13:41	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/28/19 13:41	1
Benzene	0.50	U	0.50	0.10	ug/L			07/28/19 13:41	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/28/19 13:41	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/28/19 13:41	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/28/19 13:41	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/28/19 13:41	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/28/19 13:41	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/28/19 13:41	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/28/19 13:41	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/28/19 13:41	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/28/19 13:41	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/28/19 13:41	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/28/19 13:41	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/28/19 13:41	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/28/19 13:41	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/28/19 13:41	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/28/19 13:41	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/28/19 13:41	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/28/19 13:41	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/28/19 13:41	1
Methylene Chloride	**1.6**		0.50	0.27	ug/L			07/28/19 13:41	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/28/19 13:41	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/28/19 13:41	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/28/19 13:41	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/28/19 13:41	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/28/19 13:41	1
o-Xylene	0.50	U	0.50	0.29	ug/L			07/28/19 13:41	1

Client Sample ID: 41221-003

Date Collected: 07/17/19 09:00
Date Received: 07/19/19 09:15

Lab Sample ID: 160-35035-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/28/19 13:41	1
Styrene	0.50	U	0.50	0.21	ug/L			07/28/19 13:41	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/28/19 13:41	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			07/28/19 13:41	1
Toluene	0.50	U	0.50	0.19	ug/L			07/28/19 13:41	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/28/19 13:41	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/28/19 13:41	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/28/19 13:41	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			07/28/19 13:41	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/28/19 13:41	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/28/19 13:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*		*07/28/19 13:41*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*07/28/19 13:41*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-436791/6
Matrix: Water
Analysis Batch: 436791

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			07/28/19 13:00	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			07/28/19 13:00	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			07/28/19 13:00	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/28/19 13:00	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			07/28/19 13:00	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			07/28/19 13:00	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			07/28/19 13:00	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			07/28/19 13:00	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			07/28/19 13:00	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/28/19 13:00	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			07/28/19 13:00	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			07/28/19 13:00	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			07/28/19 13:00	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			07/28/19 13:00	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			07/28/19 13:00	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			07/28/19 13:00	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			07/28/19 13:00	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			07/28/19 13:00	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			07/28/19 13:00	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			07/28/19 13:00	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			07/28/19 13:00	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			07/28/19 13:00	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			07/28/19 13:00	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/28/19 13:00	1
Benzene	0.50	U	0.50	0.10	ug/L			07/28/19 13:00	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			07/28/19 13:00	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			07/28/19 13:00	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			07/28/19 13:00	1
Bromoform	0.50	U	0.50	0.25	ug/L			07/28/19 13:00	1
Bromomethane	0.50	U	0.50	0.38	ug/L			07/28/19 13:00	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			07/28/19 13:00	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			07/28/19 13:00	1
Chloroethane	0.50	U	0.50	0.18	ug/L			07/28/19 13:00	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/28/19 13:00	1
Chloromethane	0.50	U	0.50	0.20	ug/L			07/28/19 13:00	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/28/19 13:00	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			07/28/19 13:00	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/28/19 13:00	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			07/28/19 13:00	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			07/28/19 13:00	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			07/28/19 13:00	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			07/28/19 13:00	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			07/28/19 13:00	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/28/19 13:00	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			07/28/19 13:00	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			07/28/19 13:00	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/28/19 13:00	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/28/19 13:00	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-436791/6
Matrix: Water
Analysis Batch: 436791

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			07/28/19 13:00	1
o-Xylene	0.50	U	0.50	0.29	ug/L			07/28/19 13:00	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/28/19 13:00	1
Styrene	0.50	U	0.50	0.21	ug/L			07/28/19 13:00	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/28/19 13:00	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			07/28/19 13:00	1
Toluene	0.50	U	0.50	0.19	ug/L			07/28/19 13:00	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			07/28/19 13:00	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/28/19 13:00	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			07/28/19 13:00	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			07/28/19 13:00	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/28/19 13:00	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			07/28/19 13:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*07/28/19 13:00*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*07/28/19 13:00*	*1*

Lab Sample ID: LCS 160-436791/4
Matrix: Water
Analysis Batch: 436791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	9.89		ug/L		99	70 - 130
1,1,1-Trichloroethane	10.0	9.91		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.98		ug/L		100	70 - 130
1,1,2-Trichloroethane	10.0	9.41		ug/L		94	70 - 130
1,1-Dichloroethane	10.0	9.76		ug/L		98	70 - 130
1,1-Dichloroethene	10.0	9.68		ug/L		97	70 - 130
1,1-Dichloropropene	10.0	10.2		ug/L		102	70 - 130
1,2,3-Trichlorobenzene	10.0	10.6		ug/L		106	70 - 130
1,2,3-Trichloropropane	10.0	9.68		ug/L		97	70 - 130
1,2,4-Trichlorobenzene	10.0	10.8		ug/L		108	70 - 130
1,2,4-Trimethylbenzene	10.0	10.2		ug/L		102	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	10.1		ug/L		101	70 - 130
1,2-Dibromoethane	10.0	9.72		ug/L		97	70 - 130
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130
1,2-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,2-Dichloropropane	10.0	10.1		ug/L		101	70 - 130
1,3,5-Trimethylbenzene	10.0	10.5		ug/L		105	70 - 130
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,3-Dichloropropane	10.0	9.83		ug/L		98	70 - 130
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
2,2-Dichloropropane	10.0	10.7		ug/L		107	70 - 130
2-Chlorotoluene	10.0	10.3		ug/L		103	70 - 130
4-Chlorotoluene	10.0	10.1		ug/L		101	70 - 130
4-Isopropyltoluene	10.0	10.3		ug/L		103	70 - 130
Benzene	10.0	9.95		ug/L		100	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-436791/4
Matrix: Water
Analysis Batch: 436791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.1		ug/L		101	70 - 130
Bromochloromethane	10.0	10.3		ug/L		103	70 - 130
Bromodichloromethane	10.0	10.1		ug/L		101	70 - 130
Bromoform	10.0	10.2		ug/L		102	70 - 130
Bromomethane	10.0	10.4		ug/L		104	70 - 130
Carbon tetrachloride	10.0	9.96		ug/L		100	70 - 130
Chlorobenzene	10.0	10.1		ug/L		101	70 - 130
Chloroethane	10.0	9.94		ug/L		99	70 - 130
Chloroform	10.0	10.2		ug/L		102	70 - 130
Chloromethane	10.0	9.98		ug/L		100	70 - 130
cis-1,2-Dichloroethene	10.0	9.99		ug/L		100	70 - 130
cis-1,3-Dichloropropene	10.0	10.2		ug/L		102	70 - 130
Dibromochloromethane	10.0	9.93		ug/L		99	70 - 130
Dibromomethane	10.0	10.0		ug/L		100	70 - 130
Dichlorodifluoromethane	10.0	9.78		ug/L		98	70 - 130
Ethylbenzene	10.0	10.1		ug/L		101	70 - 130
Hexachlorobutadiene	10.0	11.0		ug/L		110	70 - 130
Isopropylbenzene	10.0	10.0		ug/L		100	70 - 130
Methylene Chloride	10.0	10.1		ug/L		101	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.96		ug/L		100	70 - 130
m-Xylene & p-Xylene	20.0	20.3		ug/L		102	70 - 130
Naphthalene	10.0	10.0		ug/L		100	70 - 130
n-Butylbenzene	10.0	10.4		ug/L		104	70 - 130
N-Propylbenzene	10.0	10.3		ug/L		103	70 - 130
o-Xylene	10.0	10.2		ug/L		102	70 - 130
sec-Butylbenzene	10.0	9.94		ug/L		99	70 - 130
Styrene	10.0	10.1		ug/L		101	70 - 130
tert-Butylbenzene	10.0	10.3		ug/L		103	70 - 130
Tetrachloroethene	10.0	9.39		ug/L		94	70 - 130
Toluene	10.0	9.86		ug/L		99	70 - 130
trans-1,2-Dichloroethene	10.0	10.1		ug/L		101	70 - 130
trans-1,3-Dichloropropene	10.0	10.1		ug/L		101	70 - 130
Trichloroethene	10.0	9.75		ug/L		98	70 - 130
Trichlorofluoromethane	10.0	10.4		ug/L		104	70 - 130
Vinyl chloride	10.0	9.72		ug/L		97	70 - 130
Xylenes, Total	30.0	30.5		ug/L		102	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-435938/1-A
Matrix: Water
Analysis Batch: 436890

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435938

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		07/22/19 17:12	07/29/19 22:25	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-435938/2-A
Matrix: Water
Analysis Batch: 436890

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435938

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	202		ug/L		101	80 - 120		

Lab Sample ID: 160-35035-2 MS
Matrix: Water
Analysis Batch: 436890

Client Sample ID: 41221-002
Prep Type: Total/NA
Prep Batch: 435938

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	199		ug/L		100	75 - 125		

Lab Sample ID: 160-35035-2 MSD
Matrix: Water
Analysis Batch: 436890

Client Sample ID: 41221-002
Prep Type: Total/NA
Prep Batch: 435938

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	198		ug/L		99	75 - 125	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3B96

Job ID: 160-35035-1
SDG: 41221

GC/MS VOA

Analysis Batch: 436791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35035-1	41221-001	Total/NA	Water	524.2	
160-35035-2	41221-002	Total/NA	Water	524.2	
160-35035-3	41221-003	Total/NA	Water	524.2	
MB 160-436791/6	Method Blank	Total/NA	Water	524.2	
LCS 160-436791/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 435938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35035-2	41221-002	Total/NA	Water	3010A	
MB 160-435938/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-435938/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-35035-2 MS	41221-002	Total/NA	Water	3010A	
160-35035-2 MSD	41221-002	Total/NA	Water	3010A	

Analysis Batch: 436890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35035-2	41221-002	Total/NA	Water	6020A	435938
MB 160-435938/1-A	Method Blank	Total/NA	Water	6020A	435938
LCS 160-435938/2-A	Lab Control Sample	Total/NA	Water	6020A	435938
160-35035-2 MS	41221-002	Total/NA	Water	6020A	435938
160-35035-2 MSD	41221-002	Total/NA	Water	6020A	435938

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3B96

Job ID: 160-35035-1
SDG: 41221

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-35035-1	41221-001	106	97
160-35035-2	41221-002	99	95
160-35035-3	41221-003	102	98
LCS 160-436791/4	Lab Control Sample	99	99
MB 160-436791/6	Method Blank	103	97

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4
BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-35225-1
Laboratory Sample Delivery Group: 41247
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
8/16/2019 10:49:45 AM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-35225-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-35225-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 8/7/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41247-001 (160-35225-1), 41247-002 (160-35225-2), 41247-003 (160-35225-3), 41247-004 (160-35225-4) and 41247-005 (160-35225-5) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on

Job ID: 160-35225-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

08/08/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41247-002 (160-35225-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 08/09/2019 and analyzed on 08/15/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41247

Requires EDD Y

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler:	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD Use TB-1 for CoC# 41246

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	8/6/19	1140	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1142	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1142	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X					
004	E	G	095-153	0		1145	W	RTW-2 Influent	40ML	SC	3	HCL					X					
005	E	G	095-154	0		1150	W	RTW-2 Effluent	40ML	SC	3	HCL					X					

160-35225 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Mullia 8/6/19	Print	Print
Signature 1430	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Nicholas Gress 8.7.19	Print	Print
Signature 0915	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☒ Disposal by Lab
- ☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-35225-1
SDG Number: 41247

Login Number: 35225
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35225-1
SDG: 41247

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35225-1
SDG: 41247

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35225-1
SDG: 41247

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-35225-1	41247-001	Water	08/06/19 11:40	08/07/19 09:15	
160-35225-2	41247-002	Water	08/06/19 11:42	08/07/19 09:15	
160-35225-3	41247-003	Water	08/06/19 09:00	08/07/19 09:15	
160-35225-4	41247-004	Water	08/06/19 11:45	08/07/19 09:15	
160-35225-5	41247-005	Water	08/06/19 11:50	08/07/19 09:15	

Client Sample ID: 41247-001

Date Collected: 08/06/19 11:40
Date Received: 08/07/19 09:15

Lab Sample ID: 160-35225-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			08/08/19 13:23	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			08/08/19 13:23	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			08/08/19 13:23	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/08/19 13:23	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			08/08/19 13:23	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			08/08/19 13:23	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			08/08/19 13:23	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			08/08/19 13:23	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			08/08/19 13:23	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			08/08/19 13:23	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			08/08/19 13:23	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			08/08/19 13:23	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			08/08/19 13:23	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			08/08/19 13:23	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			08/08/19 13:23	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			08/08/19 13:23	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			08/08/19 13:23	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			08/08/19 13:23	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			08/08/19 13:23	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			08/08/19 13:23	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			08/08/19 13:23	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			08/08/19 13:23	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			08/08/19 13:23	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/08/19 13:23	1
Benzene	0.50	U	0.50	0.10	ug/L			08/08/19 13:23	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			08/08/19 13:23	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 13:23	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 13:23	1
Bromoform	0.50	U	0.50	0.25	ug/L			08/08/19 13:23	1
Bromomethane	0.50	U	0.50	0.38	ug/L			08/08/19 13:23	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			08/08/19 13:23	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			08/08/19 13:23	1
Chloroethane	0.50	U	0.50	0.18	ug/L			08/08/19 13:23	1
Chloroform	**0.88**		0.50	0.24	ug/L			08/08/19 13:23	1
Chloromethane	0.50	U	0.50	0.20	ug/L			08/08/19 13:23	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			08/08/19 13:23	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			08/08/19 13:23	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 13:23	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			08/08/19 13:23	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			08/08/19 13:23	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			08/08/19 13:23	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			08/08/19 13:23	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			08/08/19 13:23	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/08/19 13:23	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			08/08/19 13:23	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			08/08/19 13:23	1
Naphthalene	0.67	U	0.67	0.57	ug/L			08/08/19 13:23	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			08/08/19 13:23	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			08/08/19 13:23	1

Client Sample ID: 41247-001

Lab Sample ID: 160-35225-1

Date Collected: 08/06/19 11:40
Matrix: Water
Date Received: 08/07/19 09:15

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			08/08/19 13:23	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/08/19 13:23	1
Styrene	0.50	U	0.50	0.21	ug/L			08/08/19 13:23	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/08/19 13:23	1
Tetrachloroethene	**11**		0.50	0.19	ug/L			08/08/19 13:23	1
Toluene	0.50	U	0.50	0.19	ug/L			08/08/19 13:23	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			08/08/19 13:23	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/08/19 13:23	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			08/08/19 13:23	1
Trichlorofluoromethane	**0.71**		0.50	0.16	ug/L			08/08/19 13:23	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/08/19 13:23	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			08/08/19 13:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*		*08/08/19 13:23*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*08/08/19 13:23*	*1*

Client Sample ID: 41247-002

Lab Sample ID: 160-35225-2

Date Collected: 08/06/19 11:42
Matrix: Water
Date Received: 08/07/19 09:15

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			08/08/19 13:45	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			08/08/19 13:45	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			08/08/19 13:45	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/08/19 13:45	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			08/08/19 13:45	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			08/08/19 13:45	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			08/08/19 13:45	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			08/08/19 13:45	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			08/08/19 13:45	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			08/08/19 13:45	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			08/08/19 13:45	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			08/08/19 13:45	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			08/08/19 13:45	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			08/08/19 13:45	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			08/08/19 13:45	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			08/08/19 13:45	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			08/08/19 13:45	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			08/08/19 13:45	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			08/08/19 13:45	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			08/08/19 13:45	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			08/08/19 13:45	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			08/08/19 13:45	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			08/08/19 13:45	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/08/19 13:45	1
Benzene	0.50	U	0.50	0.10	ug/L			08/08/19 13:45	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			08/08/19 13:45	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 13:45	1

Client Sample ID: 41247-002

Date Collected: 08/06/19 11:42
Date Received: 08/07/19 09:15

Lab Sample ID: 160-35225-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 13:45	1
Bromoform	0.50	U	0.50	0.25	ug/L			08/08/19 13:45	1
Bromomethane	0.50	U	0.50	0.38	ug/L			08/08/19 13:45	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			08/08/19 13:45	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			08/08/19 13:45	1
Chloroethane	0.50	U	0.50	0.18	ug/L			08/08/19 13:45	1
Chloroform	0.50	U	0.50	0.24	ug/L			08/08/19 13:45	1
Chloromethane	0.50	U	0.50	0.20	ug/L			08/08/19 13:45	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			08/08/19 13:45	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			08/08/19 13:45	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 13:45	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			08/08/19 13:45	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			08/08/19 13:45	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			08/08/19 13:45	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			08/08/19 13:45	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			08/08/19 13:45	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/08/19 13:45	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			08/08/19 13:45	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			08/08/19 13:45	1
Naphthalene	0.67	U	0.67	0.57	ug/L			08/08/19 13:45	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			08/08/19 13:45	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			08/08/19 13:45	1
o-Xylene	0.50	U	0.50	0.29	ug/L			08/08/19 13:45	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/08/19 13:45	1
Styrene	0.50	U	0.50	0.21	ug/L			08/08/19 13:45	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/08/19 13:45	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			08/08/19 13:45	1
Toluene	0.50	U	0.50	0.19	ug/L			08/08/19 13:45	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			08/08/19 13:45	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/08/19 13:45	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			08/08/19 13:45	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			08/08/19 13:45	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/08/19 13:45	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			08/08/19 13:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*08/08/19 13:45*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*08/08/19 13:45*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		08/09/19 13:09	08/15/19 17:02	2

Client Sample ID: 41247-003

Date Collected: 08/06/19 09:00
Date Received: 08/07/19 09:15

Lab Sample ID: 160-35225-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			08/08/19 11:30	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35225-1
SDG: 41247

Client Sample ID: 41247-003
Date Collected: 08/06/19 09:00
Date Received: 08/07/19 09:15

Lab Sample ID: 160-35225-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			08/08/19 11:30	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			08/08/19 11:30	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/08/19 11:30	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			08/08/19 11:30	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			08/08/19 11:30	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			08/08/19 11:30	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			08/08/19 11:30	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			08/08/19 11:30	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			08/08/19 11:30	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			08/08/19 11:30	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			08/08/19 11:30	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			08/08/19 11:30	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			08/08/19 11:30	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			08/08/19 11:30	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			08/08/19 11:30	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			08/08/19 11:30	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			08/08/19 11:30	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			08/08/19 11:30	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			08/08/19 11:30	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			08/08/19 11:30	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			08/08/19 11:30	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			08/08/19 11:30	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/08/19 11:30	1
Benzene	0.50	U	0.50	0.10	ug/L			08/08/19 11:30	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			08/08/19 11:30	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 11:30	1
Bromodichloromethane	**0.25**	**J**	0.50	0.14	ug/L			08/08/19 11:30	1
Bromoform	0.50	U	0.50	0.25	ug/L			08/08/19 11:30	1
Bromomethane	0.50	U	0.50	0.38	ug/L			08/08/19 11:30	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			08/08/19 11:30	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			08/08/19 11:30	1
Chloroethane	0.50	U	0.50	0.18	ug/L			08/08/19 11:30	1
Chloroform	**0.62**		0.50	0.24	ug/L			08/08/19 11:30	1
Chloromethane	0.50	U	0.50	0.20	ug/L			08/08/19 11:30	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			08/08/19 11:30	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			08/08/19 11:30	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 11:30	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			08/08/19 11:30	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			08/08/19 11:30	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			08/08/19 11:30	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			08/08/19 11:30	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			08/08/19 11:30	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/08/19 11:30	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			08/08/19 11:30	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			08/08/19 11:30	1
Naphthalene	0.67	U	0.67	0.57	ug/L			08/08/19 11:30	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			08/08/19 11:30	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			08/08/19 11:30	1
o-Xylene	0.50	U	0.50	0.29	ug/L			08/08/19 11:30	1

Client Sample ID: 41247-003

Date Collected: 08/06/19 09:00
Date Received: 08/07/19 09:15

Lab Sample ID: 160-35225-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/08/19 11:30	1
Styrene	0.50	U	0.50	0.21	ug/L			08/08/19 11:30	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/08/19 11:30	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			08/08/19 11:30	1
Toluene	0.50	U	0.50	0.19	ug/L			08/08/19 11:30	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			08/08/19 11:30	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/08/19 11:30	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			08/08/19 11:30	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			08/08/19 11:30	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/08/19 11:30	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			08/08/19 11:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*		*08/08/19 11:30*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*08/08/19 11:30*	*1*

Client Sample ID: 41247-004

Date Collected: 08/06/19 11:45
Date Received: 08/07/19 09:15

Lab Sample ID: 160-35225-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			08/08/19 14:08	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			08/08/19 14:08	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			08/08/19 14:08	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/08/19 14:08	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			08/08/19 14:08	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			08/08/19 14:08	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			08/08/19 14:08	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			08/08/19 14:08	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			08/08/19 14:08	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			08/08/19 14:08	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			08/08/19 14:08	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			08/08/19 14:08	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			08/08/19 14:08	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			08/08/19 14:08	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			08/08/19 14:08	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			08/08/19 14:08	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			08/08/19 14:08	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			08/08/19 14:08	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			08/08/19 14:08	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			08/08/19 14:08	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			08/08/19 14:08	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			08/08/19 14:08	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			08/08/19 14:08	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/08/19 14:08	1
Benzene	0.50	U	0.50	0.10	ug/L			08/08/19 14:08	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			08/08/19 14:08	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 14:08	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 14:08	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35225-1
SDG: 41247

Client Sample ID: 41247-004

Date Collected: 08/06/19 11:45
Date Received: 08/07/19 09:15

Lab Sample ID: 160-35225-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.25	ug/L			08/08/19 14:08	1
Bromomethane	0.50	U	0.50	0.38	ug/L			08/08/19 14:08	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			08/08/19 14:08	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			08/08/19 14:08	1
Chloroethane	0.50	U	0.50	0.18	ug/L			08/08/19 14:08	1
Chloroform	**0.29**	**J**	0.50	0.24	ug/L			08/08/19 14:08	1
Chloromethane	0.50	U	0.50	0.20	ug/L			08/08/19 14:08	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			08/08/19 14:08	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			08/08/19 14:08	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 14:08	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			08/08/19 14:08	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			08/08/19 14:08	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			08/08/19 14:08	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			08/08/19 14:08	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			08/08/19 14:08	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/08/19 14:08	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			08/08/19 14:08	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			08/08/19 14:08	1
Naphthalene	0.67	U	0.67	0.57	ug/L			08/08/19 14:08	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			08/08/19 14:08	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			08/08/19 14:08	1
o-Xylene	0.50	U	0.50	0.29	ug/L			08/08/19 14:08	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/08/19 14:08	1
Styrene	0.50	U	0.50	0.21	ug/L			08/08/19 14:08	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/08/19 14:08	1
Tetrachloroethene	**2.4**		0.50	0.19	ug/L			08/08/19 14:08	1
Toluene	0.50	U	0.50	0.19	ug/L			08/08/19 14:08	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			08/08/19 14:08	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/08/19 14:08	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			08/08/19 14:08	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			08/08/19 14:08	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/08/19 14:08	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			08/08/19 14:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*		*08/08/19 14:08*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*08/08/19 14:08*	*1*

Client Sample ID: 41247-005

Date Collected: 08/06/19 11:50
Date Received: 08/07/19 09:15

Lab Sample ID: 160-35225-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			08/08/19 14:30	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			08/08/19 14:30	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			08/08/19 14:30	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/08/19 14:30	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			08/08/19 14:30	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			08/08/19 14:30	1

Client Sample ID: 41247-005
Date Collected: 08/06/19 11:50
Date Received: 08/07/19 09:15

Lab Sample ID: 160-35225-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			08/08/19 14:30	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			08/08/19 14:30	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			08/08/19 14:30	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			08/08/19 14:30	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			08/08/19 14:30	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			08/08/19 14:30	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			08/08/19 14:30	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			08/08/19 14:30	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			08/08/19 14:30	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			08/08/19 14:30	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			08/08/19 14:30	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			08/08/19 14:30	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			08/08/19 14:30	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			08/08/19 14:30	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			08/08/19 14:30	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			08/08/19 14:30	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			08/08/19 14:30	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/08/19 14:30	1
Benzene	0.50	U	0.50	0.10	ug/L			08/08/19 14:30	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			08/08/19 14:30	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 14:30	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 14:30	1
Bromoform	0.50	U	0.50	0.25	ug/L			08/08/19 14:30	1
Bromomethane	0.50	U	0.50	0.38	ug/L			08/08/19 14:30	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			08/08/19 14:30	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			08/08/19 14:30	1
Chloroethane	0.50	U	0.50	0.18	ug/L			08/08/19 14:30	1
Chloroform	0.50	U	0.50	0.24	ug/L			08/08/19 14:30	1
Chloromethane	0.50	U	0.50	0.20	ug/L			08/08/19 14:30	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			08/08/19 14:30	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			08/08/19 14:30	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 14:30	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			08/08/19 14:30	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			08/08/19 14:30	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			08/08/19 14:30	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			08/08/19 14:30	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			08/08/19 14:30	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/08/19 14:30	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			08/08/19 14:30	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			08/08/19 14:30	1
Naphthalene	0.67	U	0.67	0.57	ug/L			08/08/19 14:30	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			08/08/19 14:30	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			08/08/19 14:30	1
o-Xylene	0.50	U	0.50	0.29	ug/L			08/08/19 14:30	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/08/19 14:30	1
Styrene	0.50	U	0.50	0.21	ug/L			08/08/19 14:30	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/08/19 14:30	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			08/08/19 14:30	1
Toluene	0.50	U	0.50	0.19	ug/L			08/08/19 14:30	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35225-1
SDG: 41247

Client Sample ID: 41247-005
Date Collected: 08/06/19 11:50
Date Received: 08/07/19 09:15

Lab Sample ID: 160-35225-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			08/08/19 14:30	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/08/19 14:30	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			08/08/19 14:30	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			08/08/19 14:30	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/08/19 14:30	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			08/08/19 14:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*08/08/19 14:30*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*08/08/19 14:30*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-438862/6
Matrix: Water
Analysis Batch: 438862

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			08/08/19 11:07	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			08/08/19 11:07	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			08/08/19 11:07	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/08/19 11:07	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			08/08/19 11:07	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			08/08/19 11:07	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			08/08/19 11:07	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			08/08/19 11:07	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			08/08/19 11:07	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			08/08/19 11:07	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			08/08/19 11:07	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			08/08/19 11:07	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			08/08/19 11:07	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			08/08/19 11:07	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			08/08/19 11:07	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			08/08/19 11:07	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			08/08/19 11:07	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			08/08/19 11:07	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			08/08/19 11:07	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			08/08/19 11:07	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			08/08/19 11:07	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			08/08/19 11:07	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			08/08/19 11:07	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/08/19 11:07	1
Benzene	0.50	U	0.50	0.10	ug/L			08/08/19 11:07	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			08/08/19 11:07	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 11:07	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 11:07	1
Bromoform	0.50	U	0.50	0.25	ug/L			08/08/19 11:07	1
Bromomethane	0.50	U	0.50	0.38	ug/L			08/08/19 11:07	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			08/08/19 11:07	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			08/08/19 11:07	1
Chloroethane	0.50	U	0.50	0.18	ug/L			08/08/19 11:07	1
Chloroform	0.50	U	0.50	0.24	ug/L			08/08/19 11:07	1
Chloromethane	0.50	U	0.50	0.20	ug/L			08/08/19 11:07	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			08/08/19 11:07	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			08/08/19 11:07	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/08/19 11:07	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			08/08/19 11:07	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			08/08/19 11:07	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			08/08/19 11:07	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			08/08/19 11:07	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			08/08/19 11:07	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/08/19 11:07	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			08/08/19 11:07	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			08/08/19 11:07	1
Naphthalene	0.67	U	0.67	0.57	ug/L			08/08/19 11:07	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			08/08/19 11:07	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-438862/6
Matrix: Water
Analysis Batch: 438862

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			08/08/19 11:07	1
o-Xylene	0.50	U	0.50	0.29	ug/L			08/08/19 11:07	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/08/19 11:07	1
Styrene	0.50	U	0.50	0.21	ug/L			08/08/19 11:07	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/08/19 11:07	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			08/08/19 11:07	1
Toluene	0.50	U	0.50	0.19	ug/L			08/08/19 11:07	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			08/08/19 11:07	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/08/19 11:07	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			08/08/19 11:07	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			08/08/19 11:07	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/08/19 11:07	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			08/08/19 11:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*08/08/19 11:07*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*08/08/19 11:07*	*1*

Lab Sample ID: LCS 160-438862/4
Matrix: Water
Analysis Batch: 438862

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	9.87		ug/L		99	70 - 130
1,1,1-Trichloroethane	10.0	9.82		ug/L		98	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.21		ug/L		92	70 - 130
1,1,2-Trichloroethane	10.0	9.25		ug/L		92	70 - 130
1,1-Dichloroethane	10.0	9.20		ug/L		92	70 - 130
1,1-Dichloroethene	10.0	9.43		ug/L		94	70 - 130
1,1-Dichloropropene	10.0	9.63		ug/L		96	70 - 130
1,2,3-Trichlorobenzene	10.0	9.38		ug/L		94	70 - 130
1,2,3-Trichloropropane	10.0	8.62		ug/L		86	70 - 130
1,2,4-Trichlorobenzene	10.0	9.52		ug/L		95	70 - 130
1,2,4-Trimethylbenzene	10.0	9.98		ug/L		100	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	8.71		ug/L		87	70 - 130
1,2-Dibromoethane	10.0	9.40		ug/L		94	70 - 130
1,2-Dichlorobenzene	10.0	9.86		ug/L		99	70 - 130
1,2-Dichloroethane	10.0	9.09		ug/L		91	70 - 130
1,2-Dichloropropane	10.0	9.22		ug/L		92	70 - 130
1,3,5-Trimethylbenzene	10.0	10.2		ug/L		102	70 - 130
1,3-Dichlorobenzene	10.0	10.0		ug/L		100	70 - 130
1,3-Dichloropropane	10.0	9.09		ug/L		91	70 - 130
1,4-Dichlorobenzene	10.0	9.90		ug/L		99	70 - 130
2,2-Dichloropropane	10.0	11.7		ug/L		117	70 - 130
2-Chlorotoluene	10.0	9.66		ug/L		97	70 - 130
4-Chlorotoluene	10.0	9.88		ug/L		99	70 - 130
4-Isopropyltoluene	10.0	10.0		ug/L		100	70 - 130
Benzene	10.0	9.25		ug/L		92	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-438862/4
Matrix: Water
Analysis Batch: 438862

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.0		ug/L		100	70 - 130
Bromochloromethane	10.0	9.55		ug/L		96	70 - 130
Bromodichloromethane	10.0	9.47		ug/L		95	70 - 130
Bromoform	10.0	10.1		ug/L		101	70 - 130
Bromomethane	10.0	9.78		ug/L		98	70 - 130
Carbon tetrachloride	10.0	9.83		ug/L		98	70 - 130
Chlorobenzene	10.0	9.97		ug/L		100	70 - 130
Chloroethane	10.0	9.88		ug/L		99	70 - 130
Chloroform	10.0	9.55		ug/L		96	70 - 130
Chloromethane	10.0	8.52		ug/L		85	70 - 130
cis-1,2-Dichloroethene	10.0	9.60		ug/L		96	70 - 130
cis-1,3-Dichloropropene	10.0	9.44		ug/L		94	70 - 130
Dibromochloromethane	10.0	9.73		ug/L		97	70 - 130
Dibromomethane	10.0	9.14		ug/L		91	70 - 130
Dichlorodifluoromethane	10.0	8.10		ug/L		81	70 - 130
Ethylbenzene	10.0	9.91		ug/L		99	70 - 130
Hexachlorobutadiene	10.0	10.1		ug/L		101	70 - 130
Isopropylbenzene	10.0	10.1		ug/L		101	70 - 130
Methylene Chloride	10.0	8.99		ug/L		90	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.48		ug/L		95	70 - 130
m-Xylene & p-Xylene	20.0	20.1		ug/L		100	70 - 130
Naphthalene	10.0	8.77		ug/L		88	70 - 130
n-Butylbenzene	10.0	9.89		ug/L		99	70 - 130
N-Propylbenzene	10.0	10.1		ug/L		101	70 - 130
o-Xylene	10.0	10.1		ug/L		101	70 - 130
sec-Butylbenzene	10.0	9.80		ug/L		98	70 - 130
Styrene	10.0	10.1		ug/L		101	70 - 130
tert-Butylbenzene	10.0	10.1		ug/L		101	70 - 130
Tetrachloroethene	10.0	9.61		ug/L		96	70 - 130
Toluene	10.0	9.76		ug/L		98	70 - 130
trans-1,2-Dichloroethene	10.0	9.79		ug/L		98	70 - 130
trans-1,3-Dichloropropene	10.0	9.96		ug/L		100	70 - 130
Trichloroethene	10.0	9.20		ug/L		92	70 - 130
Trichlorofluoromethane	10.0	10.0		ug/L		100	70 - 130
Vinyl chloride	10.0	8.73		ug/L		87	70 - 130
Xylenes, Total	30.0	30.2		ug/L		101	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*97*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-439084/1-A
Matrix: Water
Analysis Batch: 439709

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 439084

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		08/09/19 13:09	08/15/19 16:40	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-439084/2-A
Matrix: Water
Analysis Batch: 439709

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 439084

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	205		ug/L		103	80 - 120		

Lab Sample ID: 160-35225-2 MS
Matrix: Water
Analysis Batch: 439709

Client Sample ID: 41247-002
Prep Type: Total/NA
Prep Batch: 439084

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	212		ug/L		106	75 - 125		

Lab Sample ID: 160-35225-2 MSD
Matrix: Water
Analysis Batch: 439709

Client Sample ID: 41247-002
Prep Type: Total/NA
Prep Batch: 439084

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	207		ug/L		103	75 - 125	3	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35225-1
SDG: 41247

GC/MS VOA

Analysis Batch: 438862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35225-1	41247-001	Total/NA	Water	524.2	
160-35225-2	41247-002	Total/NA	Water	524.2	
160-35225-3	41247-003	Total/NA	Water	524.2	
160-35225-4	41247-004	Total/NA	Water	524.2	
160-35225-5	41247-005	Total/NA	Water	524.2	
MB 160-438862/6	Method Blank	Total/NA	Water	524.2	
LCS 160-438862/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 439084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35225-2	41247-002	Total/NA	Water	3010A	
MB 160-439084/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-439084/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-35225-2 MS	41247-002	Total/NA	Water	3010A	
160-35225-2 MSD	41247-002	Total/NA	Water	3010A	

Analysis Batch: 439709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35225-2	41247-002	Total/NA	Water	6020A	439084
MB 160-439084/1-A	Method Blank	Total/NA	Water	6020A	439084
LCS 160-439084/2-A	Lab Control Sample	Total/NA	Water	6020A	439084
160-35225-2 MS	41247-002	Total/NA	Water	6020A	439084
160-35225-2 MSD	41247-002	Total/NA	Water	6020A	439084

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35225-1
SDG: 41247

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-35225-1	41247-001	102	97
160-35225-2	41247-002	106	94
160-35225-3	41247-003	101	94
160-35225-4	41247-004	100	95
160-35225-5	41247-005	103	95
LCS 160-438862/4	Lab Control Sample	97	100
MB 160-438862/6	Method Blank	103	95

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-35403-1
Laboratory Sample Delivery Group: 41281
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
9/4/2019 1:06:04 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-35403-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-35403-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client.

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 8/22/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.1° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41281-001 (160-35403-1) and 41281-002 (160-35403-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 09/01/2019.

Job ID: 160-35403-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

The continuing calibration verification (CCVIS) associated with batch 160-441574 recovered above the upper control limit for Bromomethane and Chloroethane. The samples associated with this CCV excursion were non-detects for the affected analytes; therefore, the data was reported: 41281-001 (160-35403-1), 41281-002 (160-35403-2), and (CCVIS 160-441574/3).

The continuing calibration verification (CCVIS) associated with batch 160-441574 recovered outside of lower control limits for Dichlorodifluoromethane. A reporting limit standard (LOQV) was analyzed, and the target analyte was detected. Dichlorodifluoromethane is not part of the client's data quality objectives; therefore, results were reported with this narrative: 41281-001 (160-35403-1), 41281-002 (160-35403-2), (CCVIS 160-441574/3), and (LOQV 160-441574/5).

The laboratory control sample (LCS) for analytical batch 160-441574 recovered outside of upper control limits for the following analytes: Bromomethane and Chloroethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data was reported.

The laboratory control sample (LCS) associated with batch 160-441574 recovered outside of lower control limits for Dichlorodifluoromethane. Dichlorodifluoromethane is not part of the client's data quality objectives; therefore, results were reported with this narrative: 41281-001 (160-35403-1), 41281-002 (160-35403-2), and (LCS 160-441574/4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41281-002 (160-35403-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The sample was prepared on 08/26/2019 and analyzed on 08/27/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. Therefore, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41281

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Min	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD USE TB-1 From COC # 41279

Type UID	Smp	Coll	Sample Information: Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information: Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	8/21/19	1120	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	1125	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	1125	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0			W	Trip Blank	40 ML	SC	3	HCL					X					

160-35403 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print J Min 8/21/19	Print	Print
Signature 1300	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print L Harris 8/22/19	Print	Print
Signature 0900	Signature	Signature

Contractor Lab Sample Disposal: ❑ Return To Client ☑ Disposal by Lab ❑ Archive For ____ Months

Data Package: ❑ Full ☑ Summary

Turn-Around Time Required: ❑ Rush (1 Day) ☑ 14 Days ❑ 30 Days ❑ 7 Days ❑ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-35403-1
SDG Number: 41281

Login Number: 35403
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35403-1
SDG: 41281

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35403-1
SDG: 41281

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35403-1
SDG: 41281

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-35403-1	41281-001	Water	08/20/19 11:20	08/22/19 09:00	
160-35403-2	41281-002	Water	08/20/19 11:25	08/22/19 09:00	

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35403-1
SDG: 41281

Client Sample ID: 41281-001
Date Collected: 08/20/19 11:20
Date Received: 08/22/19 09:00

Lab Sample ID: 160-35403-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			09/01/19 12:04	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			09/01/19 12:04	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			09/01/19 12:04	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/01/19 12:04	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			09/01/19 12:04	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			09/01/19 12:04	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			09/01/19 12:04	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			09/01/19 12:04	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			09/01/19 12:04	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/01/19 12:04	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			09/01/19 12:04	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			09/01/19 12:04	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			09/01/19 12:04	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			09/01/19 12:04	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			09/01/19 12:04	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			09/01/19 12:04	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			09/01/19 12:04	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			09/01/19 12:04	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			09/01/19 12:04	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			09/01/19 12:04	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			09/01/19 12:04	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			09/01/19 12:04	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			09/01/19 12:04	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/01/19 12:04	1
Benzene	0.50	U	0.50	0.10	ug/L			09/01/19 12:04	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			09/01/19 12:04	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			09/01/19 12:04	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			09/01/19 12:04	1
Bromoform	0.50	U	0.50	0.25	ug/L			09/01/19 12:04	1
Bromomethane	0.50	U	0.50	0.38	ug/L			09/01/19 12:04	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			09/01/19 12:04	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			09/01/19 12:04	1
Chloroethane	0.50	U	0.50	0.18	ug/L			09/01/19 12:04	1
Chloroform	**0.82**		0.50	0.24	ug/L			09/01/19 12:04	1
Chloromethane	**0.22**	**J**	0.50	0.20	ug/L			09/01/19 12:04	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/01/19 12:04	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			09/01/19 12:04	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/01/19 12:04	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			09/01/19 12:04	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			09/01/19 12:04	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			09/01/19 12:04	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			09/01/19 12:04	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			09/01/19 12:04	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/01/19 12:04	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			09/01/19 12:04	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			09/01/19 12:04	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/01/19 12:04	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/01/19 12:04	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			09/01/19 12:04	1

Client Sample ID: 41281-001

Date Collected: 08/20/19 11:20
Date Received: 08/22/19 09:00

Lab Sample ID: 160-35403-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			09/01/19 12:04	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/01/19 12:04	1
Styrene	0.50	U	0.50	0.21	ug/L			09/01/19 12:04	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/01/19 12:04	1
Tetrachloroethene	**9.0**		0.50	0.19	ug/L			09/01/19 12:04	1
Toluene	0.50	U	0.50	0.19	ug/L			09/01/19 12:04	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/01/19 12:04	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/01/19 12:04	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			09/01/19 12:04	1
Trichlorofluoromethane	**0.83**		0.50	0.16	ug/L			09/01/19 12:04	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/01/19 12:04	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			09/01/19 12:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*09/01/19 12:04*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*09/01/19 12:04*	*1*

Client Sample ID: 41281-002

Date Collected: 08/20/19 11:25
Date Received: 08/22/19 09:00

Lab Sample ID: 160-35403-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			09/01/19 12:27	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			09/01/19 12:27	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			09/01/19 12:27	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/01/19 12:27	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			09/01/19 12:27	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			09/01/19 12:27	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			09/01/19 12:27	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			09/01/19 12:27	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			09/01/19 12:27	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/01/19 12:27	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			09/01/19 12:27	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			09/01/19 12:27	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			09/01/19 12:27	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			09/01/19 12:27	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			09/01/19 12:27	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			09/01/19 12:27	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			09/01/19 12:27	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			09/01/19 12:27	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			09/01/19 12:27	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			09/01/19 12:27	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			09/01/19 12:27	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			09/01/19 12:27	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			09/01/19 12:27	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/01/19 12:27	1
Benzene	0.50	U	0.50	0.10	ug/L			09/01/19 12:27	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			09/01/19 12:27	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			09/01/19 12:27	1

Client Sample ID: 41281-002
Date Collected: 08/20/19 11:25
Date Received: 08/22/19 09:00

Lab Sample ID: 160-35403-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			09/01/19 12:27	1
Bromoform	0.50	U	0.50	0.25	ug/L			09/01/19 12:27	1
Bromomethane	0.50	U	0.50	0.38	ug/L			09/01/19 12:27	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			09/01/19 12:27	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			09/01/19 12:27	1
Chloroethane	0.50	U	0.50	0.18	ug/L			09/01/19 12:27	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/01/19 12:27	1
Chloromethane	**0.22**	**J**	0.50	0.20	ug/L			09/01/19 12:27	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/01/19 12:27	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			09/01/19 12:27	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/01/19 12:27	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			09/01/19 12:27	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			09/01/19 12:27	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			09/01/19 12:27	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			09/01/19 12:27	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			09/01/19 12:27	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/01/19 12:27	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			09/01/19 12:27	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			09/01/19 12:27	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/01/19 12:27	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/01/19 12:27	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			09/01/19 12:27	1
o-Xylene	0.50	U	0.50	0.29	ug/L			09/01/19 12:27	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/01/19 12:27	1
Styrene	0.50	U	0.50	0.21	ug/L			09/01/19 12:27	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/01/19 12:27	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			09/01/19 12:27	1
Toluene	0.50	U	0.50	0.19	ug/L			09/01/19 12:27	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/01/19 12:27	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/01/19 12:27	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			09/01/19 12:27	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			09/01/19 12:27	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/01/19 12:27	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			09/01/19 12:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*107*		*70 - 130*		*09/01/19 12:27*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*09/01/19 12:27*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		08/26/19 16:04	08/27/19 20:11	2

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-441574/6
Matrix: Water
Analysis Batch: 441574

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			09/01/19 10:54	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			09/01/19 10:54	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			09/01/19 10:54	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/01/19 10:54	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			09/01/19 10:54	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			09/01/19 10:54	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			09/01/19 10:54	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			09/01/19 10:54	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			09/01/19 10:54	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/01/19 10:54	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			09/01/19 10:54	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			09/01/19 10:54	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			09/01/19 10:54	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			09/01/19 10:54	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			09/01/19 10:54	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			09/01/19 10:54	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			09/01/19 10:54	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			09/01/19 10:54	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			09/01/19 10:54	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			09/01/19 10:54	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			09/01/19 10:54	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			09/01/19 10:54	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			09/01/19 10:54	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/01/19 10:54	1
Benzene	0.50	U	0.50	0.10	ug/L			09/01/19 10:54	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			09/01/19 10:54	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			09/01/19 10:54	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			09/01/19 10:54	1
Bromoform	0.50	U	0.50	0.25	ug/L			09/01/19 10:54	1
Bromomethane	0.50	U	0.50	0.38	ug/L			09/01/19 10:54	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			09/01/19 10:54	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			09/01/19 10:54	1
Chloroethane	0.50	U	0.50	0.18	ug/L			09/01/19 10:54	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/01/19 10:54	1
Chloromethane	0.50	U	0.50	0.20	ug/L			09/01/19 10:54	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/01/19 10:54	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			09/01/19 10:54	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/01/19 10:54	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			09/01/19 10:54	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			09/01/19 10:54	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			09/01/19 10:54	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			09/01/19 10:54	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			09/01/19 10:54	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/01/19 10:54	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			09/01/19 10:54	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			09/01/19 10:54	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/01/19 10:54	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/01/19 10:54	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-441574/6
Matrix: Water
Analysis Batch: 441574

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			09/01/19 10:54	1
o-Xylene	0.50	U	0.50	0.29	ug/L			09/01/19 10:54	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/01/19 10:54	1
Styrene	0.50	U	0.50	0.21	ug/L			09/01/19 10:54	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/01/19 10:54	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			09/01/19 10:54	1
Toluene	0.50	U	0.50	0.19	ug/L			09/01/19 10:54	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/01/19 10:54	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/01/19 10:54	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			09/01/19 10:54	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			09/01/19 10:54	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/01/19 10:54	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			09/01/19 10:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*09/01/19 10:54*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*09/01/19 10:54*	*1*

Lab Sample ID: LCS 160-441574/4
Matrix: Water
Analysis Batch: 441574

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	11.3		ug/L		113	70 - 130
1,1,1-Trichloroethane	10.0	10.4		ug/L		104	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.73		ug/L		97	70 - 130
1,1,2-Trichloroethane	10.0	9.66		ug/L		97	70 - 130
1,1-Dichloroethane	10.0	9.03		ug/L		90	70 - 130
1,1-Dichloroethene	10.0	8.22		ug/L		82	70 - 130
1,1-Dichloropropene	10.0	9.96		ug/L		100	70 - 130
1,2,3-Trichlorobenzene	10.0	10.5		ug/L		105	70 - 130
1,2,3-Trichloropropane	10.0	9.03		ug/L		90	70 - 130
1,2,4-Trichlorobenzene	10.0	10.8		ug/L		108	70 - 130
1,2,4-Trimethylbenzene	10.0	10.4		ug/L		104	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	10.4		ug/L		104	70 - 130
1,2-Dibromoethane	10.0	10.1		ug/L		101	70 - 130
1,2-Dichlorobenzene	10.0	9.88		ug/L		99	70 - 130
1,2-Dichloroethane	10.0	9.74		ug/L		97	70 - 130
1,2-Dichloropropane	10.0	9.91		ug/L		99	70 - 130
1,3,5-Trimethylbenzene	10.0	10.5		ug/L		105	70 - 130
1,3-Dichlorobenzene	10.0	9.90		ug/L		99	70 - 130
1,3-Dichloropropane	10.0	9.75		ug/L		98	70 - 130
1,4-Dichlorobenzene	10.0	9.60		ug/L		96	70 - 130
2,2-Dichloropropane	10.0	9.59		ug/L		96	70 - 130
2-Chlorotoluene	10.0	10.1		ug/L		101	70 - 130
4-Chlorotoluene	10.0	10.0		ug/L		100	70 - 130
4-Isopropyltoluene	10.0	10.7		ug/L		107	70 - 130
Benzene	10.0	9.66		ug/L		97	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-441574/4
Matrix: Water
Analysis Batch: 441574

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	9.74		ug/L		97	70 - 130
Bromochloromethane	10.0	9.98		ug/L		100	70 - 130
Bromodichloromethane	10.0	10.9		ug/L		109	70 - 130
Bromoform	10.0	11.1		ug/L		111	70 - 130
Bromomethane	10.0	14.3		ug/L		143	70 - 130
Carbon tetrachloride	10.0	12.3		ug/L		123	70 - 130
Chlorobenzene	10.0	9.58		ug/L		96	70 - 130
Chloroethane	10.0	13.6		ug/L		136	70 - 130
Chloroform	10.0	9.43		ug/L		94	70 - 130
Chloromethane	10.0	10.3		ug/L		103	70 - 130
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	70 - 130
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	70 - 130
Dibromochloromethane	10.0	11.2		ug/L		112	70 - 130
Dibromomethane	10.0	9.70		ug/L		97	70 - 130
Dichlorodifluoromethane	10.0	6.94		ug/L		69	70 - 130
Ethylbenzene	10.0	9.78		ug/L		98	70 - 130
Hexachlorobutadiene	10.0	10.0		ug/L		100	70 - 130
Isopropylbenzene	10.0	10.4		ug/L		104	70 - 130
Methylene Chloride	10.0	8.94		ug/L		89	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	11.1		ug/L		111	70 - 130
m-Xylene & p-Xylene	20.0	20.0		ug/L		100	70 - 130
Naphthalene	10.0	10.1		ug/L		101	70 - 130
n-Butylbenzene	10.0	10.5		ug/L		105	70 - 130
N-Propylbenzene	10.0	10.3		ug/L		103	70 - 130
o-Xylene	10.0	10.4		ug/L		104	70 - 130
sec-Butylbenzene	10.0	10.2		ug/L		102	70 - 130
Styrene	10.0	10.4		ug/L		104	70 - 130
tert-Butylbenzene	10.0	10.3		ug/L		103	70 - 130
Tetrachloroethene	10.0	9.75		ug/L		97	70 - 130
Toluene	10.0	10.1		ug/L		101	70 - 130
trans-1,2-Dichloroethene	10.0	9.49		ug/L		95	70 - 130
trans-1,3-Dichloropropene	10.0	10.4		ug/L		104	70 - 130
Trichloroethene	10.0	9.70		ug/L		97	70 - 130
Trichlorofluoromethane	10.0	11.8		ug/L		118	70 - 130
Vinyl chloride	10.0	11.7		ug/L		117	70 - 130
Xylenes, Total	30.0	30.4		ug/L		101	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-440764/1-A
Matrix: Water
Analysis Batch: 441045

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 440764

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		08/26/19 16:04	08/27/19 19:38	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-440764/2-A
Matrix: Water
Analysis Batch: 441045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 440764

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	187		ug/L		93	80 - 120		

Lab Sample ID: 160-35403-2 MS
Matrix: Water
Analysis Batch: 441045

Client Sample ID: 41281-002
Prep Type: Total/NA
Prep Batch: 440764

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	185		ug/L		93	75 - 125		

Lab Sample ID: 160-35403-2 MSD
Matrix: Water
Analysis Batch: 441045

Client Sample ID: 41281-002
Prep Type: Total/NA
Prep Batch: 440764

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	188		ug/L		94	75 - 125	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35403-1
SDG: 41281

GC/MS VOA

Analysis Batch: 441574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35403-1	41281-001	Total/NA	Water	524.2	
160-35403-2	41281-002	Total/NA	Water	524.2	
MB 160-441574/6	Method Blank	Total/NA	Water	524.2	
LCS 160-441574/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 440764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35403-2	41281-002	Total/NA	Water	3010A	
MB 160-440764/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-440764/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-35403-2 MS	41281-002	Total/NA	Water	3010A	
160-35403-2 MSD	41281-002	Total/NA	Water	3010A	

Analysis Batch: 441045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35403-2	41281-002	Total/NA	Water	6020A	440764
MB 160-440764/1-A	Method Blank	Total/NA	Water	6020A	440764
LCS 160-440764/2-A	Lab Control Sample	Total/NA	Water	6020A	440764
160-35403-2 MS	41281-002	Total/NA	Water	6020A	440764
160-35403-2 MSD	41281-002	Total/NA	Water	6020A	440764

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35403-1
SDG: 41281

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-35403-1	41281-001	106	95
160-35403-2	41281-002	107	97
LCS 160-441574/4	Lab Control Sample	99	103
MB 160-441574/6	Method Blank	106	97

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-35519-1
Laboratory Sample Delivery Group: 41317
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
9/13/2019 11:58:21 AM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-35519-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-35519-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 9/5/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41317-001 (160-35519-1), 41317-002 (160-35519-2) and 41317-003 (160-35519-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 09/11/2019.

Job ID: 160-35519-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-442667:
The continuing calibration verification (CCVIS) recovered above the upper control limit for the following target analytes: 1,2,4-Trichlorobenzene, 1,2-Dibromo-3-Chloropropane, Bromomethane, and Chloroethane. The samples associated with this CCV excursion were non-detect for the affected analytes; therefore, the data was reported: 41317-001 (160-35519-1), 41317-002 (160-35519-2), 41317-003 (160-35519-3), and (CCVIS 160-442667/3).

The laboratory control sample (LCS) for analytical batch 160-442667 recovered outside of upper control limits for the following analytes: Bromomethane and Chloroethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data was reported: (LCS 160-442667/4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 41317-002 (160-35519-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 09/09/2019 and analyzed on 09/11/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this process. Therefore, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41317

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23398 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: T Milly	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD Use TB-1 For Coc # 41318, ~~41315~~ (1)

Type UID	Smp	Coll	Sample Information: Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information: Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	9/4/19	1130	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1132	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1132	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Tim Milligan 9/4/19	Print	Print
Signature 1300	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Nicholas Press 9-5-19	Print	Print
Signature [illegible] 0920	Signature	Signature

Contractor Lab Sample Disposal:
❑ Return To Client ☑ Disposal by
❑ Archive For ____ Months

Data Package: ❑ Full ☑ Summary

Turn-Around Time Required:
❑ Rush (1 Day) ☑ 14 Days ❑ 30 Days
❑ 7 Days ❑ Other ( )

160-35519 Chain of Custody

BNL F 3101F (rev. 6/13) Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-35519-1
SDG Number: 41317

Login Number: 35519
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35519-1
SDG: 41317

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35519-1
SDG: 41317

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35519-1
SDG: 41317

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-35519-1	41317-001	Water	09/04/19 11:30	09/05/19 09:20	
160-35519-2	41317-002	Water	09/04/19 11:32	09/05/19 09:20	
160-35519-3	41317-003	Water	09/04/19 09:00	09/05/19 09:20	

Client Sample ID: 41317-001

Date Collected: 09/04/19 11:30
Date Received: 09/05/19 09:20

Lab Sample ID: 160-35519-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			09/11/19 12:32	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			09/11/19 12:32	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			09/11/19 12:32	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/11/19 12:32	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			09/11/19 12:32	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			09/11/19 12:32	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			09/11/19 12:32	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			09/11/19 12:32	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			09/11/19 12:32	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/11/19 12:32	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			09/11/19 12:32	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			09/11/19 12:32	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			09/11/19 12:32	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			09/11/19 12:32	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			09/11/19 12:32	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			09/11/19 12:32	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			09/11/19 12:32	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			09/11/19 12:32	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			09/11/19 12:32	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			09/11/19 12:32	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			09/11/19 12:32	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			09/11/19 12:32	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			09/11/19 12:32	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/11/19 12:32	1
Benzene	0.50	U	0.50	0.10	ug/L			09/11/19 12:32	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			09/11/19 12:32	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			09/11/19 12:32	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			09/11/19 12:32	1
Bromoform	0.50	U	0.50	0.25	ug/L			09/11/19 12:32	1
Bromomethane	0.50	U	0.50	0.38	ug/L			09/11/19 12:32	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			09/11/19 12:32	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			09/11/19 12:32	1
Chloroethane	0.50	U	0.50	0.18	ug/L			09/11/19 12:32	1
Chloroform	**0.86**		0.50	0.24	ug/L			09/11/19 12:32	1
Chloromethane	0.50	U	0.50	0.20	ug/L			09/11/19 12:32	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/11/19 12:32	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			09/11/19 12:32	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/11/19 12:32	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			09/11/19 12:32	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			09/11/19 12:32	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			09/11/19 12:32	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			09/11/19 12:32	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			09/11/19 12:32	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/11/19 12:32	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			09/11/19 12:32	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			09/11/19 12:32	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/11/19 12:32	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/11/19 12:32	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			09/11/19 12:32	1

Client Sample ID: 41317-001

Date Collected: 09/04/19 11:30
Date Received: 09/05/19 09:20

Lab Sample ID: 160-35519-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			09/11/19 12:32	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/11/19 12:32	1
Styrene	0.50	U	0.50	0.21	ug/L			09/11/19 12:32	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/11/19 12:32	1
Tetrachloroethene	**8.3**		0.50	0.19	ug/L			09/11/19 12:32	1
Toluene	0.50	U	0.50	0.19	ug/L			09/11/19 12:32	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/11/19 12:32	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/11/19 12:32	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			09/11/19 12:32	1
Trichlorofluoromethane	**0.76**		0.50	0.16	ug/L			09/11/19 12:32	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/11/19 12:32	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			09/11/19 12:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*93*		*70 - 130*		*09/11/19 12:32*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*09/11/19 12:32*	*1*

Client Sample ID: 41317-002

Date Collected: 09/04/19 11:32
Date Received: 09/05/19 09:20

Lab Sample ID: 160-35519-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			09/11/19 12:56	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			09/11/19 12:56	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			09/11/19 12:56	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/11/19 12:56	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			09/11/19 12:56	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			09/11/19 12:56	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			09/11/19 12:56	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			09/11/19 12:56	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			09/11/19 12:56	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/11/19 12:56	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			09/11/19 12:56	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			09/11/19 12:56	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			09/11/19 12:56	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			09/11/19 12:56	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			09/11/19 12:56	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			09/11/19 12:56	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			09/11/19 12:56	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			09/11/19 12:56	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			09/11/19 12:56	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			09/11/19 12:56	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			09/11/19 12:56	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			09/11/19 12:56	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			09/11/19 12:56	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/11/19 12:56	1
Benzene	0.50	U	0.50	0.10	ug/L			09/11/19 12:56	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			09/11/19 12:56	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			09/11/19 12:56	1

Client Sample ID: 41317-002

Date Collected: 09/04/19 11:32
Date Received: 09/05/19 09:20

Lab Sample ID: 160-35519-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			09/11/19 12:56	1
Bromoform	0.50	U	0.50	0.25	ug/L			09/11/19 12:56	1
Bromomethane	0.50	U	0.50	0.38	ug/L			09/11/19 12:56	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			09/11/19 12:56	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			09/11/19 12:56	1
Chloroethane	0.50	U	0.50	0.18	ug/L			09/11/19 12:56	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/11/19 12:56	1
Chloromethane	0.50	U	0.50	0.20	ug/L			09/11/19 12:56	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/11/19 12:56	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			09/11/19 12:56	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/11/19 12:56	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			09/11/19 12:56	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			09/11/19 12:56	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			09/11/19 12:56	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			09/11/19 12:56	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			09/11/19 12:56	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/11/19 12:56	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			09/11/19 12:56	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			09/11/19 12:56	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/11/19 12:56	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/11/19 12:56	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			09/11/19 12:56	1
o-Xylene	0.50	U	0.50	0.29	ug/L			09/11/19 12:56	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/11/19 12:56	1
Styrene	0.50	U	0.50	0.21	ug/L			09/11/19 12:56	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/11/19 12:56	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			09/11/19 12:56	1
Toluene	0.50	U	0.50	0.19	ug/L			09/11/19 12:56	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/11/19 12:56	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/11/19 12:56	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			09/11/19 12:56	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			09/11/19 12:56	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/11/19 12:56	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			09/11/19 12:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*		*09/11/19 12:56*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*09/11/19 12:56*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		09/09/19 14:29	09/11/19 06:23	2

Client Sample ID: 41317-003

Date Collected: 09/04/19 09:00
Date Received: 09/05/19 09:20

Lab Sample ID: 160-35519-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			09/11/19 13:20	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35519-1
SDG: 41317

Client Sample ID: 41317-003
Date Collected: 09/04/19 09:00
Date Received: 09/05/19 09:20

Lab Sample ID: 160-35519-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			09/11/19 13:20	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			09/11/19 13:20	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/11/19 13:20	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			09/11/19 13:20	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			09/11/19 13:20	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			09/11/19 13:20	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			09/11/19 13:20	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			09/11/19 13:20	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/11/19 13:20	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			09/11/19 13:20	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			09/11/19 13:20	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			09/11/19 13:20	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			09/11/19 13:20	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			09/11/19 13:20	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			09/11/19 13:20	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			09/11/19 13:20	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			09/11/19 13:20	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			09/11/19 13:20	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			09/11/19 13:20	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			09/11/19 13:20	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			09/11/19 13:20	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			09/11/19 13:20	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/11/19 13:20	1
Benzene	0.50	U	0.50	0.10	ug/L			09/11/19 13:20	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			09/11/19 13:20	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			09/11/19 13:20	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			09/11/19 13:20	1
Bromoform	0.50	U	0.50	0.25	ug/L			09/11/19 13:20	1
Bromomethane	0.50	U	0.50	0.38	ug/L			09/11/19 13:20	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			09/11/19 13:20	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			09/11/19 13:20	1
Chloroethane	0.50	U	0.50	0.18	ug/L			09/11/19 13:20	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/11/19 13:20	1
Chloromethane	0.50	U	0.50	0.20	ug/L			09/11/19 13:20	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/11/19 13:20	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			09/11/19 13:20	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/11/19 13:20	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			09/11/19 13:20	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			09/11/19 13:20	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			09/11/19 13:20	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			09/11/19 13:20	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			09/11/19 13:20	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/11/19 13:20	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			09/11/19 13:20	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			09/11/19 13:20	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/11/19 13:20	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/11/19 13:20	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			09/11/19 13:20	1
o-Xylene	0.50	U	0.50	0.29	ug/L			09/11/19 13:20	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35519-1
SDG: 41317

Client Sample ID: 41317-003
Date Collected: 09/04/19 09:00
Date Received: 09/05/19 09:20

Lab Sample ID: 160-35519-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/11/19 13:20	1
Styrene	0.50	U	0.50	0.21	ug/L			09/11/19 13:20	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/11/19 13:20	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			09/11/19 13:20	1
Toluene	0.50	U	0.50	0.19	ug/L			09/11/19 13:20	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/11/19 13:20	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/11/19 13:20	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			09/11/19 13:20	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			09/11/19 13:20	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/11/19 13:20	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			09/11/19 13:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*112*		*70 - 130*		*09/11/19 13:20*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*09/11/19 13:20*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-442667/6
Matrix: Water
Analysis Batch: 442667

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			09/11/19 12:09	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			09/11/19 12:09	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			09/11/19 12:09	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/11/19 12:09	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			09/11/19 12:09	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			09/11/19 12:09	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			09/11/19 12:09	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			09/11/19 12:09	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			09/11/19 12:09	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/11/19 12:09	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			09/11/19 12:09	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			09/11/19 12:09	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			09/11/19 12:09	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			09/11/19 12:09	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			09/11/19 12:09	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			09/11/19 12:09	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			09/11/19 12:09	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			09/11/19 12:09	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			09/11/19 12:09	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			09/11/19 12:09	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			09/11/19 12:09	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			09/11/19 12:09	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			09/11/19 12:09	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/11/19 12:09	1
Benzene	0.50	U	0.50	0.10	ug/L			09/11/19 12:09	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			09/11/19 12:09	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			09/11/19 12:09	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			09/11/19 12:09	1
Bromoform	0.50	U	0.50	0.25	ug/L			09/11/19 12:09	1
Bromomethane	0.50	U	0.50	0.38	ug/L			09/11/19 12:09	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			09/11/19 12:09	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			09/11/19 12:09	1
Chloroethane	0.50	U	0.50	0.18	ug/L			09/11/19 12:09	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/11/19 12:09	1
Chloromethane	0.50	U	0.50	0.20	ug/L			09/11/19 12:09	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/11/19 12:09	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			09/11/19 12:09	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/11/19 12:09	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			09/11/19 12:09	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			09/11/19 12:09	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			09/11/19 12:09	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			09/11/19 12:09	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			09/11/19 12:09	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/11/19 12:09	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			09/11/19 12:09	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			09/11/19 12:09	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/11/19 12:09	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/11/19 12:09	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-442667/6
Matrix: Water
Analysis Batch: 442667

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			09/11/19 12:09	1
o-Xylene	0.50	U	0.50	0.29	ug/L			09/11/19 12:09	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/11/19 12:09	1
Styrene	0.50	U	0.50	0.21	ug/L			09/11/19 12:09	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/11/19 12:09	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			09/11/19 12:09	1
Toluene	0.50	U	0.50	0.19	ug/L			09/11/19 12:09	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			09/11/19 12:09	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/11/19 12:09	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			09/11/19 12:09	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			09/11/19 12:09	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/11/19 12:09	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			09/11/19 12:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*		*09/11/19 12:09*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*09/11/19 12:09*	*1*

Lab Sample ID: LCS 160-442667/4
Matrix: Water
Analysis Batch: 442667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.9		ug/L		109	70 - 130
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	10.0	8.20		ug/L		82	70 - 130
1,1,2-Trichloroethane	10.0	9.83		ug/L		98	70 - 130
1,1-Dichloroethane	10.0	9.79		ug/L		98	70 - 130
1,1-Dichloroethene	10.0	8.78		ug/L		88	70 - 130
1,1-Dichloropropene	10.0	9.77		ug/L		98	70 - 130
1,2,3-Trichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,2,3-Trichloropropane	10.0	7.97		ug/L		80	70 - 130
1,2,4-Trichlorobenzene	10.0	9.94		ug/L		99	70 - 130
1,2,4-Trimethylbenzene	10.0	8.06		ug/L		81	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	10.9		ug/L		109	70 - 130
1,2-Dibromoethane	10.0	10.3		ug/L		103	70 - 130
1,2-Dichlorobenzene	10.0	8.17		ug/L		82	70 - 130
1,2-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,2-Dichloropropane	10.0	9.94		ug/L		99	70 - 130
1,3,5-Trimethylbenzene	10.0	8.01		ug/L		80	70 - 130
1,3-Dichlorobenzene	10.0	7.73		ug/L		77	70 - 130
1,3-Dichloropropane	10.0	9.70		ug/L		97	70 - 130
1,4-Dichlorobenzene	10.0	9.18		ug/L		92	70 - 130
2,2-Dichloropropane	10.0	8.10		ug/L		81	70 - 130
2-Chlorotoluene	10.0	10.1		ug/L		101	70 - 130
4-Chlorotoluene	10.0	8.01		ug/L		80	70 - 130
4-Isopropyltoluene	10.0	8.02		ug/L		80	70 - 130
Benzene	10.0	9.85		ug/L		98	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-442667/4
Matrix: Water
Analysis Batch: 442667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	7.74		ug/L		77	70 - 130
Bromochloromethane	10.0	10.1		ug/L		101	70 - 130
Bromodichloromethane	10.0	11.0		ug/L		110	70 - 130
Bromoform	10.0	9.48		ug/L		95	70 - 130
Bromomethane	10.0	14.6		ug/L		146	70 - 130
Carbon tetrachloride	10.0	11.6		ug/L		116	70 - 130
Chlorobenzene	10.0	9.22		ug/L		92	70 - 130
Chloroethane	10.0	13.4		ug/L		134	70 - 130
Chloroform	10.0	9.36		ug/L		94	70 - 130
Chloromethane	10.0	11.2		ug/L		112	70 - 130
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	70 - 130
cis-1,3-Dichloropropene	10.0	11.4		ug/L		114	70 - 130
Dibromochloromethane	10.0	11.0		ug/L		110	70 - 130
Dibromomethane	10.0	10.4		ug/L		104	70 - 130
Dichlorodifluoromethane	10.0	8.46		ug/L		85	70 - 130
Ethylbenzene	10.0	9.75		ug/L		97	70 - 130
Hexachlorobutadiene	10.0	8.44		ug/L		84	70 - 130
Isopropylbenzene	10.0	9.61		ug/L		96	70 - 130
Methylene Chloride	10.0	9.62		ug/L		96	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	11.3		ug/L		113	70 - 130
m-Xylene & p-Xylene	10.0	9.41		ug/L		94	70 - 130
Naphthalene	10.0	9.68		ug/L		97	70 - 130
n-Butylbenzene	10.0	11.8		ug/L		118	70 - 130
N-Propylbenzene	10.0	7.89		ug/L		79	70 - 130
o-Xylene	10.0	9.83		ug/L		98	70 - 130
sec-Butylbenzene	10.0	7.77		ug/L		78	70 - 130
Styrene	10.0	10.1		ug/L		101	70 - 130
tert-Butylbenzene	10.0	7.79		ug/L		78	70 - 130
Tetrachloroethene	10.0	8.87		ug/L		89	70 - 130
Toluene	10.0	9.56		ug/L		96	70 - 130
trans-1,2-Dichloroethene	10.0	9.95		ug/L		100	70 - 130
trans-1,3-Dichloropropene	10.0	10.7		ug/L		107	70 - 130
Trichloroethene	10.0	9.44		ug/L		94	70 - 130
Trichlorofluoromethane	10.0	11.2		ug/L		112	70 - 130
Vinyl chloride	10.0	11.7		ug/L		117	70 - 130
Xylenes, Total	20.0	19.2		ug/L		96	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*81*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-442473/1-A
Matrix: Water
Analysis Batch: 442659

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442473

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		09/09/19 14:29	09/11/19 06:09	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-442473/2-A
Matrix: Water
Analysis Batch: 442659

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442473

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	186		ug/L		93	80 - 120		

Lab Sample ID: 160-35519-2 MS
Matrix: Water
Analysis Batch: 442659

Client Sample ID: 41317-002
Prep Type: Total/NA
Prep Batch: 442473

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	188		ug/L		94	75 - 125		

Lab Sample ID: 160-35519-2 MSD
Matrix: Water
Analysis Batch: 442659

Client Sample ID: 41317-002
Prep Type: Total/NA
Prep Batch: 442473

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	187		ug/L		93	75 - 125	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35519-1
SDG: 41317

GC/MS VOA

Analysis Batch: 442667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35519-1	41317-001	Total/NA	Water	524.2	
160-35519-2	41317-002	Total/NA	Water	524.2	
160-35519-3	41317-003	Total/NA	Water	524.2	
MB 160-442667/6	Method Blank	Total/NA	Water	524.2	
LCS 160-442667/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 442473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35519-2	41317-002	Total/NA	Water	3010A	
MB 160-442473/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-442473/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-35519-2 MS	41317-002	Total/NA	Water	3010A	
160-35519-2 MSD	41317-002	Total/NA	Water	3010A	

Analysis Batch: 442659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35519-2	41317-002	Total/NA	Water	6020A	442473
MB 160-442473/1-A	Method Blank	Total/NA	Water	6020A	442473
LCS 160-442473/2-A	Lab Control Sample	Total/NA	Water	6020A	442473
160-35519-2 MS	41317-002	Total/NA	Water	6020A	442473
160-35519-2 MSD	41317-002	Total/NA	Water	6020A	442473

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35519-1
SDG: 41317

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-35519-1	41317-001	93	95
160-35519-2	41317-002	109	99
160-35519-3	41317-003	112	98
LCS 160-442667/4	Lab Control Sample	81	98
MB 160-442667/6	Method Blank	110	98

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-35705-1
Laboratory Sample Delivery Group: 41346
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
10/2/2019 3:39:09 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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QC Association Summary 17
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Job ID: 160-35705-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-35705-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 9/19/2019 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.2º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41346-001 (160-35705-1) and 41346-002 (160-35705-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 10/01/2019.

Job ID: 160-35705-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41346-002 (160-35705-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 09/25/2019 and analyzed on 10/02/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41346

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Miller	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD use MB form 41347

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	9/17/19	1110	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0	↓	1113	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1113	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
~~003~~	~~E~~	~~G~~	TB-1	0			W	Trip Blank	~~40 ML~~	~~SC~~	~~3~~	~~HCL~~					X							

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print J. Miller 9/18/19	Print	Print
Signature 1330	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Li Harris 9/19/19	Print	Print
Signature 09:10	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by L.
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

160-35705 Chain of Custody

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-35705-1
SDG Number: 41346

Login Number: 35705
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35705-1
SDG: 41346

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35705-1
SDG: 41346

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35705-1
SDG: 41346

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-35705-1	41346-001	Water	09/17/19 11:10	09/19/19 09:10	
160-35705-2	41346-002	Water	09/17/19 11:13	09/19/19 09:10	

Client Sample ID: 41346-001

Date Collected: 09/17/19 11:10
Date Received: 09/19/19 09:10

Lab Sample ID: 160-35705-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/01/19 14:12	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/01/19 14:12	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			10/01/19 14:12	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			10/01/19 14:12	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			10/01/19 14:12	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			10/01/19 14:12	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			10/01/19 14:12	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			10/01/19 14:12	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			10/01/19 14:12	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			10/01/19 14:12	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			10/01/19 14:12	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			10/01/19 14:12	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			10/01/19 14:12	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			10/01/19 14:12	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			10/01/19 14:12	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			10/01/19 14:12	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			10/01/19 14:12	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			10/01/19 14:12	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			10/01/19 14:12	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			10/01/19 14:12	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			10/01/19 14:12	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			10/01/19 14:12	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			10/01/19 14:12	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			10/01/19 14:12	1
Benzene	0.50	U	0.50	0.10	ug/L			10/01/19 14:12	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			10/01/19 14:12	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			10/01/19 14:12	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			10/01/19 14:12	1
Bromoform	0.50	U	0.50	0.25	ug/L			10/01/19 14:12	1
Bromomethane	0.50	U	0.50	0.38	ug/L			10/01/19 14:12	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			10/01/19 14:12	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			10/01/19 14:12	1
Chloroethane	0.50	U	0.50	0.18	ug/L			10/01/19 14:12	1
Chloroform	**0.90**		0.50	0.24	ug/L			10/01/19 14:12	1
Chloromethane	0.50	U	0.50	0.20	ug/L			10/01/19 14:12	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/01/19 14:12	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/01/19 14:12	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			10/01/19 14:12	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			10/01/19 14:12	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			10/01/19 14:12	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			10/01/19 14:12	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			10/01/19 14:12	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			10/01/19 14:12	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			10/01/19 14:12	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			10/01/19 14:12	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			10/01/19 14:12	1
Naphthalene	0.67	U	0.67	0.57	ug/L			10/01/19 14:12	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			10/01/19 14:12	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			10/01/19 14:12	1

Client Sample ID: 41346-001

Lab Sample ID: 160-35705-1

Date Collected: 09/17/19 11:10

Matrix: Water

Date Received: 09/19/19 09:10

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			10/01/19 14:12	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			10/01/19 14:12	1
Styrene	0.50	U	0.50	0.21	ug/L			10/01/19 14:12	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			10/01/19 14:12	1
Tetrachloroethene	**8.4**		0.50	0.19	ug/L			10/01/19 14:12	1
Toluene	0.50	U	0.50	0.19	ug/L			10/01/19 14:12	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/01/19 14:12	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			10/01/19 14:12	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			10/01/19 14:12	1
Trichlorofluoromethane	**0.64**		0.50	0.16	ug/L			10/01/19 14:12	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/01/19 14:12	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			10/01/19 14:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*		*10/01/19 14:12*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*10/01/19 14:12*	*1*

Client Sample ID: 41346-002

Lab Sample ID: 160-35705-2

Date Collected: 09/17/19 11:13

Matrix: Water

Date Received: 09/19/19 09:10

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/01/19 14:35	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/01/19 14:35	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			10/01/19 14:35	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			10/01/19 14:35	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			10/01/19 14:35	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			10/01/19 14:35	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			10/01/19 14:35	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			10/01/19 14:35	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			10/01/19 14:35	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			10/01/19 14:35	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			10/01/19 14:35	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			10/01/19 14:35	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			10/01/19 14:35	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			10/01/19 14:35	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			10/01/19 14:35	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			10/01/19 14:35	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			10/01/19 14:35	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			10/01/19 14:35	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			10/01/19 14:35	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			10/01/19 14:35	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			10/01/19 14:35	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			10/01/19 14:35	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			10/01/19 14:35	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			10/01/19 14:35	1
Benzene	0.50	U	0.50	0.10	ug/L			10/01/19 14:35	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			10/01/19 14:35	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			10/01/19 14:35	1

Client Sample ID: 41346-002

Date Collected: 09/17/19 11:13
Date Received: 09/19/19 09:10

Lab Sample ID: 160-35705-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			10/01/19 14:35	1
Bromoform	0.50	U	0.50	0.25	ug/L			10/01/19 14:35	1
Bromomethane	0.50	U	0.50	0.38	ug/L			10/01/19 14:35	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			10/01/19 14:35	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			10/01/19 14:35	1
Chloroethane	0.50	U	0.50	0.18	ug/L			10/01/19 14:35	1
Chloroform	0.50	U	0.50	0.24	ug/L			10/01/19 14:35	1
Chloromethane	0.50	U	0.50	0.20	ug/L			10/01/19 14:35	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/01/19 14:35	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/01/19 14:35	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			10/01/19 14:35	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			10/01/19 14:35	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			10/01/19 14:35	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			10/01/19 14:35	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			10/01/19 14:35	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			10/01/19 14:35	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			10/01/19 14:35	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			10/01/19 14:35	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			10/01/19 14:35	1
Naphthalene	0.67	U	0.67	0.57	ug/L			10/01/19 14:35	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			10/01/19 14:35	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			10/01/19 14:35	1
o-Xylene	0.50	U	0.50	0.29	ug/L			10/01/19 14:35	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			10/01/19 14:35	1
Styrene	0.50	U	0.50	0.21	ug/L			10/01/19 14:35	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			10/01/19 14:35	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			10/01/19 14:35	1
Toluene	0.50	U	0.50	0.19	ug/L			10/01/19 14:35	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/01/19 14:35	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			10/01/19 14:35	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			10/01/19 14:35	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			10/01/19 14:35	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/01/19 14:35	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			10/01/19 14:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*10/01/19 14:35*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*10/01/19 14:35*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		09/25/19 14:23	10/02/19 05:25	2

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-444670/6
Matrix: Water
Analysis Batch: 444670

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/01/19 11:33	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/01/19 11:33	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			10/01/19 11:33	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			10/01/19 11:33	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			10/01/19 11:33	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			10/01/19 11:33	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			10/01/19 11:33	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			10/01/19 11:33	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			10/01/19 11:33	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			10/01/19 11:33	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			10/01/19 11:33	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			10/01/19 11:33	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			10/01/19 11:33	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			10/01/19 11:33	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			10/01/19 11:33	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			10/01/19 11:33	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			10/01/19 11:33	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			10/01/19 11:33	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			10/01/19 11:33	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			10/01/19 11:33	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			10/01/19 11:33	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			10/01/19 11:33	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			10/01/19 11:33	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			10/01/19 11:33	1
Benzene	0.50	U	0.50	0.10	ug/L			10/01/19 11:33	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			10/01/19 11:33	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			10/01/19 11:33	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			10/01/19 11:33	1
Bromoform	0.50	U	0.50	0.25	ug/L			10/01/19 11:33	1
Bromomethane	0.50	U	0.50	0.38	ug/L			10/01/19 11:33	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			10/01/19 11:33	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			10/01/19 11:33	1
Chloroethane	0.50	U	0.50	0.18	ug/L			10/01/19 11:33	1
Chloroform	0.50	U	0.50	0.24	ug/L			10/01/19 11:33	1
Chloromethane	0.50	U	0.50	0.20	ug/L			10/01/19 11:33	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/01/19 11:33	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/01/19 11:33	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			10/01/19 11:33	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			10/01/19 11:33	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			10/01/19 11:33	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			10/01/19 11:33	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			10/01/19 11:33	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			10/01/19 11:33	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			10/01/19 11:33	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			10/01/19 11:33	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			10/01/19 11:33	1
Naphthalene	0.67	U	0.67	0.57	ug/L			10/01/19 11:33	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			10/01/19 11:33	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-444670/6
Matrix: Water
Analysis Batch: 444670

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			10/01/19 11:33	1
o-Xylene	0.50	U	0.50	0.29	ug/L			10/01/19 11:33	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			10/01/19 11:33	1
Styrene	0.50	U	0.50	0.21	ug/L			10/01/19 11:33	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			10/01/19 11:33	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			10/01/19 11:33	1
Toluene	0.50	U	0.50	0.19	ug/L			10/01/19 11:33	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/01/19 11:33	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			10/01/19 11:33	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			10/01/19 11:33	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			10/01/19 11:33	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/01/19 11:33	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			10/01/19 11:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*112*		*70 - 130*		*10/01/19 11:33*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*10/01/19 11:33*	*1*

Lab Sample ID: LCS 160-444670/4
Matrix: Water
Analysis Batch: 444670

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.2		ug/L		102	70 - 130
1,1,1-Trichloroethane	10.0	9.42		ug/L		94	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.02		ug/L		90	70 - 130
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethane	10.0	9.67		ug/L		97	70 - 130
1,1-Dichloroethene	10.0	9.14		ug/L		91	70 - 130
1,1-Dichloropropene	10.0	9.30		ug/L		93	70 - 130
1,2,3-Trichlorobenzene	10.0	9.55		ug/L		96	70 - 130
1,2,3-Trichloropropane	10.0	9.53		ug/L		95	70 - 130
1,2,4-Trichlorobenzene	10.0	9.61		ug/L		96	70 - 130
1,2,4-Trimethylbenzene	10.0	8.89		ug/L		89	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	8.79		ug/L		88	70 - 130
1,2-Dibromoethane	10.0	9.52		ug/L		95	70 - 130
1,2-Dichlorobenzene	10.0	9.98		ug/L		100	70 - 130
1,2-Dichloroethane	10.0	10.0		ug/L		100	70 - 130
1,2-Dichloropropane	10.0	9.94		ug/L		99	70 - 130
1,3,5-Trimethylbenzene	10.0	8.88		ug/L		89	70 - 130
1,3-Dichlorobenzene	10.0	9.77		ug/L		98	70 - 130
1,3-Dichloropropane	10.0	9.93		ug/L		99	70 - 130
1,4-Dichlorobenzene	10.0	9.79		ug/L		98	70 - 130
2,2-Dichloropropane	10.0	9.56		ug/L		96	70 - 130
2-Chlorotoluene	10.0	9.61		ug/L		96	70 - 130
4-Chlorotoluene	10.0	8.91		ug/L		89	70 - 130
4-Isopropyltoluene	10.0	8.75		ug/L		88	70 - 130
Benzene	10.0	9.75		ug/L		98	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-444670/4
Matrix: Water
Analysis Batch: 444670

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	9.82		ug/L		98	70 - 130
Bromochloromethane	10.0	10.3		ug/L		103	70 - 130
Bromodichloromethane	10.0	9.66		ug/L		97	70 - 130
Bromoform	10.0	9.81		ug/L		98	70 - 130
Bromomethane	10.0	11.5		ug/L		115	70 - 130
Carbon tetrachloride	10.0	9.32		ug/L		93	70 - 130
Chlorobenzene	10.0	9.87		ug/L		99	70 - 130
Chloroethane	10.0	10.2		ug/L		102	70 - 130
Chloroform	10.0	9.84		ug/L		98	70 - 130
Chloromethane	10.0	10.0		ug/L		100	70 - 130
cis-1,2-Dichloroethene	10.0	9.57		ug/L		96	70 - 130
cis-1,3-Dichloropropene	10.0	9.76		ug/L		98	70 - 130
Dibromochloromethane	10.0	9.24		ug/L		92	70 - 130
Dibromomethane	10.0	10.2		ug/L		102	70 - 130
Dichlorodifluoromethane	10.0	10.5		ug/L		105	70 - 130
Ethylbenzene	10.0	9.51		ug/L		95	70 - 130
Hexachlorobutadiene	10.0	9.33		ug/L		93	70 - 130
Isopropylbenzene	10.0	9.45		ug/L		94	70 - 130
Methylene Chloride	10.0	10.1		ug/L		101	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.0		ug/L		100	70 - 130
m-Xylene & p-Xylene	20.0	19.1		ug/L		96	70 - 130
Naphthalene	10.0	8.83		ug/L		88	70 - 130
n-Butylbenzene	10.0	8.71		ug/L		87	70 - 130
N-Propylbenzene	10.0	8.79		ug/L		88	70 - 130
o-Xylene	10.0	9.65		ug/L		96	70 - 130
sec-Butylbenzene	10.0	8.94		ug/L		89	70 - 130
Styrene	10.0	9.45		ug/L		94	70 - 130
tert-Butylbenzene	10.0	8.61		ug/L		86	70 - 130
Tetrachloroethene	10.0	10.0		ug/L		100	70 - 130
Toluene	10.0	9.60		ug/L		96	70 - 130
trans-1,2-Dichloroethene	10.0	9.38		ug/L		94	70 - 130
trans-1,3-Dichloropropene	10.0	9.76		ug/L		98	70 - 130
Trichloroethene	10.0	9.46		ug/L		95	70 - 130
Trichlorofluoromethane	10.0	9.41		ug/L		94	70 - 130
Vinyl chloride	10.0	10.8		ug/L		108	70 - 130
Xylenes, Total	30.0	28.8		ug/L		96	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-444168/1-A
Matrix: Water
Analysis Batch: 444755

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 444168

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		09/25/19 14:23	10/02/19 05:12	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-444168/2-A
Matrix: Water
Analysis Batch: 444755

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 444168

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	207		ug/L		103	80 - 120		

Lab Sample ID: 160-35705-2 MS
Matrix: Water
Analysis Batch: 444755

Client Sample ID: 41346-002
Prep Type: Total/NA
Prep Batch: 444168

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	203		ug/L		102	75 - 125		

Lab Sample ID: 160-35705-2 MSD
Matrix: Water
Analysis Batch: 444755

Client Sample ID: 41346-002
Prep Type: Total/NA
Prep Batch: 444168

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	207		ug/L		103	75 - 125	2	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35705-1
SDG: 41346

GC/MS VOA

Analysis Batch: 444670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35705-1	41346-001	Total/NA	Water	524.2	
160-35705-2	41346-002	Total/NA	Water	524.2	
MB 160-444670/6	Method Blank	Total/NA	Water	524.2	
LCS 160-444670/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 444168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35705-2	41346-002	Total/NA	Water	3010A	
MB 160-444168/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-444168/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-35705-2 MS	41346-002	Total/NA	Water	3010A	
160-35705-2 MSD	41346-002	Total/NA	Water	3010A	

Analysis Batch: 444755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35705-2	41346-002	Total/NA	Water	6020A	444168
MB 160-444168/1-A	Method Blank	Total/NA	Water	6020A	444168
LCS 160-444168/2-A	Lab Control Sample	Total/NA	Water	6020A	444168
160-35705-2 MS	41346-002	Total/NA	Water	6020A	444168
160-35705-2 MSD	41346-002	Total/NA	Water	6020A	444168

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35705-1
SDG: 41346

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-35705-1	41346-001	110	100
160-35705-2	41346-002	111	100
LCS 160-444670/4	Lab Control Sample	109	103
MB 160-444670/6	Method Blank	112	99

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-35846-1
Laboratory Sample Delivery Group: 41373
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
10/14/2019 12:10:07 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-35846-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-35846-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 10/2/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.0º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41373-001 (160-35846-1), 41373-002 (160-35846-2), 41373-003 (160-35846-3), 41373-004 (160-35846-4), 41373-005 (160-35846-5), 41373-006 (160-35846-6) and 41373-007 (160-35846-7) were analyzed for drinking water volatiles (GC-MS) in accordance

Job ID: 160-35846-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

with EPA Method 524.2. The samples were analyzed on 10/04/2019.

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41373-002 (160-35846-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 10/07/2019 and analyzed on 10/09/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-35846 Chain of Custody

Requires EDD ☑

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41373

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Miller	Phone: 314-298-8566
2		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD Well 2 on. Effluent Collected

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	10/1/19	0955	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1000	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1000	W	RTW-1 Effluent	250 ML	p	1	Hno3										X		
003	E	G	095-153	0		1010	W	RTW-2 Influent	40 ML	SC	3	HCL					X							
004	E	G	095-155	0		1018	W	RTW-3 Influent	40 ML	SC	3	HCL					X							
005	E	G	095-157	0		1027	W	RTW-4 Influent	40 ML	SC	3	HCL					X							
006	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X							
007	E	G	095-154	0	10/1/19	1012	W	RTW-2 Effluent	40 ML	SC	3	HCL					X							

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Miller 10/1/19 1400	Print	Print
Signature	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print C. Harris 10/2/19	Print	Print
Signature 07:00	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☑ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☑ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-35846-1
SDG Number: 41373

Login Number: 35846
List Number: 1
Creator: McKinney, Gerrod E

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35846-1
SDG: 41373

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35846-1
SDG: 41373

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35846-1
SDG: 41373

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-35846-1	41373-001	Water	10/01/19 09:55	10/02/19 09:00	
160-35846-2	41373-002	Water	10/01/19 10:00	10/02/19 09:00	
160-35846-3	41373-003	Water	10/01/19 10:10	10/02/19 09:00	
160-35846-4	41373-004	Water	10/01/19 10:18	10/02/19 09:00	
160-35846-5	41373-005	Water	10/01/19 10:27	10/02/19 09:00	
160-35846-6	41373-006	Water	10/01/19 09:00	10/02/19 09:00	
160-35846-7	41373-007	Water	10/01/19 10:12	10/02/19 09:00	

Client Sample ID: 41373-001

Date Collected: 10/01/19 09:55
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/04/19 14:54	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/04/19 14:54	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 14:54	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			10/04/19 14:54	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			10/04/19 14:54	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			10/04/19 14:54	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			10/04/19 14:54	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			10/04/19 14:54	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			10/04/19 14:54	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			10/04/19 14:54	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 14:54	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			10/04/19 14:54	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			10/04/19 14:54	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			10/04/19 14:54	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 14:54	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			10/04/19 14:54	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			10/04/19 14:54	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			10/04/19 14:54	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			10/04/19 14:54	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			10/04/19 14:54	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			10/04/19 14:54	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			10/04/19 14:54	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			10/04/19 14:54	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			10/04/19 14:54	1
Benzene	0.50	U	0.50	0.10	ug/L			10/04/19 14:54	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			10/04/19 14:54	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 14:54	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 14:54	1
Bromoform	0.50	U	0.50	0.25	ug/L			10/04/19 14:54	1
Bromomethane	0.50	U	0.50	0.38	ug/L			10/04/19 14:54	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			10/04/19 14:54	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			10/04/19 14:54	1
Chloroethane	0.50	U	0.50	0.18	ug/L			10/04/19 14:54	1
Chloroform	**0.92**		0.50	0.24	ug/L			10/04/19 14:54	1
Chloromethane	0.50	U	0.50	0.20	ug/L			10/04/19 14:54	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 14:54	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/04/19 14:54	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 14:54	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			10/04/19 14:54	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			10/04/19 14:54	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			10/04/19 14:54	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			10/04/19 14:54	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			10/04/19 14:54	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			10/04/19 14:54	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			10/04/19 14:54	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			10/04/19 14:54	1
Naphthalene	0.67	U	0.67	0.57	ug/L			10/04/19 14:54	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			10/04/19 14:54	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			10/04/19 14:54	1

Client Sample ID: 41373-001

Lab Sample ID: 160-35846-1

Date Collected: 10/01/19 09:55

Matrix: Water

Date Received: 10/02/19 09:00

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			10/04/19 14:54	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 14:54	1
Styrene	0.50	U	0.50	0.21	ug/L			10/04/19 14:54	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			10/04/19 14:54	1
Tetrachloroethene	**7.3**		0.50	0.19	ug/L			10/04/19 14:54	1
Toluene	0.50	U	0.50	0.19	ug/L			10/04/19 14:54	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 14:54	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			10/04/19 14:54	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			10/04/19 14:54	1
Trichlorofluoromethane	**0.58**		0.50	0.16	ug/L			10/04/19 14:54	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/04/19 14:54	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			10/04/19 14:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*10/04/19 14:54*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*10/04/19 14:54*	*1*

Client Sample ID: 41373-002

Lab Sample ID: 160-35846-2

Date Collected: 10/01/19 10:00

Matrix: Water

Date Received: 10/02/19 09:00

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/04/19 15:16	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/04/19 15:16	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 15:16	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			10/04/19 15:16	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			10/04/19 15:16	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			10/04/19 15:16	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			10/04/19 15:16	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			10/04/19 15:16	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			10/04/19 15:16	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			10/04/19 15:16	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 15:16	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			10/04/19 15:16	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			10/04/19 15:16	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			10/04/19 15:16	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 15:16	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			10/04/19 15:16	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			10/04/19 15:16	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			10/04/19 15:16	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			10/04/19 15:16	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			10/04/19 15:16	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			10/04/19 15:16	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			10/04/19 15:16	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			10/04/19 15:16	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			10/04/19 15:16	1
Benzene	0.50	U	0.50	0.10	ug/L			10/04/19 15:16	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			10/04/19 15:16	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 15:16	1

Client Sample ID: 41373-002

Date Collected: 10/01/19 10:00
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 15:16	1
Bromoform	0.50	U	0.50	0.25	ug/L			10/04/19 15:16	1
Bromomethane	0.50	U	0.50	0.38	ug/L			10/04/19 15:16	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			10/04/19 15:16	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			10/04/19 15:16	1
Chloroethane	0.50	U	0.50	0.18	ug/L			10/04/19 15:16	1
Chloroform	0.50	U	0.50	0.24	ug/L			10/04/19 15:16	1
Chloromethane	0.50	U	0.50	0.20	ug/L			10/04/19 15:16	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 15:16	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/04/19 15:16	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 15:16	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			10/04/19 15:16	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			10/04/19 15:16	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			10/04/19 15:16	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			10/04/19 15:16	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			10/04/19 15:16	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			10/04/19 15:16	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			10/04/19 15:16	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			10/04/19 15:16	1
Naphthalene	0.67	U	0.67	0.57	ug/L			10/04/19 15:16	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			10/04/19 15:16	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			10/04/19 15:16	1
o-Xylene	0.50	U	0.50	0.29	ug/L			10/04/19 15:16	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 15:16	1
Styrene	0.50	U	0.50	0.21	ug/L			10/04/19 15:16	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			10/04/19 15:16	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			10/04/19 15:16	1
Toluene	0.50	U	0.50	0.19	ug/L			10/04/19 15:16	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 15:16	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			10/04/19 15:16	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			10/04/19 15:16	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			10/04/19 15:16	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/04/19 15:16	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			10/04/19 15:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*113*		*70 - 130*		*10/04/19 15:16*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*10/04/19 15:16*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		10/07/19 14:42	10/09/19 22:28	2

Client Sample ID: 41373-003

Date Collected: 10/01/19 10:10
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/04/19 15:39	1

Client Sample ID: 41373-003

Date Collected: 10/01/19 10:10
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/04/19 15:39	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 15:39	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			10/04/19 15:39	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			10/04/19 15:39	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			10/04/19 15:39	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			10/04/19 15:39	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			10/04/19 15:39	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			10/04/19 15:39	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			10/04/19 15:39	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 15:39	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			10/04/19 15:39	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			10/04/19 15:39	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			10/04/19 15:39	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 15:39	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			10/04/19 15:39	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			10/04/19 15:39	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			10/04/19 15:39	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			10/04/19 15:39	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			10/04/19 15:39	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			10/04/19 15:39	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			10/04/19 15:39	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			10/04/19 15:39	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			10/04/19 15:39	1
Benzene	0.50	U	0.50	0.10	ug/L			10/04/19 15:39	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			10/04/19 15:39	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 15:39	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 15:39	1
Bromoform	0.50	U	0.50	0.25	ug/L			10/04/19 15:39	1
Bromomethane	0.50	U	0.50	0.38	ug/L			10/04/19 15:39	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			10/04/19 15:39	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			10/04/19 15:39	1
Chloroethane	0.50	U	0.50	0.18	ug/L			10/04/19 15:39	1
Chloroform	**0.41**	**J**	0.50	0.24	ug/L			10/04/19 15:39	1
Chloromethane	0.50	U	0.50	0.20	ug/L			10/04/19 15:39	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 15:39	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/04/19 15:39	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 15:39	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			10/04/19 15:39	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			10/04/19 15:39	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			10/04/19 15:39	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			10/04/19 15:39	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			10/04/19 15:39	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			10/04/19 15:39	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			10/04/19 15:39	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			10/04/19 15:39	1
Naphthalene	0.67	U	0.67	0.57	ug/L			10/04/19 15:39	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			10/04/19 15:39	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			10/04/19 15:39	1
o-Xylene	0.50	U	0.50	0.29	ug/L			10/04/19 15:39	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35846-1
SDG: 41373

Client Sample ID: 41373-003

Date Collected: 10/01/19 10:10
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 15:39	1
Styrene	0.50	U	0.50	0.21	ug/L			10/04/19 15:39	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			10/04/19 15:39	1
Tetrachloroethene	**1.8**		0.50	0.19	ug/L			10/04/19 15:39	1
Toluene	0.50	U	0.50	0.19	ug/L			10/04/19 15:39	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 15:39	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			10/04/19 15:39	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			10/04/19 15:39	1
Trichlorofluoromethane	**0.53**		0.50	0.16	ug/L			10/04/19 15:39	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/04/19 15:39	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			10/04/19 15:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*		*10/04/19 15:39*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*10/04/19 15:39*	*1*

Client Sample ID: 41373-004

Date Collected: 10/01/19 10:18
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/04/19 16:01	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/04/19 16:01	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 16:01	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			10/04/19 16:01	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			10/04/19 16:01	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			10/04/19 16:01	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			10/04/19 16:01	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			10/04/19 16:01	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			10/04/19 16:01	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			10/04/19 16:01	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 16:01	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			10/04/19 16:01	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			10/04/19 16:01	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			10/04/19 16:01	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 16:01	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			10/04/19 16:01	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			10/04/19 16:01	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			10/04/19 16:01	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			10/04/19 16:01	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			10/04/19 16:01	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			10/04/19 16:01	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			10/04/19 16:01	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			10/04/19 16:01	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			10/04/19 16:01	1
Benzene	0.50	U	0.50	0.10	ug/L			10/04/19 16:01	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			10/04/19 16:01	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 16:01	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 16:01	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35846-1
SDG: 41373

Client Sample ID: 41373-004

Date Collected: 10/01/19 10:18
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.25	ug/L			10/04/19 16:01	1
Bromomethane	0.50	U	0.50	0.38	ug/L			10/04/19 16:01	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			10/04/19 16:01	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			10/04/19 16:01	1
Chloroethane	0.50	U	0.50	0.18	ug/L			10/04/19 16:01	1
Chloroform	**1.8**		0.50	0.24	ug/L			10/04/19 16:01	1
Chloromethane	0.50	U	0.50	0.20	ug/L			10/04/19 16:01	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 16:01	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/04/19 16:01	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 16:01	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			10/04/19 16:01	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			10/04/19 16:01	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			10/04/19 16:01	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			10/04/19 16:01	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			10/04/19 16:01	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			10/04/19 16:01	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			10/04/19 16:01	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			10/04/19 16:01	1
Naphthalene	0.67	U	0.67	0.57	ug/L			10/04/19 16:01	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			10/04/19 16:01	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			10/04/19 16:01	1
o-Xylene	0.50	U	0.50	0.29	ug/L			10/04/19 16:01	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 16:01	1
Styrene	0.50	U	0.50	0.21	ug/L			10/04/19 16:01	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			10/04/19 16:01	1
Tetrachloroethene	**0.55**		0.50	0.19	ug/L			10/04/19 16:01	1
Toluene	0.50	U	0.50	0.19	ug/L			10/04/19 16:01	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 16:01	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			10/04/19 16:01	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			10/04/19 16:01	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			10/04/19 16:01	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/04/19 16:01	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			10/04/19 16:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*		*10/04/19 16:01*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*10/04/19 16:01*	*1*

Client Sample ID: 41373-005

Date Collected: 10/01/19 10:27
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/04/19 16:24	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/04/19 16:24	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 16:24	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			10/04/19 16:24	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			10/04/19 16:24	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			10/04/19 16:24	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35846-1
SDG: 41373

Client Sample ID: 41373-005
Date Collected: 10/01/19 10:27
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			10/04/19 16:24	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			10/04/19 16:24	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			10/04/19 16:24	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			10/04/19 16:24	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 16:24	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			10/04/19 16:24	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			10/04/19 16:24	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			10/04/19 16:24	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 16:24	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			10/04/19 16:24	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			10/04/19 16:24	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			10/04/19 16:24	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			10/04/19 16:24	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			10/04/19 16:24	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			10/04/19 16:24	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			10/04/19 16:24	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			10/04/19 16:24	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			10/04/19 16:24	1
Benzene	0.50	U	0.50	0.10	ug/L			10/04/19 16:24	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			10/04/19 16:24	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 16:24	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 16:24	1
Bromoform	0.50	U	0.50	0.25	ug/L			10/04/19 16:24	1
Bromomethane	0.50	U	0.50	0.38	ug/L			10/04/19 16:24	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			10/04/19 16:24	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			10/04/19 16:24	1
Chloroethane	0.50	U	0.50	0.18	ug/L			10/04/19 16:24	1
Chloroform	**0.58**		0.50	0.24	ug/L			10/04/19 16:24	1
Chloromethane	0.50	U	0.50	0.20	ug/L			10/04/19 16:24	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 16:24	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/04/19 16:24	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 16:24	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			10/04/19 16:24	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			10/04/19 16:24	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			10/04/19 16:24	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			10/04/19 16:24	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			10/04/19 16:24	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			10/04/19 16:24	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			10/04/19 16:24	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			10/04/19 16:24	1
Naphthalene	0.67	U	0.67	0.57	ug/L			10/04/19 16:24	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			10/04/19 16:24	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			10/04/19 16:24	1
o-Xylene	0.50	U	0.50	0.29	ug/L			10/04/19 16:24	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 16:24	1
Styrene	0.50	U	0.50	0.21	ug/L			10/04/19 16:24	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			10/04/19 16:24	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			10/04/19 16:24	1
Toluene	0.50	U	0.50	0.19	ug/L			10/04/19 16:24	1

Client Sample ID: 41373-005

Date Collected: 10/01/19 10:27
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 16:24	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			10/04/19 16:24	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			10/04/19 16:24	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			10/04/19 16:24	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/04/19 16:24	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			10/04/19 16:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*10/04/19 16:24*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*10/04/19 16:24*	*1*

Client Sample ID: 41373-006

Date Collected: 10/01/19 09:00
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-6

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/04/19 11:33	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/04/19 11:33	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 11:33	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			10/04/19 11:33	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			10/04/19 11:33	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			10/04/19 11:33	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			10/04/19 11:33	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			10/04/19 11:33	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			10/04/19 11:33	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			10/04/19 11:33	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 11:33	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			10/04/19 11:33	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			10/04/19 11:33	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			10/04/19 11:33	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 11:33	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			10/04/19 11:33	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			10/04/19 11:33	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			10/04/19 11:33	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			10/04/19 11:33	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			10/04/19 11:33	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			10/04/19 11:33	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			10/04/19 11:33	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			10/04/19 11:33	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			10/04/19 11:33	1
Benzene	0.50	U	0.50	0.10	ug/L			10/04/19 11:33	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			10/04/19 11:33	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 11:33	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 11:33	1
Bromoform	0.50	U	0.50	0.25	ug/L			10/04/19 11:33	1
Bromomethane	0.50	U	0.50	0.38	ug/L			10/04/19 11:33	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			10/04/19 11:33	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			10/04/19 11:33	1
Chloroethane	0.50	U	0.50	0.18	ug/L			10/04/19 11:33	1

Client Sample ID: 41373-006

Date Collected: 10/01/19 09:00
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-6

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	0.50	U	0.50	0.24	ug/L			10/04/19 11:33	1
Chloromethane	0.50	U	0.50	0.20	ug/L			10/04/19 11:33	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 11:33	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/04/19 11:33	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 11:33	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			10/04/19 11:33	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			10/04/19 11:33	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			10/04/19 11:33	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			10/04/19 11:33	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			10/04/19 11:33	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			10/04/19 11:33	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			10/04/19 11:33	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			10/04/19 11:33	1
Naphthalene	0.67	U	0.67	0.57	ug/L			10/04/19 11:33	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			10/04/19 11:33	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			10/04/19 11:33	1
o-Xylene	0.50	U	0.50	0.29	ug/L			10/04/19 11:33	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 11:33	1
Styrene	0.50	U	0.50	0.21	ug/L			10/04/19 11:33	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			10/04/19 11:33	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			10/04/19 11:33	1
Toluene	0.50	U	0.50	0.19	ug/L			10/04/19 11:33	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 11:33	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			10/04/19 11:33	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			10/04/19 11:33	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			10/04/19 11:33	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/04/19 11:33	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			10/04/19 11:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*10/04/19 11:33*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*10/04/19 11:33*	*1*

Client Sample ID: 41373-007

Date Collected: 10/01/19 10:12
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-7

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/04/19 16:46	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/04/19 16:46	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 16:46	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			10/04/19 16:46	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			10/04/19 16:46	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			10/04/19 16:46	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			10/04/19 16:46	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			10/04/19 16:46	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			10/04/19 16:46	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			10/04/19 16:46	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 16:46	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35846-1
SDG: 41373

Client Sample ID: 41373-007
Date Collected: 10/01/19 10:12
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-7
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			10/04/19 16:46	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			10/04/19 16:46	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			10/04/19 16:46	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 16:46	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			10/04/19 16:46	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			10/04/19 16:46	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			10/04/19 16:46	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			10/04/19 16:46	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			10/04/19 16:46	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			10/04/19 16:46	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			10/04/19 16:46	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			10/04/19 16:46	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			10/04/19 16:46	1
Benzene	0.50	U	0.50	0.10	ug/L			10/04/19 16:46	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			10/04/19 16:46	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 16:46	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 16:46	1
Bromoform	0.50	U	0.50	0.25	ug/L			10/04/19 16:46	1
Bromomethane	0.50	U	0.50	0.38	ug/L			10/04/19 16:46	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			10/04/19 16:46	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			10/04/19 16:46	1
Chloroethane	0.50	U	0.50	0.18	ug/L			10/04/19 16:46	1
Chloroform	0.50	U	0.50	0.24	ug/L			10/04/19 16:46	1
Chloromethane	0.50	U	0.50	0.20	ug/L			10/04/19 16:46	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 16:46	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/04/19 16:46	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 16:46	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			10/04/19 16:46	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			10/04/19 16:46	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			10/04/19 16:46	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			10/04/19 16:46	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			10/04/19 16:46	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			10/04/19 16:46	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			10/04/19 16:46	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			10/04/19 16:46	1
Naphthalene	0.67	U	0.67	0.57	ug/L			10/04/19 16:46	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			10/04/19 16:46	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			10/04/19 16:46	1
o-Xylene	0.50	U	0.50	0.29	ug/L			10/04/19 16:46	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 16:46	1
Styrene	0.50	U	0.50	0.21	ug/L			10/04/19 16:46	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			10/04/19 16:46	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			10/04/19 16:46	1
Toluene	0.50	U	0.50	0.19	ug/L			10/04/19 16:46	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 16:46	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			10/04/19 16:46	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			10/04/19 16:46	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			10/04/19 16:46	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/04/19 16:46	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35846-1
SDG: 41373

Client Sample ID: 41373-007
Date Collected: 10/01/19 10:12
Date Received: 10/02/19 09:00

Lab Sample ID: 160-35846-7
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	3.0	U	3.0	0.45	ug/L			10/04/19 16:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*10/04/19 16:46*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*10/04/19 16:46*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-445083/7
Matrix: Water
Analysis Batch: 445083

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/04/19 10:41	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/04/19 10:41	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 10:41	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			10/04/19 10:41	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			10/04/19 10:41	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			10/04/19 10:41	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			10/04/19 10:41	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			10/04/19 10:41	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			10/04/19 10:41	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			10/04/19 10:41	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 10:41	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			10/04/19 10:41	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			10/04/19 10:41	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			10/04/19 10:41	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			10/04/19 10:41	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			10/04/19 10:41	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			10/04/19 10:41	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			10/04/19 10:41	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			10/04/19 10:41	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			10/04/19 10:41	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			10/04/19 10:41	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			10/04/19 10:41	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			10/04/19 10:41	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			10/04/19 10:41	1
Benzene	0.50	U	0.50	0.10	ug/L			10/04/19 10:41	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			10/04/19 10:41	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 10:41	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 10:41	1
Bromoform	0.50	U	0.50	0.25	ug/L			10/04/19 10:41	1
Bromomethane	0.50	U	0.50	0.38	ug/L			10/04/19 10:41	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			10/04/19 10:41	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			10/04/19 10:41	1
Chloroethane	0.50	U	0.50	0.18	ug/L			10/04/19 10:41	1
Chloroform	0.50	U	0.50	0.24	ug/L			10/04/19 10:41	1
Chloromethane	0.50	U	0.50	0.20	ug/L			10/04/19 10:41	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 10:41	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/04/19 10:41	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			10/04/19 10:41	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			10/04/19 10:41	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			10/04/19 10:41	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			10/04/19 10:41	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			10/04/19 10:41	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			10/04/19 10:41	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			10/04/19 10:41	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			10/04/19 10:41	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			10/04/19 10:41	1
Naphthalene	0.67	U	0.67	0.57	ug/L			10/04/19 10:41	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			10/04/19 10:41	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-445083/7
Matrix: Water
Analysis Batch: 445083

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			10/04/19 10:41	1
o-Xylene	0.50	U	0.50	0.29	ug/L			10/04/19 10:41	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			10/04/19 10:41	1
Styrene	0.50	U	0.50	0.21	ug/L			10/04/19 10:41	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			10/04/19 10:41	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			10/04/19 10:41	1
Toluene	0.50	U	0.50	0.19	ug/L			10/04/19 10:41	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			10/04/19 10:41	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			10/04/19 10:41	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			10/04/19 10:41	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			10/04/19 10:41	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/04/19 10:41	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			10/04/19 10:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*10/04/19 10:41*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*10/04/19 10:41*	*1*

Lab Sample ID: LCS 160-445083/5
Matrix: Water
Analysis Batch: 445083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.1		ug/L		101	70 - 130
1,1,1-Trichloroethane	10.0	9.84		ug/L		98	70 - 130
1,1,2,2-Tetrachloroethane	10.0	8.67		ug/L		87	70 - 130
1,1,2-Trichloroethane	10.0	9.60		ug/L		96	70 - 130
1,1-Dichloroethane	10.0	9.81		ug/L		98	70 - 130
1,1-Dichloroethene	10.0	9.62		ug/L		96	70 - 130
1,1-Dichloropropene	10.0	9.31		ug/L		93	70 - 130
1,2,3-Trichlorobenzene	10.0	9.26		ug/L		93	70 - 130
1,2,3-Trichloropropane	10.0	8.75		ug/L		87	70 - 130
1,2,4-Trichlorobenzene	10.0	9.46		ug/L		95	70 - 130
1,2,4-Trimethylbenzene	10.0	8.98		ug/L		90	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	8.65		ug/L		86	70 - 130
1,2-Dibromoethane	10.0	9.49		ug/L		95	70 - 130
1,2-Dichlorobenzene	10.0	9.78		ug/L		98	70 - 130
1,2-Dichloroethane	10.0	9.87		ug/L		99	70 - 130
1,2-Dichloropropane	10.0	9.57		ug/L		96	70 - 130
1,3,5-Trimethylbenzene	10.0	9.00		ug/L		90	70 - 130
1,3-Dichlorobenzene	10.0	9.71		ug/L		97	70 - 130
1,3-Dichloropropane	10.0	9.58		ug/L		96	70 - 130
1,4-Dichlorobenzene	10.0	9.65		ug/L		97	70 - 130
2,2-Dichloropropane	10.0	10.4		ug/L		104	70 - 130
2-Chlorotoluene	10.0	9.86		ug/L		99	70 - 130
4-Chlorotoluene	10.0	9.05		ug/L		91	70 - 130
4-Isopropyltoluene	10.0	8.95		ug/L		90	70 - 130
Benzene	10.0	9.57		ug/L		96	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-445083/5
Matrix: Water
Analysis Batch: 445083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	9.70		ug/L		97	70 - 130
Bromochloromethane	10.0	10.1		ug/L		101	70 - 130
Bromodichloromethane	10.0	9.43		ug/L		94	70 - 130
Bromoform	10.0	9.42		ug/L		94	70 - 130
Bromomethane	10.0	12.0		ug/L		120	70 - 130
Carbon tetrachloride	10.0	9.66		ug/L		97	70 - 130
Chlorobenzene	10.0	9.92		ug/L		99	70 - 130
Chloroethane	10.0	10.7		ug/L		107	70 - 130
Chloroform	10.0	9.96		ug/L		100	70 - 130
Chloromethane	10.0	10.1		ug/L		101	70 - 130
cis-1,2-Dichloroethene	10.0	9.60		ug/L		96	70 - 130
cis-1,3-Dichloropropene	10.0	9.55		ug/L		96	70 - 130
Dibromochloromethane	10.0	8.91		ug/L		89	70 - 130
Dibromomethane	10.0	9.65		ug/L		96	70 - 130
Dichlorodifluoromethane	10.0	10.6		ug/L		106	70 - 130
Ethylbenzene	10.0	9.68		ug/L		97	70 - 130
Hexachlorobutadiene	10.0	10.1		ug/L		101	70 - 130
Isopropylbenzene	10.0	9.85		ug/L		98	70 - 130
Methylene Chloride	10.0	9.98		ug/L		100	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.75		ug/L		97	70 - 130
m-Xylene & p-Xylene	20.0	19.6		ug/L		98	70 - 130
Naphthalene	10.0	8.23		ug/L		82	70 - 130
n-Butylbenzene	10.0	9.00		ug/L		90	70 - 130
N-Propylbenzene	10.0	8.90		ug/L		89	70 - 130
o-Xylene	10.0	9.72		ug/L		97	70 - 130
sec-Butylbenzene	10.0	9.10		ug/L		91	70 - 130
Styrene	10.0	9.35		ug/L		94	70 - 130
tert-Butylbenzene	10.0	8.82		ug/L		88	70 - 130
Tetrachloroethene	10.0	10.3		ug/L		103	70 - 130
Toluene	10.0	9.58		ug/L		96	70 - 130
trans-1,2-Dichloroethene	10.0	9.61		ug/L		96	70 - 130
trans-1,3-Dichloropropene	10.0	9.64		ug/L		96	70 - 130
Trichloroethene	10.0	9.55		ug/L		95	70 - 130
Trichlorofluoromethane	10.0	9.66		ug/L		97	70 - 130
Vinyl chloride	10.0	11.3		ug/L		113	70 - 130
Xylenes, Total	30.0	29.3		ug/L		98	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-445334/1-A
Matrix: Water
Analysis Batch: 445625

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 445334

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		10/07/19 14:42	10/09/19 22:15	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-445334/2-A
Matrix: Water
Analysis Batch: 445625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 445334

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	207		ug/L		104	80 - 120		

Lab Sample ID: 160-35846-2 MS
Matrix: Water
Analysis Batch: 445625

Client Sample ID: 41373-002
Prep Type: Total/NA
Prep Batch: 445334

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	202		ug/L		101	75 - 125		

Lab Sample ID: 160-35846-2 MSD
Matrix: Water
Analysis Batch: 445625

Client Sample ID: 41373-002
Prep Type: Total/NA
Prep Batch: 445334

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	205		ug/L		102	75 - 125	2	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35846-1
SDG: 41373

GC/MS VOA

Analysis Batch: 445083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35846-1	41373-001	Total/NA	Water	524.2	
160-35846-2	41373-002	Total/NA	Water	524.2	
160-35846-3	41373-003	Total/NA	Water	524.2	
160-35846-4	41373-004	Total/NA	Water	524.2	
160-35846-5	41373-005	Total/NA	Water	524.2	
160-35846-6	41373-006	Total/NA	Water	524.2	
160-35846-7	41373-007	Total/NA	Water	524.2	
MB 160-445083/7	Method Blank	Total/NA	Water	524.2	
LCS 160-445083/5	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 445334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35846-2	41373-002	Total/NA	Water	3010A	
MB 160-445334/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-445334/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-35846-2 MS	41373-002	Total/NA	Water	3010A	
160-35846-2 MSD	41373-002	Total/NA	Water	3010A	

Analysis Batch: 445625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35846-2	41373-002	Total/NA	Water	6020A	445334
MB 160-445334/1-A	Method Blank	Total/NA	Water	6020A	445334
LCS 160-445334/2-A	Lab Control Sample	Total/NA	Water	6020A	445334
160-35846-2 MS	41373-002	Total/NA	Water	6020A	445334
160-35846-2 MSD	41373-002	Total/NA	Water	6020A	445334

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-35846-1
SDG: 41373

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-35846-1	41373-001	111	98
160-35846-2	41373-002	113	99
160-35846-3	41373-003	109	98
160-35846-4	41373-004	110	99
160-35846-5	41373-005	111	97
160-35846-6	41373-006	111	99
160-35846-7	41373-007	111	98
LCS 160-445083/5	Lab Control Sample	108	104
MB 160-445083/7	Method Blank	111	99

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-36134-1
Laboratory Sample Delivery Group: 41449
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
11/12/2019 9:15:50 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-36134-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-36134-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 10/25/2019 10:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41449-001 (160-36134-1), 41449-002 (160-36134-2) and 41449-003 (160-36134-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 11/06/2019.

Job ID: 160-36134-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41449-002 (160-36134-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 10/31/2019 and analyzed on 11/01/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41449

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. McKay	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Cell	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	10/24/19	1107	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1110	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		↓	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0	↓	1100	W	Trip Blank	40 ML	SC	3	HCL					X							

160-36134 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. McKay 10/24/19	Print	Print
Signature 1403	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Nicholas Price 10-25-19	Print	Print
Signature 1030	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-36134-1
SDG Number: 41449

Login Number: 36134
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36134-1
SDG: 41449

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36134-1
SDG: 41449

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36134-1
SDG: 41449

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-36134-1	41449-001	Water	10/24/19 11:07	10/25/19 10:30	
160-36134-2	41449-002	Water	10/24/19 11:10	10/25/19 10:30	
160-36134-3	41449-003	Water	10/24/19 11:00	10/25/19 10:30	

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36134-1
SDG: 41449

Client Sample ID: 41449-001
Date Collected: 10/24/19 11:07
Date Received: 10/25/19 10:30

Lab Sample ID: 160-36134-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/06/19 12:53	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/06/19 12:53	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/06/19 12:53	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/06/19 12:53	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/06/19 12:53	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/06/19 12:53	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/06/19 12:53	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/06/19 12:53	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/06/19 12:53	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/06/19 12:53	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/06/19 12:53	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/06/19 12:53	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/06/19 12:53	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/06/19 12:53	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/06/19 12:53	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/06/19 12:53	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/06/19 12:53	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/06/19 12:53	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/06/19 12:53	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/06/19 12:53	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/06/19 12:53	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/06/19 12:53	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/06/19 12:53	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/06/19 12:53	1
Benzene	0.50	U	0.50	0.10	ug/L			11/06/19 12:53	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/06/19 12:53	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/06/19 12:53	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/06/19 12:53	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/06/19 12:53	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/06/19 12:53	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/06/19 12:53	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/06/19 12:53	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/06/19 12:53	1
Chloroform	**0.96**		0.50	0.24	ug/L			11/06/19 12:53	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/06/19 12:53	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/06/19 12:53	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/06/19 12:53	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/06/19 12:53	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/06/19 12:53	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/06/19 12:53	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/06/19 12:53	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/06/19 12:53	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/06/19 12:53	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			11/06/19 12:53	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/06/19 12:53	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/06/19 12:53	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/06/19 12:53	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/06/19 12:53	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/06/19 12:53	1

Client Sample ID: 41449-001

Lab Sample ID: 160-36134-1

Date Collected: 10/24/19 11:07

Matrix: Water

Date Received: 10/25/19 10:30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			11/06/19 12:53	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/06/19 12:53	1
Styrene	0.50	U	0.50	0.21	ug/L			11/06/19 12:53	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/06/19 12:53	1
Tetrachloroethene	**6.9**		0.50	0.19	ug/L			11/06/19 12:53	1
Toluene	0.50	U	0.50	0.19	ug/L			11/06/19 12:53	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/06/19 12:53	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/06/19 12:53	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/06/19 12:53	1
Trichlorofluoromethane	**0.60**		0.50	0.16	ug/L			11/06/19 12:53	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/06/19 12:53	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/06/19 12:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*113*		*70 - 130*		*11/06/19 12:53*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*11/06/19 12:53*	*1*

Client Sample ID: 41449-002

Lab Sample ID: 160-36134-2

Date Collected: 10/24/19 11:10

Matrix: Water

Date Received: 10/25/19 10:30

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/06/19 13:15	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/06/19 13:15	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/06/19 13:15	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/06/19 13:15	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/06/19 13:15	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/06/19 13:15	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/06/19 13:15	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/06/19 13:15	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/06/19 13:15	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/06/19 13:15	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/06/19 13:15	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/06/19 13:15	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/06/19 13:15	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/06/19 13:15	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/06/19 13:15	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/06/19 13:15	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/06/19 13:15	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/06/19 13:15	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/06/19 13:15	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/06/19 13:15	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/06/19 13:15	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/06/19 13:15	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/06/19 13:15	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/06/19 13:15	1
Benzene	0.50	U	0.50	0.10	ug/L			11/06/19 13:15	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/06/19 13:15	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/06/19 13:15	1

Client Sample ID: 41449-002

Date Collected: 10/24/19 11:10
Date Received: 10/25/19 10:30

Lab Sample ID: 160-36134-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/06/19 13:15	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/06/19 13:15	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/06/19 13:15	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/06/19 13:15	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/06/19 13:15	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/06/19 13:15	1
Chloroform	0.50	U	0.50	0.24	ug/L			11/06/19 13:15	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/06/19 13:15	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/06/19 13:15	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/06/19 13:15	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/06/19 13:15	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/06/19 13:15	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/06/19 13:15	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/06/19 13:15	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/06/19 13:15	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/06/19 13:15	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			11/06/19 13:15	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/06/19 13:15	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/06/19 13:15	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/06/19 13:15	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/06/19 13:15	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/06/19 13:15	1
o-Xylene	0.50	U	0.50	0.29	ug/L			11/06/19 13:15	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/06/19 13:15	1
Styrene	0.50	U	0.50	0.21	ug/L			11/06/19 13:15	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/06/19 13:15	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			11/06/19 13:15	1
Toluene	0.50	U	0.50	0.19	ug/L			11/06/19 13:15	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/06/19 13:15	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/06/19 13:15	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/06/19 13:15	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			11/06/19 13:15	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/06/19 13:15	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/06/19 13:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*114*		*70 - 130*		*11/06/19 13:15*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*11/06/19 13:15*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		10/31/19 14:23	11/01/19 22:18	2

Client Sample ID: 41449-003

Date Collected: 10/24/19 11:00
Date Received: 10/25/19 10:30

Lab Sample ID: 160-36134-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/06/19 11:23	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36134-1
SDG: 41449

Client Sample ID: 41449-003
Date Collected: 10/24/19 11:00
Date Received: 10/25/19 10:30

Lab Sample ID: 160-36134-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/06/19 11:23	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/06/19 11:23	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/06/19 11:23	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/06/19 11:23	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/06/19 11:23	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/06/19 11:23	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/06/19 11:23	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/06/19 11:23	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/06/19 11:23	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/06/19 11:23	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/06/19 11:23	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/06/19 11:23	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/06/19 11:23	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/06/19 11:23	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/06/19 11:23	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/06/19 11:23	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/06/19 11:23	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/06/19 11:23	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/06/19 11:23	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/06/19 11:23	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/06/19 11:23	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/06/19 11:23	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/06/19 11:23	1
Benzene	0.50	U	0.50	0.10	ug/L			11/06/19 11:23	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/06/19 11:23	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/06/19 11:23	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/06/19 11:23	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/06/19 11:23	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/06/19 11:23	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/06/19 11:23	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/06/19 11:23	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/06/19 11:23	1
Chloroform	**2.2**		0.50	0.24	ug/L			11/06/19 11:23	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/06/19 11:23	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/06/19 11:23	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/06/19 11:23	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/06/19 11:23	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/06/19 11:23	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/06/19 11:23	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/06/19 11:23	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/06/19 11:23	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/06/19 11:23	1
Methylene Chloride	**2.3**		0.50	0.27	ug/L			11/06/19 11:23	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/06/19 11:23	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/06/19 11:23	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/06/19 11:23	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/06/19 11:23	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/06/19 11:23	1
o-Xylene	0.50	U	0.50	0.29	ug/L			11/06/19 11:23	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36134-1
SDG: 41449

Client Sample ID: 41449-003
Date Collected: 10/24/19 11:00
Date Received: 10/25/19 10:30

Lab Sample ID: 160-36134-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/06/19 11:23	1
Styrene	0.50	U	0.50	0.21	ug/L			11/06/19 11:23	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/06/19 11:23	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			11/06/19 11:23	1
Toluene	0.50	U	0.50	0.19	ug/L			11/06/19 11:23	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/06/19 11:23	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/06/19 11:23	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/06/19 11:23	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			11/06/19 11:23	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/06/19 11:23	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/06/19 11:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*11/06/19 11:23*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*11/06/19 11:23*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-449232/6
Matrix: Water
Analysis Batch: 449232

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/06/19 10:58	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/06/19 10:58	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/06/19 10:58	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/06/19 10:58	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/06/19 10:58	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/06/19 10:58	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/06/19 10:58	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/06/19 10:58	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/06/19 10:58	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/06/19 10:58	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/06/19 10:58	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/06/19 10:58	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/06/19 10:58	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/06/19 10:58	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/06/19 10:58	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/06/19 10:58	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/06/19 10:58	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/06/19 10:58	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/06/19 10:58	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/06/19 10:58	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/06/19 10:58	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/06/19 10:58	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/06/19 10:58	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/06/19 10:58	1
Benzene	0.50	U	0.50	0.10	ug/L			11/06/19 10:58	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/06/19 10:58	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/06/19 10:58	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/06/19 10:58	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/06/19 10:58	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/06/19 10:58	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/06/19 10:58	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/06/19 10:58	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/06/19 10:58	1
Chloroform	0.50	U	0.50	0.24	ug/L			11/06/19 10:58	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/06/19 10:58	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/06/19 10:58	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/06/19 10:58	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/06/19 10:58	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/06/19 10:58	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/06/19 10:58	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/06/19 10:58	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/06/19 10:58	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/06/19 10:58	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			11/06/19 10:58	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/06/19 10:58	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/06/19 10:58	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/06/19 10:58	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/06/19 10:58	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-449232/6
Matrix: Water
Analysis Batch: 449232

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/06/19 10:58	1
o-Xylene	0.50	U	0.50	0.29	ug/L			11/06/19 10:58	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/06/19 10:58	1
Styrene	0.50	U	0.50	0.21	ug/L			11/06/19 10:58	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/06/19 10:58	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			11/06/19 10:58	1
Toluene	0.50	U	0.50	0.19	ug/L			11/06/19 10:58	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/06/19 10:58	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/06/19 10:58	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/06/19 10:58	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			11/06/19 10:58	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/06/19 10:58	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/06/19 10:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*115*		*70 - 130*		*11/06/19 10:58*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*11/06/19 10:58*	*1*

Lab Sample ID: LCS 160-449232/4
Matrix: Water
Analysis Batch: 449232

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.24		ug/L		92	70 - 130
1,1,2-Trichloroethane	10.0	9.97		ug/L		100	70 - 130
1,1-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethene	10.0	9.81		ug/L		98	70 - 130
1,1-Dichloropropene	10.0	9.78		ug/L		98	70 - 130
1,2,3-Trichlorobenzene	10.0	9.93		ug/L		99	70 - 130
1,2,3-Trichloropropane	10.0	9.26		ug/L		93	70 - 130
1,2,4-Trichlorobenzene	10.0	9.93		ug/L		99	70 - 130
1,2,4-Trimethylbenzene	10.0	9.46		ug/L		95	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	8.27		ug/L		83	70 - 130
1,2-Dibromoethane	10.0	9.38		ug/L		94	70 - 130
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130
1,2-Dichloroethane	10.0	10.3		ug/L		103	70 - 130
1,2-Dichloropropane	10.0	9.99		ug/L		100	70 - 130
1,3,5-Trimethylbenzene	10.0	9.61		ug/L		96	70 - 130
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,3-Dichloropropane	10.0	9.75		ug/L		97	70 - 130
1,4-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130
2,2-Dichloropropane	10.0	10.9		ug/L		109	70 - 130
2-Chlorotoluene	10.0	10.3		ug/L		103	70 - 130
4-Chlorotoluene	10.0	9.52		ug/L		95	70 - 130
4-Isopropyltoluene	10.0	9.56		ug/L		96	70 - 130
Benzene	10.0	10.1		ug/L		101	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-449232/4
Matrix: Water
Analysis Batch: 449232

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.1		ug/L		101	70 - 130
Bromochloromethane	10.0	10.1		ug/L		101	70 - 130
Bromodichloromethane	10.0	10.1		ug/L		101	70 - 130
Bromoform	10.0	10.0		ug/L		100	70 - 130
Bromomethane	10.0	12.3		ug/L		123	70 - 130
Carbon tetrachloride	10.0	10.1		ug/L		101	70 - 130
Chlorobenzene	10.0	10.3		ug/L		103	70 - 130
Chloroethane	10.0	11.4		ug/L		114	70 - 130
Chloroform	10.0	10.2		ug/L		102	70 - 130
Chloromethane	10.0	10.5		ug/L		105	70 - 130
cis-1,2-Dichloroethene	10.0	9.67		ug/L		97	70 - 130
cis-1,3-Dichloropropene	10.0	9.68		ug/L		97	70 - 130
Dibromochloromethane	10.0	9.11		ug/L		91	70 - 130
Dibromomethane	10.0	9.89		ug/L		99	70 - 130
Dichlorodifluoromethane	10.0	11.2		ug/L		112	70 - 130
Ethylbenzene	10.0	10.1		ug/L		101	70 - 130
Hexachlorobutadiene	10.0	10.7		ug/L		107	70 - 130
Isopropylbenzene	10.0	10.1		ug/L		101	70 - 130
Methylene Chloride	10.0	10.1		ug/L		101	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	8.87		ug/L		89	70 - 130
m-Xylene & p-Xylene	20.0	20.4		ug/L		102	70 - 130
Naphthalene	10.0	8.55		ug/L		85	70 - 130
n-Butylbenzene	10.0	9.74		ug/L		97	70 - 130
N-Propylbenzene	10.0	9.67		ug/L		97	70 - 130
o-Xylene	10.0	9.81		ug/L		98	70 - 130
sec-Butylbenzene	10.0	9.78		ug/L		98	70 - 130
Styrene	10.0	9.42		ug/L		94	70 - 130
tert-Butylbenzene	10.0	9.34		ug/L		93	70 - 130
Tetrachloroethene	10.0	10.6		ug/L		106	70 - 130
Toluene	10.0	9.87		ug/L		99	70 - 130
trans-1,2-Dichloroethene	10.0	9.62		ug/L		96	70 - 130
trans-1,3-Dichloropropene	10.0	9.50		ug/L		95	70 - 130
Trichloroethene	10.0	9.93		ug/L		99	70 - 130
Trichlorofluoromethane	10.0	11.1		ug/L		111	70 - 130
Vinyl chloride	10.0	10.6		ug/L		106	70 - 130
Xylenes, Total	30.0	30.2		ug/L		101	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-448482/1-A
Matrix: Water
Analysis Batch: 448659

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 448482

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		10/31/19 14:23	11/01/19 22:05	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-448482/2-A
Matrix: Water
Analysis Batch: 448659

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 448482

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	198		ug/L		99	80 - 120		

Lab Sample ID: 160-36134-2 MS
Matrix: Water
Analysis Batch: 448659

Client Sample ID: 41449-002
Prep Type: Total/NA
Prep Batch: 448482

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	199		ug/L		100	75 - 125		

Lab Sample ID: 160-36134-2 MSD
Matrix: Water
Analysis Batch: 448659

Client Sample ID: 41449-002
Prep Type: Total/NA
Prep Batch: 448482

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	195		ug/L		97	75 - 125	2	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36134-1
SDG: 41449

GC/MS VOA

Analysis Batch: 449232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36134-1	41449-001	Total/NA	Water	524.2	
160-36134-2	41449-002	Total/NA	Water	524.2	
160-36134-3	41449-003	Total/NA	Water	524.2	
MB 160-449232/6	Method Blank	Total/NA	Water	524.2	
LCS 160-449232/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 448482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36134-2	41449-002	Total/NA	Water	3010A	
MB 160-448482/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-448482/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-36134-2 MS	41449-002	Total/NA	Water	3010A	
160-36134-2 MSD	41449-002	Total/NA	Water	3010A	

Analysis Batch: 448659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36134-2	41449-002	Total/NA	Water	6020A	448482
MB 160-448482/1-A	Method Blank	Total/NA	Water	6020A	448482
LCS 160-448482/2-A	Lab Control Sample	Total/NA	Water	6020A	448482
160-36134-2 MS	41449-002	Total/NA	Water	6020A	448482
160-36134-2 MSD	41449-002	Total/NA	Water	6020A	448482

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36134-1
SDG: 41449

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-36134-1	41449-001	113	94
160-36134-2	41449-002	114	95
160-36134-3	41449-003	111	93
LCS 160-449232/4	Lab Control Sample	111	101
MB 160-449232/6	Method Blank	115	96

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4
BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-36264-1
Laboratory Sample Delivery Group: 41476
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
11/19/2019 3:12:41 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-36264-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-36264-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 11/6/2019 8:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.4° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41476-001 (160-36264-1), 41476-002 (160-36264-2) and 41476-003 (160-36264-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 11/12/2019.

Job ID: 160-36264-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41476-002 (160-36264-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 11/13/2019 and analyzed on 11/15/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41476

Requires EDD ☑ Y

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Mill	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD VOC TB For 41477

Type UID	Smp	Coll	Sample Information: Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information: Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium	
001	E	G	095-151	0	11/5/19	1050	W	RTW-1 Influent	40 ML	SC	3	HCL					X						
002	E	G	095-152	0		1052	W	RTW-1 Effluent	40 ML	SC	3	HCL					X						
002	E	G	095-152	0		1052	W	RTW-1 Effluent	250 ML	P	1	Hno3										X	
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X						

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print [signature] 11/5/19	Print	Print
Signature 1300	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Nicholas Press 11-6-19	Print	Print
Signature [signature] 0855	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☐ Archive For _____ Months
- ☑ Disposal by Lab

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☑ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

160-36264 Chain of Custody

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-36264-1
SDG Number: 41476

Login Number: 36264
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36264-1
SDG: 41476

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36264-1
SDG: 41476

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36264-1
SDG: 41476

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-36264-1	41476-001	Water	11/05/19 10:50	11/06/19 08:55	
160-36264-2	41476-002	Water	11/05/19 10:52	11/06/19 08:55	
160-36264-3	41476-003	Water	11/05/19 09:00	11/06/19 08:55	

Client Sample ID: 41476-001

Date Collected: 11/05/19 10:50
Date Received: 11/06/19 08:55

Lab Sample ID: 160-36264-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/12/19 11:37	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/12/19 11:37	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/12/19 11:37	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/12/19 11:37	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/12/19 11:37	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/12/19 11:37	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/12/19 11:37	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/12/19 11:37	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/12/19 11:37	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/12/19 11:37	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/12/19 11:37	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/12/19 11:37	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/12/19 11:37	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/12/19 11:37	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/12/19 11:37	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/12/19 11:37	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/12/19 11:37	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/12/19 11:37	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/12/19 11:37	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/12/19 11:37	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/12/19 11:37	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/12/19 11:37	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/12/19 11:37	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/12/19 11:37	1
Benzene	0.50	U	0.50	0.10	ug/L			11/12/19 11:37	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/12/19 11:37	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/12/19 11:37	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/12/19 11:37	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/12/19 11:37	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/12/19 11:37	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/12/19 11:37	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/12/19 11:37	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/12/19 11:37	1
Chloroform	**0.85**		0.50	0.24	ug/L			11/12/19 11:37	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/12/19 11:37	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/12/19 11:37	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/12/19 11:37	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/12/19 11:37	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/12/19 11:37	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/12/19 11:37	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/12/19 11:37	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/12/19 11:37	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/12/19 11:37	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			11/12/19 11:37	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/12/19 11:37	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/12/19 11:37	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/12/19 11:37	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/12/19 11:37	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/12/19 11:37	1

Client Sample ID: 41476-001

Lab Sample ID: 160-36264-1

Date Collected: 11/05/19 10:50

Matrix: Water

Date Received: 11/06/19 08:55

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			11/12/19 11:37	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/12/19 11:37	1
Styrene	0.50	U	0.50	0.21	ug/L			11/12/19 11:37	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/12/19 11:37	1
Tetrachloroethene	**7.9**		0.50	0.19	ug/L			11/12/19 11:37	1
Toluene	0.50	U	0.50	0.19	ug/L			11/12/19 11:37	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/12/19 11:37	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/12/19 11:37	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/12/19 11:37	1
Trichlorofluoromethane	**0.68**		0.50	0.16	ug/L			11/12/19 11:37	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/12/19 11:37	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/12/19 11:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*114*		*70 - 130*		*11/12/19 11:37*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*11/12/19 11:37*	*1*

Client Sample ID: 41476-002

Lab Sample ID: 160-36264-2

Date Collected: 11/05/19 10:52

Matrix: Water

Date Received: 11/06/19 08:55

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/12/19 12:00	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/12/19 12:00	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/12/19 12:00	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/12/19 12:00	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/12/19 12:00	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/12/19 12:00	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/12/19 12:00	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/12/19 12:00	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/12/19 12:00	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/12/19 12:00	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/12/19 12:00	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/12/19 12:00	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/12/19 12:00	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/12/19 12:00	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/12/19 12:00	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/12/19 12:00	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/12/19 12:00	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/12/19 12:00	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/12/19 12:00	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/12/19 12:00	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/12/19 12:00	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/12/19 12:00	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/12/19 12:00	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/12/19 12:00	1
Benzene	0.50	U	0.50	0.10	ug/L			11/12/19 12:00	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/12/19 12:00	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/12/19 12:00	1

Client Sample ID: 41476-002

Date Collected: 11/05/19 10:52
Date Received: 11/06/19 08:55

Lab Sample ID: 160-36264-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/12/19 12:00	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/12/19 12:00	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/12/19 12:00	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/12/19 12:00	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/12/19 12:00	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/12/19 12:00	1
Chloroform	0.50	U	0.50	0.24	ug/L			11/12/19 12:00	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/12/19 12:00	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/12/19 12:00	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/12/19 12:00	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/12/19 12:00	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/12/19 12:00	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/12/19 12:00	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/12/19 12:00	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/12/19 12:00	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/12/19 12:00	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			11/12/19 12:00	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/12/19 12:00	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/12/19 12:00	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/12/19 12:00	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/12/19 12:00	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/12/19 12:00	1
o-Xylene	0.50	U	0.50	0.29	ug/L			11/12/19 12:00	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/12/19 12:00	1
Styrene	0.50	U	0.50	0.21	ug/L			11/12/19 12:00	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/12/19 12:00	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			11/12/19 12:00	1
Toluene	0.50	U	0.50	0.19	ug/L			11/12/19 12:00	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/12/19 12:00	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/12/19 12:00	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/12/19 12:00	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			11/12/19 12:00	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/12/19 12:00	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/12/19 12:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*115*		*70 - 130*		*11/12/19 12:00*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*11/12/19 12:00*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		11/13/19 14:07	11/15/19 17:46	2

Client Sample ID: 41476-003

Date Collected: 11/05/19 09:00
Date Received: 11/06/19 08:55

Lab Sample ID: 160-36264-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/12/19 10:30	1

Client Sample ID: 41476-003

Date Collected: 11/05/19 09:00
Date Received: 11/06/19 08:55

Lab Sample ID: 160-36264-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/12/19 10:30	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/12/19 10:30	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/12/19 10:30	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/12/19 10:30	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/12/19 10:30	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/12/19 10:30	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/12/19 10:30	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/12/19 10:30	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/12/19 10:30	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/12/19 10:30	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/12/19 10:30	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/12/19 10:30	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/12/19 10:30	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/12/19 10:30	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/12/19 10:30	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/12/19 10:30	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/12/19 10:30	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/12/19 10:30	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/12/19 10:30	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/12/19 10:30	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/12/19 10:30	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/12/19 10:30	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/12/19 10:30	1
Benzene	0.50	U	0.50	0.10	ug/L			11/12/19 10:30	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/12/19 10:30	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/12/19 10:30	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/12/19 10:30	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/12/19 10:30	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/12/19 10:30	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/12/19 10:30	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/12/19 10:30	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/12/19 10:30	1
Chloroform	**0.61**		0.50	0.24	ug/L			11/12/19 10:30	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/12/19 10:30	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/12/19 10:30	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/12/19 10:30	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/12/19 10:30	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/12/19 10:30	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/12/19 10:30	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/12/19 10:30	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/12/19 10:30	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/12/19 10:30	1
Methylene Chloride	**0.44**	**J**	0.50	0.27	ug/L			11/12/19 10:30	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/12/19 10:30	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/12/19 10:30	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/12/19 10:30	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/12/19 10:30	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/12/19 10:30	1
o-Xylene	0.50	U	0.50	0.29	ug/L			11/12/19 10:30	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36264-1
SDG: 41476

Client Sample ID: 41476-003
Date Collected: 11/05/19 09:00
Date Received: 11/06/19 08:55

Lab Sample ID: 160-36264-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/12/19 10:30	1
Styrene	0.50	U	0.50	0.21	ug/L			11/12/19 10:30	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/12/19 10:30	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			11/12/19 10:30	1
Toluene	0.50	U	0.50	0.19	ug/L			11/12/19 10:30	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/12/19 10:30	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/12/19 10:30	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/12/19 10:30	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			11/12/19 10:30	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/12/19 10:30	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/12/19 10:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*115*		*70 - 130*		*11/12/19 10:30*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*11/12/19 10:30*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-449848/6
Matrix: Water
Analysis Batch: 449848

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/12/19 10:08	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/12/19 10:08	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/12/19 10:08	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/12/19 10:08	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/12/19 10:08	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/12/19 10:08	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/12/19 10:08	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/12/19 10:08	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/12/19 10:08	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/12/19 10:08	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/12/19 10:08	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/12/19 10:08	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/12/19 10:08	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/12/19 10:08	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/12/19 10:08	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/12/19 10:08	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/12/19 10:08	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/12/19 10:08	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/12/19 10:08	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/12/19 10:08	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/12/19 10:08	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/12/19 10:08	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/12/19 10:08	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/12/19 10:08	1
Benzene	0.50	U	0.50	0.10	ug/L			11/12/19 10:08	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/12/19 10:08	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/12/19 10:08	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/12/19 10:08	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/12/19 10:08	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/12/19 10:08	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/12/19 10:08	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/12/19 10:08	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/12/19 10:08	1
Chloroform	0.50	U	0.50	0.24	ug/L			11/12/19 10:08	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/12/19 10:08	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/12/19 10:08	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/12/19 10:08	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/12/19 10:08	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/12/19 10:08	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/12/19 10:08	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/12/19 10:08	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/12/19 10:08	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/12/19 10:08	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			11/12/19 10:08	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/12/19 10:08	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/12/19 10:08	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/12/19 10:08	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/12/19 10:08	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-449848/6
Matrix: Water
Analysis Batch: 449848

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/12/19 10:08	1
o-Xylene	0.50	U	0.50	0.29	ug/L			11/12/19 10:08	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/12/19 10:08	1
Styrene	0.50	U	0.50	0.21	ug/L			11/12/19 10:08	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/12/19 10:08	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			11/12/19 10:08	1
Toluene	0.50	U	0.50	0.19	ug/L			11/12/19 10:08	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/12/19 10:08	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/12/19 10:08	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/12/19 10:08	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			11/12/19 10:08	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/12/19 10:08	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/12/19 10:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*118*		*70 - 130*		*11/12/19 10:08*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*11/12/19 10:08*	*1*

Lab Sample ID: LCS 160-449848/4
Matrix: Water
Analysis Batch: 449848

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	9.92		ug/L		99	70 - 130
1,1,1-Trichloroethane	10.0	10.4		ug/L		104	70 - 130
1,1,2,2-Tetrachloroethane	10.0	8.82		ug/L		88	70 - 130
1,1,2-Trichloroethane	10.0	9.52		ug/L		95	70 - 130
1,1-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethene	10.0	10.4		ug/L		104	70 - 130
1,1-Dichloropropene	10.0	10.0		ug/L		100	70 - 130
1,2,3-Trichlorobenzene	10.0	9.42		ug/L		94	70 - 130
1,2,3-Trichloropropane	10.0	8.91		ug/L		89	70 - 130
1,2,4-Trichlorobenzene	10.0	9.42		ug/L		94	70 - 130
1,2,4-Trimethylbenzene	10.0	9.09		ug/L		91	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	7.66		ug/L		77	70 - 130
1,2-Dibromoethane	10.0	9.18		ug/L		92	70 - 130
1,2-Dichlorobenzene	10.0	9.99		ug/L		100	70 - 130
1,2-Dichloroethane	10.0	9.87		ug/L		99	70 - 130
1,2-Dichloropropane	10.0	9.71		ug/L		97	70 - 130
1,3,5-Trimethylbenzene	10.0	9.17		ug/L		92	70 - 130
1,3-Dichlorobenzene	10.0	9.78		ug/L		98	70 - 130
1,3-Dichloropropane	10.0	9.29		ug/L		93	70 - 130
1,4-Dichlorobenzene	10.0	9.87		ug/L		99	70 - 130
2,2-Dichloropropane	10.0	10.9		ug/L		109	70 - 130
2-Chlorotoluene	10.0	10.1		ug/L		101	70 - 130
4-Chlorotoluene	10.0	9.12		ug/L		91	70 - 130
4-Isopropyltoluene	10.0	9.26		ug/L		93	70 - 130
Benzene	10.0	10.1		ug/L		101	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-449848/4
Matrix: Water
Analysis Batch: 449848

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	9.73		ug/L		97	70 - 130
Bromochloromethane	10.0	9.97		ug/L		100	70 - 130
Bromodichloromethane	10.0	9.59		ug/L		96	70 - 130
Bromoform	10.0	9.34		ug/L		93	70 - 130
Bromomethane	10.0	11.9		ug/L		119	70 - 130
Carbon tetrachloride	10.0	10.3		ug/L		103	70 - 130
Chlorobenzene	10.0	10.0		ug/L		100	70 - 130
Chloroethane	10.0	11.3		ug/L		113	70 - 130
Chloroform	10.0	10.1		ug/L		101	70 - 130
Chloromethane	10.0	11.2		ug/L		112	70 - 130
cis-1,2-Dichloroethene	10.0	9.57		ug/L		96	70 - 130
cis-1,3-Dichloropropene	10.0	9.33		ug/L		93	70 - 130
Dibromochloromethane	10.0	8.77		ug/L		88	70 - 130
Dibromomethane	10.0	9.50		ug/L		95	70 - 130
Dichlorodifluoromethane	10.0	12.6		ug/L		126	70 - 130
Ethylbenzene	10.0	9.78		ug/L		98	70 - 130
Hexachlorobutadiene	10.0	10.4		ug/L		104	70 - 130
Isopropylbenzene	10.0	9.77		ug/L		98	70 - 130
Methylene Chloride	10.0	10.3		ug/L		103	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	8.43		ug/L		84	70 - 130
m-Xylene & p-Xylene	20.0	19.9		ug/L		100	70 - 130
Naphthalene	10.0	8.11		ug/L		81	70 - 130
n-Butylbenzene	10.0	9.45		ug/L		94	70 - 130
N-Propylbenzene	10.0	9.42		ug/L		94	70 - 130
o-Xylene	10.0	9.62		ug/L		96	70 - 130
sec-Butylbenzene	10.0	9.60		ug/L		96	70 - 130
Styrene	10.0	9.08		ug/L		91	70 - 130
tert-Butylbenzene	10.0	9.06		ug/L		91	70 - 130
Tetrachloroethene	10.0	11.0		ug/L		110	70 - 130
Toluene	10.0	9.63		ug/L		96	70 - 130
trans-1,2-Dichloroethene	10.0	10.0		ug/L		100	70 - 130
trans-1,3-Dichloropropene	10.0	9.10		ug/L		91	70 - 130
Trichloroethene	10.0	10.0		ug/L		100	70 - 130
Trichlorofluoromethane	10.0	11.7		ug/L		117	70 - 130
Vinyl chloride	10.0	11.1		ug/L		111	70 - 130
Xylenes, Total	30.0	29.5		ug/L		98	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-450234/1-A
Matrix: Water
Analysis Batch: 450872

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 450234

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		11/13/19 14:07	11/15/19 17:32	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-450234/2-A
Matrix: Water
Analysis Batch: 450872

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 450234

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	203		ug/L		102	80 - 120		

Lab Sample ID: 160-36264-2 MS
Matrix: Water
Analysis Batch: 450872

Client Sample ID: 41476-002
Prep Type: Total/NA
Prep Batch: 450234

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	201		ug/L		100	75 - 125		

Lab Sample ID: 160-36264-2 MSD
Matrix: Water
Analysis Batch: 450872

Client Sample ID: 41476-002
Prep Type: Total/NA
Prep Batch: 450234

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	201		ug/L		101	75 - 125	0	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36264-1
SDG: 41476

GC/MS VOA

Analysis Batch: 449848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36264-1	41476-001	Total/NA	Water	524.2	
160-36264-2	41476-002	Total/NA	Water	524.2	
160-36264-3	41476-003	Total/NA	Water	524.2	
MB 160-449848/6	Method Blank	Total/NA	Water	524.2	
LCS 160-449848/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 450234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36264-2	41476-002	Total/NA	Water	3010A	
MB 160-450234/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-450234/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-36264-2 MS	41476-002	Total/NA	Water	3010A	
160-36264-2 MSD	41476-002	Total/NA	Water	3010A	

Analysis Batch: 450872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36264-2	41476-002	Total/NA	Water	6020A	450234
MB 160-450234/1-A	Method Blank	Total/NA	Water	6020A	450234
LCS 160-450234/2-A	Lab Control Sample	Total/NA	Water	6020A	450234
160-36264-2 MS	41476-002	Total/NA	Water	6020A	450234
160-36264-2 MSD	41476-002	Total/NA	Water	6020A	450234

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36264-1
SDG: 41476

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-36264-1	41476-001	114	94
160-36264-2	41476-002	115	92
160-36264-3	41476-003	115	93
LCS 160-449848/4	Lab Control Sample	110	96
MB 160-449848/6	Method Blank	118	94

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4
BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-36460-1
Laboratory Sample Delivery Group: 41519
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

MichaKorrinhizer

Authorized for release by:
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Designee for

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ivan.vania@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-36460-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-36460-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client.

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 11/21/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41519-001 (160-36460-1), 41519-002 (160-36460-2) and 41519-003 (160-36460-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 11/22/2019 and 11/27/2019.

Job ID: 160-36460-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 160-451580 were outside control limits for Chlorodibromomethane, Dichlorobromomethane, and 1,3-Dichloropropane. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. No further action is required.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41519-002 (160-36460-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 11/25/2019 and analyzed on 11/26/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-36460 Chain of Custody

Requires EDD Y

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41519

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23395 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J Mirlin	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD USE TB-1 For Coc # 41518

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	11/19/19	1048	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1050	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1050	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Mirlin 11/20/19	Print	Print
Signature 1530	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print GERROD McKINNEY 112119	Print	Print
Signature 0900	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☐ Archive For ____ Months
- ☒ Disposal by Lab

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-36460-1
SDG Number: 41519

Login Number: 36460
List Number: 1
Creator: McKinney, Gerrod E

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36460-1
SDG: 41519

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36460-1
SDG: 41519

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36460-1
SDG: 41519

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-36460-1	41519-001	Water	11/19/19 10:48	11/21/19 09:00	
160-36460-2	41519-002	Water	11/19/19 10:50	11/21/19 09:00	
160-36460-3	41519-003	Water	11/19/19 09:00	11/21/19 09:00	

Client Sample ID: 41519-001

Date Collected: 11/19/19 10:48
Date Received: 11/21/19 09:00

Lab Sample ID: 160-36460-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/27/19 23:16	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/27/19 23:16	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/27/19 23:16	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/27/19 23:16	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/27/19 23:16	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/27/19 23:16	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/27/19 23:16	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/27/19 23:16	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/27/19 23:16	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/27/19 23:16	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/27/19 23:16	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/27/19 23:16	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/27/19 23:16	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/27/19 23:16	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/27/19 23:16	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/27/19 23:16	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/27/19 23:16	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/27/19 23:16	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/27/19 23:16	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/27/19 23:16	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/27/19 23:16	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/27/19 23:16	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/27/19 23:16	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/27/19 23:16	1
Benzene	0.50	U	0.50	0.10	ug/L			11/27/19 23:16	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/27/19 23:16	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/27/19 23:16	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/27/19 23:16	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/27/19 23:16	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/27/19 23:16	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/27/19 23:16	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/27/19 23:16	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/27/19 23:16	1
Chloroform	**0.83**		0.50	0.24	ug/L			11/27/19 23:16	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/27/19 23:16	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/27/19 23:16	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/27/19 23:16	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/27/19 23:16	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/27/19 23:16	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/27/19 23:16	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/27/19 23:16	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/27/19 23:16	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/27/19 23:16	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			11/27/19 23:16	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/27/19 23:16	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/27/19 23:16	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/27/19 23:16	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/27/19 23:16	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/27/19 23:16	1

Client Sample ID: 41519-001

Lab Sample ID: 160-36460-1

Date Collected: 11/19/19 10:48

Matrix: Water

Date Received: 11/21/19 09:00

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			11/27/19 23:16	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/27/19 23:16	1
Styrene	0.50	U	0.50	0.21	ug/L			11/27/19 23:16	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/27/19 23:16	1
Tetrachloroethene	**6.6**		0.50	0.19	ug/L			11/27/19 23:16	1
Toluene	0.50	U	0.50	0.19	ug/L			11/27/19 23:16	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/27/19 23:16	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/27/19 23:16	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/27/19 23:16	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			11/27/19 23:16	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/27/19 23:16	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/27/19 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*113*		*70 - 130*		*11/27/19 23:16*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*11/27/19 23:16*	*1*

Client Sample ID: 41519-002

Lab Sample ID: 160-36460-2

Date Collected: 11/19/19 10:50

Matrix: Water

Date Received: 11/21/19 09:00

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/27/19 23:38	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/27/19 23:38	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/27/19 23:38	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/27/19 23:38	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/27/19 23:38	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/27/19 23:38	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/27/19 23:38	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/27/19 23:38	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/27/19 23:38	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/27/19 23:38	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/27/19 23:38	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/27/19 23:38	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/27/19 23:38	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/27/19 23:38	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/27/19 23:38	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/27/19 23:38	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/27/19 23:38	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/27/19 23:38	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/27/19 23:38	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/27/19 23:38	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/27/19 23:38	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/27/19 23:38	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/27/19 23:38	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/27/19 23:38	1
Benzene	0.50	U	0.50	0.10	ug/L			11/27/19 23:38	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/27/19 23:38	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/27/19 23:38	1

Client Sample ID: 41519-002

Date Collected: 11/19/19 10:50
Date Received: 11/21/19 09:00

Lab Sample ID: 160-36460-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/27/19 23:38	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/27/19 23:38	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/27/19 23:38	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/27/19 23:38	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/27/19 23:38	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/27/19 23:38	1
Chloroform	0.50	U	0.50	0.24	ug/L			11/27/19 23:38	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/27/19 23:38	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/27/19 23:38	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/27/19 23:38	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/27/19 23:38	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/27/19 23:38	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/27/19 23:38	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/27/19 23:38	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/27/19 23:38	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/27/19 23:38	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			11/27/19 23:38	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/27/19 23:38	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/27/19 23:38	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/27/19 23:38	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/27/19 23:38	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/27/19 23:38	1
o-Xylene	0.50	U	0.50	0.29	ug/L			11/27/19 23:38	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/27/19 23:38	1
Styrene	0.50	U	0.50	0.21	ug/L			11/27/19 23:38	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/27/19 23:38	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			11/27/19 23:38	1
Toluene	0.50	U	0.50	0.19	ug/L			11/27/19 23:38	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/27/19 23:38	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/27/19 23:38	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/27/19 23:38	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			11/27/19 23:38	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/27/19 23:38	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/27/19 23:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*112*		*70 - 130*		*11/27/19 23:38*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*11/27/19 23:38*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		11/25/19 14:51	11/26/19 23:21	2

Client Sample ID: 41519-003

Date Collected: 11/19/19 09:00
Date Received: 11/21/19 09:00

Lab Sample ID: 160-36460-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/22/19 17:26	1

Client Sample ID: 41519-003

Date Collected: 11/19/19 09:00
Date Received: 11/21/19 09:00

Lab Sample ID: 160-36460-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/22/19 17:26	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/22/19 17:26	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/22/19 17:26	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/22/19 17:26	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/22/19 17:26	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/22/19 17:26	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/22/19 17:26	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/22/19 17:26	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/22/19 17:26	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/22/19 17:26	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/22/19 17:26	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/22/19 17:26	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/22/19 17:26	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/22/19 17:26	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/22/19 17:26	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/22/19 17:26	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/22/19 17:26	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/22/19 17:26	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/22/19 17:26	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/22/19 17:26	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/22/19 17:26	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/22/19 17:26	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/22/19 17:26	1
Benzene	0.50	U	0.50	0.10	ug/L			11/22/19 17:26	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/22/19 17:26	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/22/19 17:26	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/22/19 17:26	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/22/19 17:26	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/22/19 17:26	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/22/19 17:26	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/22/19 17:26	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/22/19 17:26	1
Chloroform	**1.1**		0.50	0.24	ug/L			11/22/19 17:26	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/22/19 17:26	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/22/19 17:26	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/22/19 17:26	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/22/19 17:26	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/22/19 17:26	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/22/19 17:26	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/22/19 17:26	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/22/19 17:26	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/22/19 17:26	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			11/22/19 17:26	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/22/19 17:26	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/22/19 17:26	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/22/19 17:26	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/22/19 17:26	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/22/19 17:26	1
o-Xylene	0.50	U	0.50	0.29	ug/L			11/22/19 17:26	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36460-1
SDG: 41519

Client Sample ID: 41519-003
Date Collected: 11/19/19 09:00
Date Received: 11/21/19 09:00

Lab Sample ID: 160-36460-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/22/19 17:26	1
Styrene	0.50	U	0.50	0.21	ug/L			11/22/19 17:26	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/22/19 17:26	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			11/22/19 17:26	1
Toluene	0.50	U	0.50	0.19	ug/L			11/22/19 17:26	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/22/19 17:26	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/22/19 17:26	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/22/19 17:26	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			11/22/19 17:26	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/22/19 17:26	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/22/19 17:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*117*		*70 - 130*		*11/22/19 17:26*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*11/22/19 17:26*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-451580/6
Matrix: Water
Analysis Batch: 451580

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/22/19 10:44	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/22/19 10:44	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/22/19 10:44	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/22/19 10:44	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/22/19 10:44	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/22/19 10:44	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/22/19 10:44	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/22/19 10:44	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/22/19 10:44	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/22/19 10:44	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/22/19 10:44	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/22/19 10:44	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/22/19 10:44	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/22/19 10:44	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/22/19 10:44	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/22/19 10:44	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/22/19 10:44	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/22/19 10:44	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/22/19 10:44	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/22/19 10:44	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/22/19 10:44	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/22/19 10:44	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/22/19 10:44	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/22/19 10:44	1
Benzene	0.50	U	0.50	0.10	ug/L			11/22/19 10:44	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/22/19 10:44	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/22/19 10:44	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/22/19 10:44	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/22/19 10:44	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/22/19 10:44	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/22/19 10:44	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/22/19 10:44	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/22/19 10:44	1
Chloroform	0.50	U	0.50	0.24	ug/L			11/22/19 10:44	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/22/19 10:44	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/22/19 10:44	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/22/19 10:44	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/22/19 10:44	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/22/19 10:44	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/22/19 10:44	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/22/19 10:44	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/22/19 10:44	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/22/19 10:44	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			11/22/19 10:44	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/22/19 10:44	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/22/19 10:44	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/22/19 10:44	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/22/19 10:44	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-451580/6
Matrix: Water
Analysis Batch: 451580

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/22/19 10:44	1
o-Xylene	0.50	U	0.50	0.29	ug/L			11/22/19 10:44	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/22/19 10:44	1
Styrene	0.50	U	0.50	0.21	ug/L			11/22/19 10:44	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/22/19 10:44	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			11/22/19 10:44	1
Toluene	0.50	U	0.50	0.19	ug/L			11/22/19 10:44	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/22/19 10:44	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/22/19 10:44	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/22/19 10:44	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			11/22/19 10:44	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/22/19 10:44	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/22/19 10:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*117*		*70 - 130*		*11/22/19 10:44*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*11/22/19 10:44*	*1*

Lab Sample ID: LCS 160-451580/4
Matrix: Water
Analysis Batch: 451580

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.7		ug/L		107	70 - 130
1,1,1-Trichloroethane	10.0	10.5		ug/L		105	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.4		ug/L		104	70 - 130
1,1,2-Trichloroethane	10.0	10.4		ug/L		104	70 - 130
1,1-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethene	10.0	10.3		ug/L		103	70 - 130
1,1-Dichloropropene	10.0	10.7		ug/L		107	70 - 130
1,2,3-Trichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,2,3-Trichloropropane	10.0	9.94		ug/L		99	70 - 130
1,2,4-Trichlorobenzene	10.0	10.1		ug/L		101	70 - 130
1,2,4-Trimethylbenzene	10.0	10.8		ug/L		108	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	9.17		ug/L		92	70 - 130
1,2-Dibromoethane	10.0	10.2		ug/L		102	70 - 130
1,2-Dichlorobenzene	10.0	10.0		ug/L		100	70 - 130
1,2-Dichloroethane	10.0	10.4		ug/L		104	70 - 130
1,2-Dichloropropane	10.0	10.1		ug/L		101	70 - 130
1,3,5-Trimethylbenzene	10.0	10.8		ug/L		108	70 - 130
1,3-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130
1,3-Dichloropropane	10.0	10.3		ug/L		103	70 - 130
1,4-Dichlorobenzene	10.0	9.90		ug/L		99	70 - 130
2,2-Dichloropropane	10.0	10.2		ug/L		102	70 - 130
2-Chlorotoluene	10.0	9.90		ug/L		99	70 - 130
4-Chlorotoluene	10.0	10.4		ug/L		104	70 - 130
4-Isopropyltoluene	10.0	10.9		ug/L		109	70 - 130
Benzene	10.0	9.90		ug/L		99	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-451580/4
Matrix: Water
Analysis Batch: 451580

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.1		ug/L		101	70 - 130
Bromochloromethane	10.0	10.2		ug/L		102	70 - 130
Bromodichloromethane	10.0	10.8		ug/L		108	70 - 130
Bromoform	10.0	9.37		ug/L		94	70 - 130
Bromomethane	10.0	10.6		ug/L		106	70 - 130
Carbon tetrachloride	10.0	10.1		ug/L		101	70 - 130
Chlorobenzene	10.0	9.86		ug/L		99	70 - 130
Chloroethane	10.0	10.5		ug/L		105	70 - 130
Chloroform	10.0	9.88		ug/L		99	70 - 130
Chloromethane	10.0	11.1		ug/L		111	70 - 130
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 130
cis-1,3-Dichloropropene	10.0	10.5		ug/L		105	70 - 130
Dibromochloromethane	10.0	11.0		ug/L		110	70 - 130
Dibromomethane	10.0	9.90		ug/L		99	70 - 130
Dichlorodifluoromethane	10.0	10.8		ug/L		108	70 - 130
Ethylbenzene	10.0	10.3		ug/L		103	70 - 130
Hexachlorobutadiene	10.0	10.4		ug/L		104	70 - 130
Isopropylbenzene	10.0	10.6		ug/L		106	70 - 130
Methylene Chloride	10.0	9.63		ug/L		96	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.6		ug/L		106	70 - 130
m-Xylene & p-Xylene	20.0	21.0		ug/L		105	70 - 130
Naphthalene	10.0	10.4		ug/L		104	70 - 130
n-Butylbenzene	10.0	10.2		ug/L		102	70 - 130
N-Propylbenzene	10.0	10.9		ug/L		109	70 - 130
o-Xylene	10.0	10.6		ug/L		106	70 - 130
sec-Butylbenzene	10.0	10.8		ug/L		108	70 - 130
Styrene	10.0	11.1		ug/L		111	70 - 130
tert-Butylbenzene	10.0	10.8		ug/L		108	70 - 130
Tetrachloroethene	10.0	10.6		ug/L		106	70 - 130
Toluene	10.0	10.6		ug/L		106	70 - 130
trans-1,2-Dichloroethene	10.0	10.5		ug/L		105	70 - 130
trans-1,3-Dichloropropene	10.0	10.9		ug/L		109	70 - 130
Trichloroethene	10.0	10.1		ug/L		101	70 - 130
Trichlorofluoromethane	10.0	10.6		ug/L		106	70 - 130
Vinyl chloride	10.0	9.95		ug/L		100	70 - 130
Xylenes, Total	30.0	31.6		ug/L		105	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*112*		*70 - 130*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*

Lab Sample ID: 160-36364-A-5 MS
Matrix: Water
Analysis Batch: 451580

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.50	U	10.0	11.3		ug/L		113	73 - 123
1,1,1-Trichloroethane	0.76		10.0	10.8		ug/L		100	76 - 122

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-36364-A-5 MS
Matrix: Water
Analysis Batch: 451580

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	0.50	U	10.0	11.1		ug/L		111	77 - 118
1,1,2-Trichloroethane	0.50	U	10.0	10.6		ug/L		106	79 - 116
1,1-Dichloroethane	0.19	J	10.0	10.6		ug/L		104	81 - 120
1,1-Dichloroethene	0.45	J	10.0	9.74		ug/L		93	68 - 116
1,1-Dichloropropene	0.50	U	10.0	9.69		ug/L		97	74 - 124
1,2,3-Trichlorobenzene	0.59	U	10.0	10.6		ug/L		106	57 - 128
1,2,3-Trichloropropane	0.50	U	10.0	10.9		ug/L		109	72 - 122
1,2,4-Trichlorobenzene	0.55	U	10.0	9.90		ug/L		99	54 - 150
1,2,4-Trimethylbenzene	0.50	U	10.0	10.8		ug/L		108	70 - 125
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	9.81		ug/L		98	58 - 130
1,2-Dibromoethane	0.50	U	10.0	10.7		ug/L		107	76 - 118
1,2-Dichlorobenzene	0.50	U	10.0	10.4		ug/L		104	76 - 120
1,2-Dichloroethane	0.50	U	10.0	11.2		ug/L		112	78 - 123
1,2-Dichloropropane	0.50	U	10.0	10.6		ug/L		106	80 - 119
1,3,5-Trimethylbenzene	0.50	U	10.0	11.0		ug/L		110	76 - 126
1,3-Dichlorobenzene	0.50	U	10.0	10.6		ug/L		106	76 - 120
1,3-Dichloropropane	0.50	U	10.0	10.6		ug/L		106	79 - 116
1,4-Dichlorobenzene	0.50	U	10.0	9.99		ug/L		100	75 - 117
2,2-Dichloropropane	0.50	U	10.0	9.00		ug/L		90	76 - 120
2-Chlorotoluene	0.50	U	10.0	9.64		ug/L		96	79 - 125
4-Chlorotoluene	0.50	U	10.0	10.2		ug/L		102	76 - 136
4-Isopropyltoluene	0.50	U	10.0	10.6		ug/L		106	78 - 132
Benzene	0.50	U	10.0	10.5		ug/L		105	77 - 124
Bromobenzene	0.50	U	10.0	10.6		ug/L		106	77 - 115
Bromochloromethane	0.50	U	10.0	10.9		ug/L		109	73 - 118
Bromodichloromethane	0.50	U	10.0	11.9		ug/L		119	73 - 118
Bromoform	0.50	U	10.0	10.0		ug/L		100	70 - 118
Bromomethane	0.50	U	10.0	8.74		ug/L		87	46 - 147
Carbon tetrachloride	1.6		10.0	11.3		ug/L		97	70 - 128
Chlorobenzene	0.50	U	10.0	10.2		ug/L		102	76 - 124
Chloroethane	0.50	U	10.0	9.07		ug/L		91	66 - 129
Chloroform	0.68		10.0	11.2		ug/L		106	77 - 122
Chloromethane	0.50	U	10.0	9.16		ug/L		92	68 - 132
cis-1,2-Dichloroethene	0.50	U	10.0	10.6		ug/L		106	71 - 117
cis-1,3-Dichloropropene	0.50	U	10.0	10.5		ug/L		105	76 - 128
Dibromochloromethane	0.50	U	10.0	11.5		ug/L		115	73 - 114
Dibromomethane	0.50	U	10.0	10.5		ug/L		105	77 - 118
Dichlorodifluoromethane	0.50	U	10.0	9.12		ug/L		91	61 - 134
Ethylbenzene	0.50	U	10.0	10.2		ug/L		102	80 - 122
Hexachlorobutadiene	0.50	U	10.0	9.06		ug/L		91	57 - 144
Isopropylbenzene	0.50	U	10.0	9.46		ug/L		95	85 - 148
Methylene Chloride	0.50	U	10.0	10.7		ug/L		107	65 - 131
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	11.1		ug/L		111	75 - 122
m-Xylene & p-Xylene	1.0	U	20.0	21.0		ug/L		105	70 - 130
Naphthalene	0.67	U	10.0	10.3		ug/L		103	56 - 143
n-Butylbenzene	0.50	U	10.0	9.52		ug/L		95	74 - 128
N-Propylbenzene	0.50	U	10.0	10.4		ug/L		104	80 - 132
o-Xylene	0.50	U	10.0	10.3		ug/L		103	70 - 130
sec-Butylbenzene	0.50	U	10.0	9.77		ug/L		98	78 - 128

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-36364-A-5 MS
Matrix: Water
Analysis Batch: 451580

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Styrene	0.50	U	10.0	10.4		ug/L		104	68 - 125
tert-Butylbenzene	0.50	U	10.0	10.6		ug/L		106	75 - 131
Tetrachloroethene	6.5		10.0	15.8		ug/L		93	71 - 124
Toluene	0.50	U	10.0	10.6		ug/L		106	76 - 127
trans-1,2-Dichloroethene	0.50	U	10.0	10.6		ug/L		106	72 - 117
trans-1,3-Dichloropropene	0.50	U	10.0	10.6		ug/L		106	85 - 135
Trichloroethene	0.45	J	10.0	10.4		ug/L		99	71 - 118
Trichlorofluoromethane	0.50	U	10.0	8.94		ug/L		89	56 - 127
Vinyl chloride	0.50	U	10.0	7.70		ug/L		77	58 - 114
Xylenes, Total	3.0	U	30.0	31.3		ug/L		104	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*115*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 160-36364-A-5 MSD
Matrix: Water
Analysis Batch: 451580

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.50	U	10.0	11.4		ug/L		114	73 - 123	1	20
1,1,1-Trichloroethane	0.76		10.0	10.3		ug/L		96	76 - 122	4	20
1,1,2,2-Tetrachloroethane	0.50	U	10.0	9.86		ug/L		99	77 - 118	12	20
1,1,2-Trichloroethane	0.50	U	10.0	11.5		ug/L		115	79 - 116	8	20
1,1-Dichloroethane	0.19	J	10.0	10.4		ug/L		102	81 - 120	1	20
1,1-Dichloroethene	0.45	J	10.0	9.47		ug/L		90	68 - 116	3	20
1,1-Dichloropropene	0.50	U	10.0	9.52		ug/L		95	74 - 124	2	20
1,2,3-Trichlorobenzene	0.59	U	10.0	10.3		ug/L		103	57 - 128	3	20
1,2,3-Trichloropropane	0.50	U	10.0	10.9		ug/L		109	72 - 122	0	20
1,2,4-Trichlorobenzene	0.55	U	10.0	9.79		ug/L		98	54 - 150	1	20
1,2,4-Trimethylbenzene	0.50	U	10.0	10.0		ug/L		100	70 - 125	7	20
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	9.83		ug/L		98	58 - 130	0	20
1,2-Dibromoethane	0.50	U	10.0	11.4		ug/L		114	76 - 118	7	20
1,2-Dichlorobenzene	0.50	U	10.0	10.3		ug/L		103	76 - 120	2	20
1,2-Dichloroethane	0.50	U	10.0	11.4		ug/L		114	78 - 123	1	20
1,2-Dichloropropane	0.50	U	10.0	10.8		ug/L		108	80 - 119	2	20
1,3,5-Trimethylbenzene	0.50	U	10.0	10.4		ug/L		104	76 - 126	5	20
1,3-Dichlorobenzene	0.50	U	10.0	10.3		ug/L		103	76 - 120	3	20
1,3-Dichloropropane	0.50	U	10.0	12.2		ug/L		122	79 - 116	14	20
1,4-Dichlorobenzene	0.50	U	10.0	9.84		ug/L		98	75 - 117	2	20
2,2-Dichloropropane	0.50	U	10.0	8.45		ug/L		85	76 - 120	6	20
2-Chlorotoluene	0.50	U	10.0	8.63		ug/L		86	79 - 125	11	20
4-Chlorotoluene	0.50	U	10.0	9.92		ug/L		99	76 - 136	2	20
4-Isopropyltoluene	0.50	U	10.0	10.1		ug/L		101	78 - 132	5	20
Benzene	0.50	U	10.0	10.3		ug/L		103	77 - 124	2	20
Bromobenzene	0.50	U	10.0	10.2		ug/L		102	77 - 115	4	20
Bromochloromethane	0.50	U	10.0	10.9		ug/L		109	73 - 118	0	20
Bromodichloromethane	0.50	U	10.0	11.8		ug/L		118	73 - 118	1	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-36364-A-5 MSD
Matrix: Water
Analysis Batch: 451580

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromoform	0.50	U	10.0	9.69		ug/L		97	70 - 118	4	20
Bromomethane	0.50	U	10.0	8.77		ug/L		88	46 - 147	0	20
Carbon tetrachloride	1.6		10.0	10.9		ug/L		93	70 - 128	3	20
Chlorobenzene	0.50	U	10.0	9.92		ug/L		99	76 - 124	3	20
Chloroethane	0.50	U	10.0	8.55		ug/L		86	66 - 129	6	20
Chloroform	0.68		10.0	11.1		ug/L		104	77 - 122	1	20
Chloromethane	0.50	U	10.0	8.68		ug/L		87	68 - 132	5	20
cis-1,2-Dichloroethene	0.50	U	10.0	10.2		ug/L		102	71 - 117	4	20
cis-1,3-Dichloropropene	0.50	U	10.0	10.8		ug/L		108	76 - 128	3	20
Dibromochloromethane	0.50	U	10.0	12.6		ug/L		126	73 - 114	9	20
Dibromomethane	0.50	U	10.0	10.7		ug/L		107	77 - 118	2	20
Dichlorodifluoromethane	0.50	U	10.0	8.45		ug/L		84	61 - 134	8	20
Ethylbenzene	0.50	U	10.0	9.84		ug/L		98	80 - 122	3	20
Hexachlorobutadiene	0.50	U	10.0	8.84		ug/L		88	57 - 144	2	20
Isopropylbenzene	0.50	U	10.0	9.71		ug/L		97	85 - 148	3	20
Methylene Chloride	0.50	U	10.0	10.4		ug/L		104	65 - 131	3	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	11.3		ug/L		113	75 - 122	1	20
m-Xylene & p-Xylene	1.0	U	20.0	19.8		ug/L		99	70 - 130	6	20
Naphthalene	0.67	U	10.0	11.0		ug/L		110	56 - 143	6	20
n-Butylbenzene	0.50	U	10.0	8.88		ug/L		89	74 - 128	7	20
N-Propylbenzene	0.50	U	10.0	9.66		ug/L		97	80 - 132	7	20
o-Xylene	0.50	U	10.0	9.58		ug/L		96	70 - 130	7	20
sec-Butylbenzene	0.50	U	10.0	9.57		ug/L		96	78 - 128	2	20
Styrene	0.50	U	10.0	10.4		ug/L		104	68 - 125	0	20
tert-Butylbenzene	0.50	U	10.0	9.51		ug/L		95	75 - 131	11	20
Tetrachloroethene	6.5		10.0	17.2		ug/L		107	71 - 124	9	20
Toluene	0.50	U	10.0	11.7		ug/L		117	76 - 127	10	20
trans-1,2-Dichloroethene	0.50	U	10.0	9.96		ug/L		100	72 - 117	6	20
trans-1,3-Dichloropropene	0.50	U	10.0	12.2		ug/L		122	85 - 135	14	20
Trichloroethene	0.45	J	10.0	10.3		ug/L		98	71 - 118	1	20
Trichlorofluoromethane	0.50	U	10.0	8.54		ug/L		85	56 - 127	5	20
Vinyl chloride	0.50	U	10.0	7.88		ug/L		79	58 - 114	2	20
Xylenes, Total	3.0	U	30.0	29.4		ug/L		98	78 - 128	6	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*115*		*70 - 130*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: MB 160-452283/15
Matrix: Water
Analysis Batch: 452283

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			11/27/19 18:48	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			11/27/19 18:48	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			11/27/19 18:48	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			11/27/19 18:48	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			11/27/19 18:48	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-452283/15
Matrix: Water
Analysis Batch: 452283

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			11/27/19 18:48	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			11/27/19 18:48	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			11/27/19 18:48	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			11/27/19 18:48	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			11/27/19 18:48	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			11/27/19 18:48	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			11/27/19 18:48	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			11/27/19 18:48	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			11/27/19 18:48	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			11/27/19 18:48	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			11/27/19 18:48	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			11/27/19 18:48	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			11/27/19 18:48	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			11/27/19 18:48	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			11/27/19 18:48	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			11/27/19 18:48	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			11/27/19 18:48	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			11/27/19 18:48	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			11/27/19 18:48	1
Benzene	0.50	U	0.50	0.10	ug/L			11/27/19 18:48	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			11/27/19 18:48	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			11/27/19 18:48	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			11/27/19 18:48	1
Bromoform	0.50	U	0.50	0.25	ug/L			11/27/19 18:48	1
Bromomethane	0.50	U	0.50	0.38	ug/L			11/27/19 18:48	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			11/27/19 18:48	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			11/27/19 18:48	1
Chloroethane	0.50	U	0.50	0.18	ug/L			11/27/19 18:48	1
Chloroform	0.50	U	0.50	0.24	ug/L			11/27/19 18:48	1
Chloromethane	0.50	U	0.50	0.20	ug/L			11/27/19 18:48	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/27/19 18:48	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			11/27/19 18:48	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			11/27/19 18:48	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			11/27/19 18:48	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			11/27/19 18:48	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			11/27/19 18:48	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			11/27/19 18:48	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			11/27/19 18:48	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			11/27/19 18:48	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			11/27/19 18:48	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			11/27/19 18:48	1
Naphthalene	0.67	U	0.67	0.57	ug/L			11/27/19 18:48	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			11/27/19 18:48	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			11/27/19 18:48	1
o-Xylene	0.50	U	0.50	0.29	ug/L			11/27/19 18:48	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			11/27/19 18:48	1
Styrene	0.50	U	0.50	0.21	ug/L			11/27/19 18:48	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			11/27/19 18:48	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			11/27/19 18:48	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-452283/15
Matrix: Water
Analysis Batch: 452283

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Toluene	0.50	U	0.50	0.19	ug/L			11/27/19 18:48	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			11/27/19 18:48	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			11/27/19 18:48	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			11/27/19 18:48	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			11/27/19 18:48	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/27/19 18:48	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			11/27/19 18:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*		*11/27/19 18:48*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*11/27/19 18:48*	*1*

Lab Sample ID: LCS 160-452283/13
Matrix: Water
Analysis Batch: 452283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,1-Trichloroethane	10.0	10.4		ug/L		104	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.37		ug/L		94	70 - 130
1,1,2-Trichloroethane	10.0	9.73		ug/L		97	70 - 130
1,1-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethene	10.0	10.4		ug/L		104	70 - 130
1,1-Dichloropropene	10.0	10.5		ug/L		105	70 - 130
1,2,3-Trichlorobenzene	10.0	10.1		ug/L		101	70 - 130
1,2,3-Trichloropropane	10.0	9.13		ug/L		91	70 - 130
1,2,4-Trichlorobenzene	10.0	10.5		ug/L		105	70 - 130
1,2,4-Trimethylbenzene	10.0	10.5		ug/L		105	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	9.61		ug/L		96	70 - 130
1,2-Dibromoethane	10.0	9.80		ug/L		98	70 - 130
1,2-Dichlorobenzene	10.0	10.0		ug/L		100	70 - 130
1,2-Dichloroethane	10.0	9.40		ug/L		94	70 - 130
1,2-Dichloropropane	10.0	9.66		ug/L		97	70 - 130
1,3,5-Trimethylbenzene	10.0	10.6		ug/L		106	70 - 130
1,3-Dichlorobenzene	10.0	10.1		ug/L		101	70 - 130
1,3-Dichloropropane	10.0	9.79		ug/L		98	70 - 130
1,4-Dichlorobenzene	10.0	10.1		ug/L		101	70 - 130
2,2-Dichloropropane	10.0	10.9		ug/L		109	70 - 130
2-Chlorotoluene	10.0	10.1		ug/L		101	70 - 130
4-Chlorotoluene	10.0	10.6		ug/L		106	70 - 130
4-Isopropyltoluene	10.0	10.8		ug/L		108	70 - 130
Benzene	10.0	10.1		ug/L		101	70 - 130
Bromobenzene	10.0	10.0		ug/L		100	70 - 130
Bromochloromethane	10.0	9.94		ug/L		99	70 - 130
Bromodichloromethane	10.0	9.72		ug/L		97	70 - 130
Bromoform	10.0	8.92		ug/L		89	70 - 130
Bromomethane	10.0	10.5		ug/L		105	70 - 130
Carbon tetrachloride	10.0	10.5		ug/L		105	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-452283/13
Matrix: Water
Analysis Batch: 452283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorobenzene	10.0	10.4		ug/L		104	70 - 130
Chloroethane	10.0	9.99		ug/L		100	70 - 130
Chloroform	10.0	9.87		ug/L		99	70 - 130
Chloromethane	10.0	9.70		ug/L		97	70 - 130
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	70 - 130
cis-1,3-Dichloropropene	10.0	9.44		ug/L		94	70 - 130
Dibromochloromethane	10.0	9.75		ug/L		97	70 - 130
Dibromomethane	10.0	9.79		ug/L		98	70 - 130
Dichlorodifluoromethane	10.0	10.4		ug/L		104	70 - 130
Ethylbenzene	10.0	10.7		ug/L		107	70 - 130
Hexachlorobutadiene	10.0	10.7		ug/L		107	70 - 130
Isopropylbenzene	10.0	10.9		ug/L		109	70 - 130
Methylene Chloride	10.0	9.84		ug/L		98	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.57		ug/L		96	70 - 130
m-Xylene & p-Xylene	20.0	21.1		ug/L		105	70 - 130
Naphthalene	10.0	9.41		ug/L		94	70 - 130
n-Butylbenzene	10.0	10.7		ug/L		107	70 - 130
N-Propylbenzene	10.0	10.8		ug/L		108	70 - 130
o-Xylene	10.0	10.5		ug/L		105	70 - 130
sec-Butylbenzene	10.0	10.7		ug/L		107	70 - 130
Styrene	10.0	10.5		ug/L		105	70 - 130
tert-Butylbenzene	10.0	10.8		ug/L		108	70 - 130
Tetrachloroethene	10.0	10.7		ug/L		107	70 - 130
Toluene	10.0	10.8		ug/L		108	70 - 130
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 130
trans-1,3-Dichloropropene	10.0	9.83		ug/L		98	70 - 130
Trichloroethene	10.0	10.1		ug/L		101	70 - 130
Trichlorofluoromethane	10.0	10.1		ug/L		101	70 - 130
Vinyl chloride	10.0	10.1		ug/L		101	70 - 130
Xylenes, Total	30.0	31.6		ug/L		105	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 160-36436-A-8 MS
Matrix: Water
Analysis Batch: 452283

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.50	U	10.0	10.5		ug/L		105	73 - 123
1,1,1-Trichloroethane	1.6		10.0	11.5		ug/L		99	76 - 122
1,1,2,2-Tetrachloroethane	0.50	U	10.0	10.6		ug/L		106	77 - 118
1,1,2-Trichloroethane	0.50	U	10.0	10.7		ug/L		107	79 - 116
1,1-Dichloroethane	0.50		10.0	10.8		ug/L		103	81 - 120
1,1-Dichloroethene	2.2		10.0	11.6		ug/L		94	68 - 116
1,1-Dichloropropene	0.50	U	10.0	9.43		ug/L		94	74 - 124
1,2,3-Trichlorobenzene	0.59	U	10.0	10.4		ug/L		104	57 - 128

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-36436-A-8 MS
Matrix: Water
Analysis Batch: 452283

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	0.50	U	10.0	10.7		ug/L		107	72 - 122
1,2,4-Trichlorobenzene	0.55	U	10.0	10.4		ug/L		104	54 - 150
1,2,4-Trimethylbenzene	0.50	U	10.0	10.1		ug/L		101	70 - 125
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	10.5		ug/L		105	58 - 130
1,2-Dibromoethane	0.50	U	10.0	10.7		ug/L		107	76 - 118
1,2-Dichlorobenzene	0.50	U	10.0	10.5		ug/L		105	76 - 120
1,2-Dichloroethane	0.50	U	10.0	11.0		ug/L		110	78 - 123
1,2-Dichloropropane	0.50	U	10.0	10.6		ug/L		106	80 - 119
1,3,5-Trimethylbenzene	0.50	U	10.0	10.0		ug/L		100	76 - 126
1,3-Dichlorobenzene	0.50	U	10.0	10.1		ug/L		101	76 - 120
1,3-Dichloropropane	0.50	U	10.0	10.7		ug/L		107	79 - 116
1,4-Dichlorobenzene	0.50	U	10.0	10.3		ug/L		103	75 - 117
2,2-Dichloropropane	0.50	U	10.0	9.04		ug/L		90	76 - 120
2-Chlorotoluene	0.50	U	10.0	10.4		ug/L		104	79 - 125
4-Chlorotoluene	0.50	U	10.0	10.2		ug/L		102	76 - 136
4-Isopropyltoluene	0.50	U	10.0	9.66		ug/L		97	78 - 132
Benzene	0.50	U	10.0	10.4		ug/L		104	77 - 124
Bromobenzene	0.50	U	10.0	10.4		ug/L		104	77 - 115
Bromochloromethane	0.50	U	10.0	11.1		ug/L		111	73 - 118
Bromodichloromethane	0.50	U	10.0	10.8		ug/L		108	73 - 118
Bromoform	0.50	U	10.0	9.70		ug/L		97	70 - 118
Bromomethane	0.50	U	10.0	10.5		ug/L		105	46 - 147
Carbon tetrachloride	0.50	U	10.0	9.60		ug/L		96	70 - 128
Chlorobenzene	0.50	U	10.0	10.2		ug/L		102	76 - 124
Chloroethane	0.50	U	10.0	9.81		ug/L		98	66 - 129
Chloroform	3.3		10.0	14.0		ug/L		107	77 - 122
Chloromethane	0.50	U	10.0	9.83		ug/L		98	68 - 132
cis-1,2-Dichloroethene	0.50	U	10.0	10.8		ug/L		108	71 - 117
cis-1,3-Dichloropropene	0.50	U	10.0	9.91		ug/L		99	76 - 128
Dibromochloromethane	0.50	U	10.0	10.4		ug/L		104	73 - 114
Dibromomethane	0.50	U	10.0	11.1		ug/L		111	77 - 118
Dichlorodifluoromethane	0.50	U	10.0	8.96		ug/L		90	61 - 134
Ethylbenzene	0.50	U	10.0	9.99		ug/L		100	80 - 122
Hexachlorobutadiene	0.50	U	10.0	8.50		ug/L		85	57 - 144
Isopropylbenzene	0.50	U	10.0	9.78		ug/L		98	85 - 148
Methylene Chloride	0.50	U	10.0	10.7		ug/L		107	65 - 131
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	11.1		ug/L		111	75 - 122
m-Xylene & p-Xylene	1.0	U	20.0	19.9		ug/L		99	70 - 130
Naphthalene	0.67	U	10.0	10.1		ug/L		101	56 - 143
n-Butylbenzene	0.50	U	10.0	9.36		ug/L		94	74 - 128
N-Propylbenzene	0.50	U	10.0	9.82		ug/L		98	80 - 132
o-Xylene	0.50	U	10.0	10.2		ug/L		102	70 - 130
sec-Butylbenzene	0.50	U	10.0	9.44		ug/L		94	78 - 128
Styrene	0.50	U	10.0	10.4		ug/L		104	68 - 125
tert-Butylbenzene	0.50	U	10.0	9.73		ug/L		97	75 - 131
Tetrachloroethene	0.51		10.0	9.78		ug/L		93	71 - 124
Toluene	0.50	U	10.0	10.2		ug/L		102	76 - 127
trans-1,2-Dichloroethene	0.50	U	10.0	10.0		ug/L		100	72 - 117
trans-1,3-Dichloropropene	0.50	U	10.0	10.1		ug/L		101	85 - 135

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-36436-A-8 MS
Matrix: Water
Analysis Batch: 452283

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	1.1		10.0	11.0		ug/L		99	71 - 118
Trichlorofluoromethane	0.50	U	10.0	8.94		ug/L		89	56 - 127
Vinyl chloride	0.50	U	10.0	8.94		ug/L		89	58 - 114
Xylenes, Total	3.0	U	30.0	30.1		ug/L		100	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: 160-36436-A-8 MSD
Matrix: Water
Analysis Batch: 452283

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.50	U	10.0	10.6		ug/L		106	73 - 123	1	20
1,1,1-Trichloroethane	1.6		10.0	11.3		ug/L		98	76 - 122	1	20
1,1,2,2-Tetrachloroethane	0.50	U	10.0	10.4		ug/L		104	77 - 118	2	20
1,1,2-Trichloroethane	0.50	U	10.0	10.8		ug/L		108	79 - 116	1	20
1,1-Dichloroethane	0.50		10.0	10.5		ug/L		100	81 - 120	3	20
1,1-Dichloroethene	2.2		10.0	11.4		ug/L		92	68 - 116	3	20
1,1-Dichloropropene	0.50	U	10.0	9.47		ug/L		95	74 - 124	0	20
1,2,3-Trichlorobenzene	0.59	U	10.0	10.8		ug/L		108	57 - 128	4	20
1,2,3-Trichloropropane	0.50	U	10.0	10.8		ug/L		108	72 - 122	1	20
1,2,4-Trichlorobenzene	0.55	U	10.0	10.8		ug/L		108	54 - 150	4	20
1,2,4-Trimethylbenzene	0.50	U	10.0	10.3		ug/L		103	70 - 125	2	20
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	10.3		ug/L		103	58 - 130	2	20
1,2-Dibromoethane	0.50	U	10.0	10.8		ug/L		108	76 - 118	1	20
1,2-Dichlorobenzene	0.50	U	10.0	10.6		ug/L		106	76 - 120	0	20
1,2-Dichloroethane	0.50	U	10.0	10.8		ug/L		108	78 - 123	1	20
1,2-Dichloropropane	0.50	U	10.0	10.6		ug/L		106	80 - 119	1	20
1,3,5-Trimethylbenzene	0.50	U	10.0	10.1		ug/L		101	76 - 126	1	20
1,3-Dichlorobenzene	0.50	U	10.0	10.2		ug/L		102	76 - 120	1	20
1,3-Dichloropropane	0.50	U	10.0	10.7		ug/L		107	79 - 116	0	20
1,4-Dichlorobenzene	0.50	U	10.0	10.4		ug/L		104	75 - 117	0	20
2,2-Dichloropropane	0.50	U	10.0	8.65		ug/L		86	76 - 120	4	20
2-Chlorotoluene	0.50	U	10.0	10.2		ug/L		102	79 - 125	1	20
4-Chlorotoluene	0.50	U	10.0	10.4		ug/L		104	76 - 136	2	20
4-Isopropyltoluene	0.50	U	10.0	9.85		ug/L		99	78 - 132	2	20
Benzene	0.50	U	10.0	10.4		ug/L		104	77 - 124	0	20
Bromobenzene	0.50	U	10.0	10.6		ug/L		106	77 - 115	2	20
Bromochloromethane	0.50	U	10.0	10.8		ug/L		108	73 - 118	2	20
Bromodichloromethane	0.50	U	10.0	10.8		ug/L		108	73 - 118	1	20
Bromoform	0.50	U	10.0	9.40		ug/L		94	70 - 118	3	20
Bromomethane	0.50	U	10.0	10.3		ug/L		103	46 - 147	2	20
Carbon tetrachloride	0.50	U	10.0	9.39		ug/L		94	70 - 128	2	20
Chlorobenzene	0.50	U	10.0	10.4		ug/L		104	76 - 124	1	20
Chloroethane	0.50	U	10.0	9.40		ug/L		94	66 - 129	4	20
Chloroform	3.3		10.0	13.6		ug/L		103	77 - 122	3	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-36436-A-8 MSD
Matrix: Water
Analysis Batch: 452283

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloromethane	0.50	U	10.0	9.27		ug/L		93	68 - 132	6	20
cis-1,2-Dichloroethene	0.50	U	10.0	10.6		ug/L		106	71 - 117	2	20
cis-1,3-Dichloropropene	0.50	U	10.0	9.91		ug/L		99	76 - 128	0	20
Dibromochloromethane	0.50	U	10.0	10.7		ug/L		107	73 - 114	3	20
Dibromomethane	0.50	U	10.0	10.8		ug/L		108	77 - 118	3	20
Dichlorodifluoromethane	0.50	U	10.0	8.75		ug/L		88	61 - 134	2	20
Ethylbenzene	0.50	U	10.0	10.1		ug/L		101	80 - 122	1	20
Hexachlorobutadiene	0.50	U	10.0	9.21		ug/L		92	57 - 144	8	20
Isopropylbenzene	0.50	U	10.0	9.90		ug/L		99	85 - 148	1	20
Methylene Chloride	0.50	U	10.0	10.5		ug/L		105	65 - 131	1	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	10.9		ug/L		109	75 - 122	2	20
m-Xylene & p-Xylene	1.0	U	20.0	20.0		ug/L		100	70 - 130	1	20
Naphthalene	0.67	U	10.0	10.7		ug/L		107	56 - 143	6	20
n-Butylbenzene	0.50	U	10.0	9.65		ug/L		97	74 - 128	3	20
N-Propylbenzene	0.50	U	10.0	9.97		ug/L		100	80 - 132	1	20
o-Xylene	0.50	U	10.0	10.2		ug/L		102	70 - 130	1	20
sec-Butylbenzene	0.50	U	10.0	9.65		ug/L		96	78 - 128	2	20
Styrene	0.50	U	10.0	10.3		ug/L		103	68 - 125	0	20
tert-Butylbenzene	0.50	U	10.0	9.89		ug/L		99	75 - 131	2	20
Tetrachloroethene	0.51		10.0	9.95		ug/L		94	71 - 124	2	20
Toluene	0.50	U	10.0	10.5		ug/L		105	76 - 127	3	20
trans-1,2-Dichloroethene	0.50	U	10.0	9.81		ug/L		98	72 - 117	2	20
trans-1,3-Dichloropropene	0.50	U	10.0	10.4		ug/L		104	85 - 135	3	20
Trichloroethene	1.1		10.0	10.8		ug/L		97	71 - 118	2	20
Trichlorofluoromethane	0.50	U	10.0	8.58		ug/L		86	56 - 127	4	20
Vinyl chloride	0.50	U	10.0	8.54		ug/L		85	58 - 114	5	20
Xylenes, Total	3.0	U	30.0	30.2		ug/L		101	78 - 128	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-451967/1-A
Matrix: Water
Analysis Batch: 452204

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 451967

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		11/25/19 14:51	11/26/19 23:13	2

Lab Sample ID: LCS 160-451967/2-A
Matrix: Water
Analysis Batch: 452204

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 451967

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	221		ug/L		110	80 - 120		

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 160-36460-2 MS
Matrix: Water
Analysis Batch: 452204

Client Sample ID: 41519-002
Prep Type: Total/NA
Prep Batch: 451967

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	213		ug/L		106	75 - 125		

Lab Sample ID: 160-36460-2 MSD
Matrix: Water
Analysis Batch: 452204

Client Sample ID: 41519-002
Prep Type: Total/NA
Prep Batch: 451967

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	216		ug/L		108	75 - 125	2	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36460-1
SDG: 41519

GC/MS VOA

Analysis Batch: 451580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36460-3	41519-003	Total/NA	Water	524.2	
MB 160-451580/6	Method Blank	Total/NA	Water	524.2	
LCS 160-451580/4	Lab Control Sample	Total/NA	Water	524.2	
160-36364-A-5 MS	Matrix Spike	Total/NA	Water	524.2	
160-36364-A-5 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Analysis Batch: 452283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36460-1	41519-001	Total/NA	Water	524.2	
160-36460-2	41519-002	Total/NA	Water	524.2	
MB 160-452283/15	Method Blank	Total/NA	Water	524.2	
LCS 160-452283/13	Lab Control Sample	Total/NA	Water	524.2	
160-36436-A-8 MS	Matrix Spike	Total/NA	Water	524.2	
160-36436-A-8 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Metals

Prep Batch: 451967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36460-2	41519-002	Total/NA	Water	3010A	
MB 160-451967/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-451967/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-36460-2 MS	41519-002	Total/NA	Water	3010A	
160-36460-2 MSD	41519-002	Total/NA	Water	3010A	

Analysis Batch: 452204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36460-2	41519-002	Total/NA	Water	6020A	451967
MB 160-451967/1-A	Method Blank	Total/NA	Water	6020A	451967
LCS 160-451967/2-A	Lab Control Sample	Total/NA	Water	6020A	451967
160-36460-2 MS	41519-002	Total/NA	Water	6020A	451967
160-36460-2 MSD	41519-002	Total/NA	Water	6020A	451967

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36460-1
SDG: 41519

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-36364-A-5 MS	Matrix Spike	115	98
160-36364-A-5 MSD	Matrix Spike Duplicate	115	108
160-36436-A-8 MS	Matrix Spike	108	106
160-36436-A-8 MSD	Matrix Spike Duplicate	108	107
160-36460-1	41519-001	113	100
160-36460-2	41519-002	112	102
160-36460-3	41519-003	117	102
LCS 160-451580/4	Lab Control Sample	112	110
LCS 160-452283/13	Lab Control Sample	103	107
MB 160-451580/6	Method Blank	117	104
MB 160-452283/15	Method Blank	108	102

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
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Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-36587-1
Laboratory Sample Delivery Group: 41546
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

MichaKorrinhizer

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-36587-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-36587-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client.

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 12/4/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.0º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41546-001 (160-36587-1), 41546-002 (160-36587-2) and 41546-003 (160-36587-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 12/12/2019.

Job ID: 160-36587-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41546-002 (160-36587-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 12/05/2019 and analyzed on 12/11/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41546

Requires EDD Y

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Miln	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD USE TB-1 For 41567, 41568

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	12/3/19	1058	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1100	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1100	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X							

160-36587 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milne 12/3/19	Print	Print
Signature 1300	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Nicholas Press 12-4-19	Print	Print
Signature 0930	Signature	Signature

Contractor Lab Sample Disposal:
- ❑ Return To Client
- ☒ Disposal by Lab
- ❑ Archive For _____ Months

Data Package: ❑ Full ☒ Summary

Turn-Around Time Required:
- ❑ Rush (1 Day)
- ☒ 14 Days
- ❑ 30 Days
- ❑ 7 Days
- ❑ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-36587-1
SDG Number: 41546

Login Number: 36587
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36587-1
SDG: 41546

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36587-1
SDG: 41546

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36587-1
SDG: 41546

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-36587-1	41546-001	Water	12/03/19 10:58	12/04/19 09:30	
160-36587-2	41546-002	Water	12/03/19 11:00	12/04/19 09:30	
160-36587-3	41546-003	Water	12/03/19 09:00	12/04/19 09:30	

Client Sample ID: 41546-001

Date Collected: 12/03/19 10:58
Date Received: 12/04/19 09:30

Lab Sample ID: 160-36587-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/12/19 13:49	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/12/19 13:49	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			12/12/19 13:49	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			12/12/19 13:49	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			12/12/19 13:49	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			12/12/19 13:49	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			12/12/19 13:49	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			12/12/19 13:49	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			12/12/19 13:49	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			12/12/19 13:49	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			12/12/19 13:49	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			12/12/19 13:49	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			12/12/19 13:49	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			12/12/19 13:49	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			12/12/19 13:49	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			12/12/19 13:49	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			12/12/19 13:49	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			12/12/19 13:49	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			12/12/19 13:49	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			12/12/19 13:49	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			12/12/19 13:49	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			12/12/19 13:49	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			12/12/19 13:49	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			12/12/19 13:49	1
Benzene	0.50	U	0.50	0.10	ug/L			12/12/19 13:49	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			12/12/19 13:49	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			12/12/19 13:49	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			12/12/19 13:49	1
Bromoform	0.50	U	0.50	0.25	ug/L			12/12/19 13:49	1
Bromomethane	0.50	U	0.50	0.38	ug/L			12/12/19 13:49	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			12/12/19 13:49	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			12/12/19 13:49	1
Chloroethane	0.50	U	0.50	0.18	ug/L			12/12/19 13:49	1
Chloroform	**0.84**		0.50	0.24	ug/L			12/12/19 13:49	1
Chloromethane	0.50	U	0.50	0.20	ug/L			12/12/19 13:49	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/12/19 13:49	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/12/19 13:49	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			12/12/19 13:49	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			12/12/19 13:49	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			12/12/19 13:49	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			12/12/19 13:49	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			12/12/19 13:49	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			12/12/19 13:49	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			12/12/19 13:49	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/12/19 13:49	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			12/12/19 13:49	1
Naphthalene	0.67	U	0.67	0.57	ug/L			12/12/19 13:49	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			12/12/19 13:49	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			12/12/19 13:49	1

Client Sample ID: 41546-001

Lab Sample ID: 160-36587-1

Date Collected: 12/03/19 10:58

Matrix: Water

Date Received: 12/04/19 09:30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			12/12/19 13:49	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			12/12/19 13:49	1
Styrene	0.50	U	0.50	0.21	ug/L			12/12/19 13:49	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			12/12/19 13:49	1
Tetrachloroethene	**6.1**		0.50	0.19	ug/L			12/12/19 13:49	1
Toluene	0.50	U	0.50	0.19	ug/L			12/12/19 13:49	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/12/19 13:49	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			12/12/19 13:49	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			12/12/19 13:49	1
Trichlorofluoromethane	**0.55**		0.50	0.16	ug/L			12/12/19 13:49	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/12/19 13:49	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			12/12/19 13:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*		*12/12/19 13:49*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*12/12/19 13:49*	*1*

Client Sample ID: 41546-002

Lab Sample ID: 160-36587-2

Date Collected: 12/03/19 11:00

Matrix: Water

Date Received: 12/04/19 09:30

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/12/19 14:12	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/12/19 14:12	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			12/12/19 14:12	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			12/12/19 14:12	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			12/12/19 14:12	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			12/12/19 14:12	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			12/12/19 14:12	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			12/12/19 14:12	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			12/12/19 14:12	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			12/12/19 14:12	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			12/12/19 14:12	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			12/12/19 14:12	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			12/12/19 14:12	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			12/12/19 14:12	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			12/12/19 14:12	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			12/12/19 14:12	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			12/12/19 14:12	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			12/12/19 14:12	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			12/12/19 14:12	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			12/12/19 14:12	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			12/12/19 14:12	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			12/12/19 14:12	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			12/12/19 14:12	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			12/12/19 14:12	1
Benzene	0.50	U	0.50	0.10	ug/L			12/12/19 14:12	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			12/12/19 14:12	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			12/12/19 14:12	1

Client Sample ID: 41546-002

Date Collected: 12/03/19 11:00
Date Received: 12/04/19 09:30

Lab Sample ID: 160-36587-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			12/12/19 14:12	1
Bromoform	0.50	U	0.50	0.25	ug/L			12/12/19 14:12	1
Bromomethane	0.50	U	0.50	0.38	ug/L			12/12/19 14:12	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			12/12/19 14:12	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			12/12/19 14:12	1
Chloroethane	0.50	U	0.50	0.18	ug/L			12/12/19 14:12	1
Chloroform	0.50	U	0.50	0.24	ug/L			12/12/19 14:12	1
Chloromethane	0.50	U	0.50	0.20	ug/L			12/12/19 14:12	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/12/19 14:12	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/12/19 14:12	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			12/12/19 14:12	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			12/12/19 14:12	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			12/12/19 14:12	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			12/12/19 14:12	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			12/12/19 14:12	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			12/12/19 14:12	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			12/12/19 14:12	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/12/19 14:12	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			12/12/19 14:12	1
Naphthalene	0.67	U	0.67	0.57	ug/L			12/12/19 14:12	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			12/12/19 14:12	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			12/12/19 14:12	1
o-Xylene	0.50	U	0.50	0.29	ug/L			12/12/19 14:12	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			12/12/19 14:12	1
Styrene	0.50	U	0.50	0.21	ug/L			12/12/19 14:12	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			12/12/19 14:12	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			12/12/19 14:12	1
Toluene	0.50	U	0.50	0.19	ug/L			12/12/19 14:12	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/12/19 14:12	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			12/12/19 14:12	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			12/12/19 14:12	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			12/12/19 14:12	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/12/19 14:12	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			12/12/19 14:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*		*12/12/19 14:12*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*12/12/19 14:12*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		12/05/19 16:08	12/11/19 03:25	2

Client Sample ID: 41546-003

Date Collected: 12/03/19 09:00
Date Received: 12/04/19 09:30

Lab Sample ID: 160-36587-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/12/19 11:13	1

Client Sample ID: 41546-003
Date Collected: 12/03/19 09:00
Date Received: 12/04/19 09:30

Lab Sample ID: 160-36587-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/12/19 11:13	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			12/12/19 11:13	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			12/12/19 11:13	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			12/12/19 11:13	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			12/12/19 11:13	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			12/12/19 11:13	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			12/12/19 11:13	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			12/12/19 11:13	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			12/12/19 11:13	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			12/12/19 11:13	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			12/12/19 11:13	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			12/12/19 11:13	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			12/12/19 11:13	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			12/12/19 11:13	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			12/12/19 11:13	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			12/12/19 11:13	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			12/12/19 11:13	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			12/12/19 11:13	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			12/12/19 11:13	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			12/12/19 11:13	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			12/12/19 11:13	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			12/12/19 11:13	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			12/12/19 11:13	1
Benzene	0.50	U	0.50	0.10	ug/L			12/12/19 11:13	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			12/12/19 11:13	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			12/12/19 11:13	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			12/12/19 11:13	1
Bromoform	0.50	U	0.50	0.25	ug/L			12/12/19 11:13	1
Bromomethane	0.50	U	0.50	0.38	ug/L			12/12/19 11:13	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			12/12/19 11:13	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			12/12/19 11:13	1
Chloroethane	0.50	U	0.50	0.18	ug/L			12/12/19 11:13	1
Chloroform	**0.69**		0.50	0.24	ug/L			12/12/19 11:13	1
Chloromethane	0.50	U	0.50	0.20	ug/L			12/12/19 11:13	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/12/19 11:13	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/12/19 11:13	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			12/12/19 11:13	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			12/12/19 11:13	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			12/12/19 11:13	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			12/12/19 11:13	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			12/12/19 11:13	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			12/12/19 11:13	1
Methylene Chloride	**3.0**		0.50	0.27	ug/L			12/12/19 11:13	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/12/19 11:13	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			12/12/19 11:13	1
Naphthalene	0.67	U	0.67	0.57	ug/L			12/12/19 11:13	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			12/12/19 11:13	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			12/12/19 11:13	1
o-Xylene	0.50	U	0.50	0.29	ug/L			12/12/19 11:13	1

Client Sample ID: 41546-003

Date Collected: 12/03/19 09:00
Date Received: 12/04/19 09:30

Lab Sample ID: 160-36587-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			12/12/19 11:13	1
Styrene	0.50	U	0.50	0.21	ug/L			12/12/19 11:13	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			12/12/19 11:13	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			12/12/19 11:13	1
Toluene	0.50	U	0.50	0.19	ug/L			12/12/19 11:13	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/12/19 11:13	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			12/12/19 11:13	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			12/12/19 11:13	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			12/12/19 11:13	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/12/19 11:13	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			12/12/19 11:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*		*12/12/19 11:13*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*12/12/19 11:13*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-454050/6
Matrix: Water
Analysis Batch: 454050

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/12/19 10:50	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/12/19 10:50	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			12/12/19 10:50	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			12/12/19 10:50	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			12/12/19 10:50	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			12/12/19 10:50	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			12/12/19 10:50	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			12/12/19 10:50	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			12/12/19 10:50	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			12/12/19 10:50	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			12/12/19 10:50	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			12/12/19 10:50	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			12/12/19 10:50	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			12/12/19 10:50	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			12/12/19 10:50	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			12/12/19 10:50	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			12/12/19 10:50	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			12/12/19 10:50	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			12/12/19 10:50	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			12/12/19 10:50	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			12/12/19 10:50	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			12/12/19 10:50	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			12/12/19 10:50	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			12/12/19 10:50	1
Benzene	0.50	U	0.50	0.10	ug/L			12/12/19 10:50	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			12/12/19 10:50	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			12/12/19 10:50	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			12/12/19 10:50	1
Bromoform	0.50	U	0.50	0.25	ug/L			12/12/19 10:50	1
Bromomethane	0.50	U	0.50	0.38	ug/L			12/12/19 10:50	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			12/12/19 10:50	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			12/12/19 10:50	1
Chloroethane	0.50	U	0.50	0.18	ug/L			12/12/19 10:50	1
Chloroform	0.50	U	0.50	0.24	ug/L			12/12/19 10:50	1
Chloromethane	0.50	U	0.50	0.20	ug/L			12/12/19 10:50	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/12/19 10:50	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/12/19 10:50	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			12/12/19 10:50	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			12/12/19 10:50	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			12/12/19 10:50	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			12/12/19 10:50	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			12/12/19 10:50	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			12/12/19 10:50	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			12/12/19 10:50	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/12/19 10:50	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			12/12/19 10:50	1
Naphthalene	0.67	U	0.67	0.57	ug/L			12/12/19 10:50	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			12/12/19 10:50	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-454050/6
Matrix: Water
Analysis Batch: 454050

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			12/12/19 10:50	1
o-Xylene	0.50	U	0.50	0.29	ug/L			12/12/19 10:50	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			12/12/19 10:50	1
Styrene	0.50	U	0.50	0.21	ug/L			12/12/19 10:50	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			12/12/19 10:50	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			12/12/19 10:50	1
Toluene	0.50	U	0.50	0.19	ug/L			12/12/19 10:50	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/12/19 10:50	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			12/12/19 10:50	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			12/12/19 10:50	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			12/12/19 10:50	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/12/19 10:50	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			12/12/19 10:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*		*12/12/19 10:50*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*12/12/19 10:50*	*1*

Lab Sample ID: LCS 160-454050/4
Matrix: Water
Analysis Batch: 454050

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.6		ug/L		106	70 - 130
1,1,1-Trichloroethane	10.0	10.7		ug/L		107	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.2		ug/L		102	70 - 130
1,1,2-Trichloroethane	10.0	10.4		ug/L		104	70 - 130
1,1-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
1,1-Dichloropropene	10.0	10.4		ug/L		104	70 - 130
1,2,3-Trichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,2,3-Trichloropropane	10.0	10.0		ug/L		100	70 - 130
1,2,4-Trichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,2,4-Trimethylbenzene	10.0	10.3		ug/L		103	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	10.6		ug/L		106	70 - 130
1,2-Dibromoethane	10.0	10.7		ug/L		107	70 - 130
1,2-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,2-Dichloroethane	10.0	9.91		ug/L		99	70 - 130
1,2-Dichloropropane	10.0	10.1		ug/L		101	70 - 130
1,3,5-Trimethylbenzene	10.0	10.5		ug/L		105	70 - 130
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,3-Dichloropropane	10.0	10.4		ug/L		104	70 - 130
1,4-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130
2,2-Dichloropropane	10.0	10.9		ug/L		109	70 - 130
2-Chlorotoluene	10.0	10.5		ug/L		105	70 - 130
4-Chlorotoluene	10.0	10.5		ug/L		105	70 - 130
4-Isopropyltoluene	10.0	10.7		ug/L		107	70 - 130
Benzene	10.0	10.3		ug/L		103	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-454050/4
Matrix: Water
Analysis Batch: 454050

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.2		ug/L		102	70 - 130
Bromochloromethane	10.0	10.4		ug/L		104	70 - 130
Bromodichloromethane	10.0	10.2		ug/L		102	70 - 130
Bromoform	10.0	9.61		ug/L		96	70 - 130
Bromomethane	10.0	10.1		ug/L		101	70 - 130
Carbon tetrachloride	10.0	11.0		ug/L		110	70 - 130
Chlorobenzene	10.0	10.3		ug/L		103	70 - 130
Chloroethane	10.0	10.0		ug/L		100	70 - 130
Chloroform	10.0	10.0		ug/L		100	70 - 130
Chloromethane	10.0	9.32		ug/L		93	70 - 130
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
cis-1,3-Dichloropropene	10.0	10.0		ug/L		100	70 - 130
Dibromochloromethane	10.0	10.4		ug/L		104	70 - 130
Dibromomethane	10.0	10.5		ug/L		105	70 - 130
Dichlorodifluoromethane	10.0	9.45		ug/L		95	70 - 130
Ethylbenzene	10.0	10.5		ug/L		105	70 - 130
Hexachlorobutadiene	10.0	10.2		ug/L		102	70 - 130
Isopropylbenzene	10.0	10.7		ug/L		107	70 - 130
Methylene Chloride	10.0	10.4		ug/L		104	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.6		ug/L		106	70 - 130
m-Xylene & p-Xylene	20.0	20.7		ug/L		104	70 - 130
Naphthalene	10.0	10.3		ug/L		103	70 - 130
n-Butylbenzene	10.0	10.6		ug/L		106	70 - 130
N-Propylbenzene	10.0	10.6		ug/L		106	70 - 130
o-Xylene	10.0	10.4		ug/L		104	70 - 130
sec-Butylbenzene	10.0	10.6		ug/L		106	70 - 130
Styrene	10.0	10.6		ug/L		106	70 - 130
tert-Butylbenzene	10.0	10.5		ug/L		105	70 - 130
Tetrachloroethene	10.0	10.3		ug/L		103	70 - 130
Toluene	10.0	10.7		ug/L		107	70 - 130
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	70 - 130
Trichloroethene	10.0	10.3		ug/L		103	70 - 130
Trichlorofluoromethane	10.0	10.4		ug/L		104	70 - 130
Vinyl chloride	10.0	9.58		ug/L		96	70 - 130
Xylenes, Total	30.0	31.1		ug/L		104	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-453190/1-A
Matrix: Water
Analysis Batch: 453935

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 453190

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		12/05/19 16:08	12/11/19 03:11	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-453190/2-A
Matrix: Water
Analysis Batch: 453935

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 453190

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	193		ug/L		96	80 - 120		

Lab Sample ID: 160-36587-2 MS
Matrix: Water
Analysis Batch: 453935

Client Sample ID: 41546-002
Prep Type: Total/NA
Prep Batch: 453190

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	194		ug/L		97	75 - 125		

Lab Sample ID: 160-36587-2 MSD
Matrix: Water
Analysis Batch: 453935

Client Sample ID: 41546-002
Prep Type: Total/NA
Prep Batch: 453190

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	194		ug/L		97	75 - 125	0	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36587-1
SDG: 41546

GC/MS VOA

Analysis Batch: 454050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36587-1	41546-001	Total/NA	Water	524.2	
160-36587-2	41546-002	Total/NA	Water	524.2	
160-36587-3	41546-003	Total/NA	Water	524.2	
MB 160-454050/6	Method Blank	Total/NA	Water	524.2	
LCS 160-454050/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 453190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36587-2	41546-002	Total/NA	Water	3010A	
MB 160-453190/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-453190/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-36587-2 MS	41546-002	Total/NA	Water	3010A	
160-36587-2 MSD	41546-002	Total/NA	Water	3010A	

Analysis Batch: 453935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36587-2	41546-002	Total/NA	Water	6020A	453190
MB 160-453190/1-A	Method Blank	Total/NA	Water	6020A	453190
LCS 160-453190/2-A	Lab Control Sample	Total/NA	Water	6020A	453190
160-36587-2 MS	41546-002	Total/NA	Water	6020A	453190
160-36587-2 MSD	41546-002	Total/NA	Water	6020A	453190

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36587-1
SDG: 41546

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-36587-1	41546-001	110	99
160-36587-2	41546-002	109	99
160-36587-3	41546-003	108	100
LCS 160-454050/4	Lab Control Sample	105	108
MB 160-454050/6	Method Blank	110	102

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-36760-1
Laboratory Sample Delivery Group: 41604
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

MichaKorrinhizer

Authorized for release by:
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micha.korrinhizer@testamericainc.com

Designee for

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-36760-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-36760-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client.

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 12/18/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.1 C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41604-001 (160-36760-1) and 41604-002 (160-36760-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 12/20/2019.

Job ID: 160-36760-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

The continuing calibration verification (CCVIS) associated with batch 160-454817 recovered above the upper control limit for 1,2-Dibromo-3-Chloropropane and n-Butylbenzene. The samples associated with this CCV excursion were non-detect for the affected analytes; therefore, the data have been reported. The following samples are impacted: 41604-001 (160-36760-1), 41604-002 (160-36760-2) and (CCVIS 160-454817/3).

The laboratory control sample (LCS) for analytical batch 160-454817 recovered outside of upper control limits for the following analyte: n-Butylbenzene. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41604-002 (160-36760-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 12/23/2019 and analyzed on 12/28/2019.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-36760 Chain of Custody

Requires EDD Y

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41604

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Milligan	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD use TB-1 from CoC # 41603

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	12/17/14	1138	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	1140	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	1140	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0			W	Trip Blank	40 ML	SC	3	HCL					X					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milligan 12/17/14	Print	Print
Signature 1500	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print L. Harris 12.18.14	Print	Print
Signature 10:40	Signature	Signature

Contractor Lab Sample Disposal
- ☐ Return To Client
- ☐ Archive For _____ Months
- ☑ Disposal by Lab

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☑ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-36760-1
SDG Number: 41604

Login Number: 36760
List Number: 1
Creator: McKinney, Gerrod E

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36760-1
SDG: 41604

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36760-1
SDG: 41604

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36760-1
SDG: 41604

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-36760-1	41604-001	Water	12/17/19 11:38	12/18/19 10:40	
160-36760-2	41604-002	Water	12/17/19 11:40	12/18/19 10:40	

Client Sample ID: 41604-001

Date Collected: 12/17/19 11:38
Date Received: 12/18/19 10:40

Lab Sample ID: 160-36760-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/20/19 16:09	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/20/19 16:09	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			12/20/19 16:09	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			12/20/19 16:09	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			12/20/19 16:09	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			12/20/19 16:09	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			12/20/19 16:09	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			12/20/19 16:09	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			12/20/19 16:09	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			12/20/19 16:09	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			12/20/19 16:09	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			12/20/19 16:09	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			12/20/19 16:09	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			12/20/19 16:09	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			12/20/19 16:09	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			12/20/19 16:09	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			12/20/19 16:09	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			12/20/19 16:09	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			12/20/19 16:09	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			12/20/19 16:09	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			12/20/19 16:09	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			12/20/19 16:09	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			12/20/19 16:09	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			12/20/19 16:09	1
Benzene	0.50	U	0.50	0.10	ug/L			12/20/19 16:09	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			12/20/19 16:09	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			12/20/19 16:09	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			12/20/19 16:09	1
Bromoform	0.50	U	0.50	0.25	ug/L			12/20/19 16:09	1
Bromomethane	0.50	U	0.50	0.38	ug/L			12/20/19 16:09	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			12/20/19 16:09	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			12/20/19 16:09	1
Chloroethane	0.50	U	0.50	0.18	ug/L			12/20/19 16:09	1
Chloroform	**0.93**		0.50	0.24	ug/L			12/20/19 16:09	1
Chloromethane	0.50	U	0.50	0.20	ug/L			12/20/19 16:09	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/20/19 16:09	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/20/19 16:09	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			12/20/19 16:09	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			12/20/19 16:09	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			12/20/19 16:09	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			12/20/19 16:09	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			12/20/19 16:09	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			12/20/19 16:09	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			12/20/19 16:09	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/20/19 16:09	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			12/20/19 16:09	1
Naphthalene	0.67	U	0.67	0.57	ug/L			12/20/19 16:09	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			12/20/19 16:09	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			12/20/19 16:09	1

Client Sample ID: 41604-001

Lab Sample ID: 160-36760-1

Date Collected: 12/17/19 11:38

Matrix: Water

Date Received: 12/18/19 10:40

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			12/20/19 16:09	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			12/20/19 16:09	1
Styrene	0.50	U	0.50	0.21	ug/L			12/20/19 16:09	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			12/20/19 16:09	1
Tetrachloroethene	**6.3**		0.50	0.19	ug/L			12/20/19 16:09	1
Toluene	0.50	U	0.50	0.19	ug/L			12/20/19 16:09	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/20/19 16:09	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			12/20/19 16:09	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			12/20/19 16:09	1
Trichlorofluoromethane	**0.66**		0.50	0.16	ug/L			12/20/19 16:09	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/20/19 16:09	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			12/20/19 16:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*113*		*70 - 130*		*12/20/19 16:09*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*12/20/19 16:09*	*1*

Client Sample ID: 41604-002

Lab Sample ID: 160-36760-2

Date Collected: 12/17/19 11:40

Matrix: Water

Date Received: 12/18/19 10:40

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/20/19 16:31	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/20/19 16:31	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			12/20/19 16:31	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			12/20/19 16:31	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			12/20/19 16:31	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			12/20/19 16:31	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			12/20/19 16:31	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			12/20/19 16:31	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			12/20/19 16:31	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			12/20/19 16:31	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			12/20/19 16:31	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			12/20/19 16:31	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			12/20/19 16:31	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			12/20/19 16:31	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			12/20/19 16:31	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			12/20/19 16:31	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			12/20/19 16:31	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			12/20/19 16:31	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			12/20/19 16:31	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			12/20/19 16:31	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			12/20/19 16:31	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			12/20/19 16:31	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			12/20/19 16:31	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			12/20/19 16:31	1
Benzene	0.50	U	0.50	0.10	ug/L			12/20/19 16:31	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			12/20/19 16:31	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			12/20/19 16:31	1

Client Sample ID: 41604-002
Date Collected: 12/17/19 11:40
Date Received: 12/18/19 10:40

Lab Sample ID: 160-36760-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			12/20/19 16:31	1
Bromoform	0.50	U	0.50	0.25	ug/L			12/20/19 16:31	1
Bromomethane	0.50	U	0.50	0.38	ug/L			12/20/19 16:31	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			12/20/19 16:31	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			12/20/19 16:31	1
Chloroethane	0.50	U	0.50	0.18	ug/L			12/20/19 16:31	1
Chloroform	0.50	U	0.50	0.24	ug/L			12/20/19 16:31	1
Chloromethane	0.50	U	0.50	0.20	ug/L			12/20/19 16:31	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/20/19 16:31	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/20/19 16:31	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			12/20/19 16:31	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			12/20/19 16:31	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			12/20/19 16:31	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			12/20/19 16:31	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			12/20/19 16:31	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			12/20/19 16:31	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			12/20/19 16:31	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/20/19 16:31	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			12/20/19 16:31	1
Naphthalene	0.67	U	0.67	0.57	ug/L			12/20/19 16:31	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			12/20/19 16:31	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			12/20/19 16:31	1
o-Xylene	0.50	U	0.50	0.29	ug/L			12/20/19 16:31	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			12/20/19 16:31	1
Styrene	0.50	U	0.50	0.21	ug/L			12/20/19 16:31	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			12/20/19 16:31	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			12/20/19 16:31	1
Toluene	0.50	U	0.50	0.19	ug/L			12/20/19 16:31	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/20/19 16:31	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			12/20/19 16:31	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			12/20/19 16:31	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			12/20/19 16:31	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/20/19 16:31	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			12/20/19 16:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*113*		*70 - 130*		*12/20/19 16:31*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*12/20/19 16:31*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		12/23/19 14:18	12/28/19 00:58	2

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-454817/6
Matrix: Water
Analysis Batch: 454817

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/20/19 10:11	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/20/19 10:11	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			12/20/19 10:11	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			12/20/19 10:11	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			12/20/19 10:11	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			12/20/19 10:11	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			12/20/19 10:11	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			12/20/19 10:11	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			12/20/19 10:11	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			12/20/19 10:11	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			12/20/19 10:11	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			12/20/19 10:11	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			12/20/19 10:11	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			12/20/19 10:11	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			12/20/19 10:11	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			12/20/19 10:11	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			12/20/19 10:11	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			12/20/19 10:11	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			12/20/19 10:11	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			12/20/19 10:11	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			12/20/19 10:11	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			12/20/19 10:11	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			12/20/19 10:11	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			12/20/19 10:11	1
Benzene	0.50	U	0.50	0.10	ug/L			12/20/19 10:11	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			12/20/19 10:11	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			12/20/19 10:11	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			12/20/19 10:11	1
Bromoform	0.50	U	0.50	0.25	ug/L			12/20/19 10:11	1
Bromomethane	0.50	U	0.50	0.38	ug/L			12/20/19 10:11	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			12/20/19 10:11	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			12/20/19 10:11	1
Chloroethane	0.50	U	0.50	0.18	ug/L			12/20/19 10:11	1
Chloroform	0.50	U	0.50	0.24	ug/L			12/20/19 10:11	1
Chloromethane	0.50	U	0.50	0.20	ug/L			12/20/19 10:11	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/20/19 10:11	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/20/19 10:11	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			12/20/19 10:11	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			12/20/19 10:11	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			12/20/19 10:11	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			12/20/19 10:11	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			12/20/19 10:11	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			12/20/19 10:11	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			12/20/19 10:11	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/20/19 10:11	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			12/20/19 10:11	1
Naphthalene	0.67	U	0.67	0.57	ug/L			12/20/19 10:11	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			12/20/19 10:11	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-454817/6
Matrix: Water
Analysis Batch: 454817

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			12/20/19 10:11	1
o-Xylene	0.50	U	0.50	0.29	ug/L			12/20/19 10:11	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			12/20/19 10:11	1
Styrene	0.50	U	0.50	0.21	ug/L			12/20/19 10:11	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			12/20/19 10:11	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			12/20/19 10:11	1
Toluene	0.50	U	0.50	0.19	ug/L			12/20/19 10:11	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			12/20/19 10:11	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			12/20/19 10:11	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			12/20/19 10:11	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			12/20/19 10:11	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/20/19 10:11	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			12/20/19 10:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*		*12/20/19 10:11*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*12/20/19 10:11*	*1*

Lab Sample ID: LCS 160-454817/4
Matrix: Water
Analysis Batch: 454817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.6		ug/L		106	70 - 130
1,1,1-Trichloroethane	10.0	10.6		ug/L		106	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.8		ug/L		108	70 - 130
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloroethane	10.0	10.4		ug/L		104	70 - 130
1,1-Dichloroethene	10.0	10.0		ug/L		100	70 - 130
1,1-Dichloropropene	10.0	10.6		ug/L		106	70 - 130
1,2,3-Trichlorobenzene	10.0	10.1		ug/L		101	70 - 130
1,2,3-Trichloropropane	10.0	10.4		ug/L		104	70 - 130
1,2,4-Trichlorobenzene	10.0	10.8		ug/L		108	70 - 130
1,2,4-Trimethylbenzene	10.0	10.9		ug/L		109	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	13.0		ug/L		130	70 - 130
1,2-Dibromoethane	10.0	11.2		ug/L		112	70 - 130
1,2-Dichlorobenzene	10.0	11.0		ug/L		110	70 - 130
1,2-Dichloroethane	10.0	10.3		ug/L		103	70 - 130
1,2-Dichloropropane	10.0	10.3		ug/L		103	70 - 130
1,3,5-Trimethylbenzene	10.0	11.0		ug/L		110	70 - 130
1,3-Dichlorobenzene	10.0	10.6		ug/L		106	70 - 130
1,3-Dichloropropane	10.0	10.5		ug/L		105	70 - 130
1,4-Dichlorobenzene	10.0	10.7		ug/L		107	70 - 130
2,2-Dichloropropane	10.0	10.4		ug/L		104	70 - 130
2-Chlorotoluene	10.0	10.8		ug/L		108	70 - 130
4-Chlorotoluene	10.0	11.1		ug/L		111	70 - 130
4-Isopropyltoluene	10.0	11.1		ug/L		111	70 - 130
Benzene	10.0	10.3		ug/L		103	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-454817/4
Matrix: Water
Analysis Batch: 454817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.6		ug/L		106	70 - 130
Bromochloromethane	10.0	10.4		ug/L		104	70 - 130
Bromodichloromethane	10.0	10.6		ug/L		106	70 - 130
Bromoform	10.0	10.2		ug/L		102	70 - 130
Bromomethane	10.0	10.4		ug/L		104	70 - 130
Carbon tetrachloride	10.0	11.0		ug/L		110	70 - 130
Chlorobenzene	10.0	10.4		ug/L		104	70 - 130
Chloroethane	10.0	10.0		ug/L		100	70 - 130
Chloroform	10.0	10.4		ug/L		104	70 - 130
Chloromethane	10.0	9.02		ug/L		90	70 - 130
cis-1,2-Dichloroethene	10.0	10.9		ug/L		109	70 - 130
cis-1,3-Dichloropropene	10.0	10.5		ug/L		105	70 - 130
Dibromochloromethane	10.0	10.8		ug/L		108	70 - 130
Dibromomethane	10.0	10.6		ug/L		106	70 - 130
Dichlorodifluoromethane	10.0	8.16		ug/L		82	70 - 130
Ethylbenzene	10.0	11.0		ug/L		110	70 - 130
Hexachlorobutadiene	10.0	10.4		ug/L		104	70 - 130
Isopropylbenzene	10.0	10.6		ug/L		106	70 - 130
Methylene Chloride	10.0	10.3		ug/L		103	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.8		ug/L		108	70 - 130
m-Xylene & p-Xylene	10.0	10.7		ug/L		107	70 - 130
Naphthalene	10.0	10.5		ug/L		105	70 - 130
n-Butylbenzene	10.0	13.4		ug/L		134	70 - 130
N-Propylbenzene	10.0	11.0		ug/L		110	70 - 130
o-Xylene	10.0	10.5		ug/L		105	70 - 130
sec-Butylbenzene	10.0	11.0		ug/L		110	70 - 130
Styrene	10.0	10.5		ug/L		105	70 - 130
tert-Butylbenzene	10.0	11.0		ug/L		110	70 - 130
Tetrachloroethene	10.0	10.2		ug/L		102	70 - 130
Toluene	10.0	10.6		ug/L		106	70 - 130
trans-1,2-Dichloroethene	10.0	10.5		ug/L		105	70 - 130
trans-1,3-Dichloropropene	10.0	11.3		ug/L		113	70 - 130
Trichloroethene	10.0	10.1		ug/L		101	70 - 130
Trichlorofluoromethane	10.0	10.5		ug/L		105	70 - 130
Vinyl chloride	10.0	9.46		ug/L		95	70 - 130
Xylenes, Total	20.0	21.2		ug/L		106	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-454954/1-A
Matrix: Water
Analysis Batch: 455604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 454954

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		12/23/19 14:18	12/28/19 00:45	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-454954/2-A
Matrix: Water
Analysis Batch: 455604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 454954

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	199		ug/L		100	80 - 120		

Lab Sample ID: 160-36760-2 MS
Matrix: Water
Analysis Batch: 455604

Client Sample ID: 41604-002
Prep Type: Total/NA
Prep Batch: 454954

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	200		ug/L		100	75 - 125		

Lab Sample ID: 160-36760-2 MSD
Matrix: Water
Analysis Batch: 455604

Client Sample ID: 41604-002
Prep Type: Total/NA
Prep Batch: 454954

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	198		ug/L		99	75 - 125	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36760-1
SDG: 41604

GC/MS VOA

Analysis Batch: 454817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36760-1	41604-001	Total/NA	Water	524.2	
160-36760-2	41604-002	Total/NA	Water	524.2	
MB 160-454817/6	Method Blank	Total/NA	Water	524.2	
LCS 160-454817/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 454954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36760-2	41604-002	Total/NA	Water	3010A	
MB 160-454954/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-454954/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-36760-2 MS	41604-002	Total/NA	Water	3010A	
160-36760-2 MSD	41604-002	Total/NA	Water	3010A	

Analysis Batch: 455604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36760-2	41604-002	Total/NA	Water	6020A	454954
MB 160-454954/1-A	Method Blank	Total/NA	Water	6020A	454954
LCS 160-454954/2-A	Lab Control Sample	Total/NA	Water	6020A	454954
160-36760-2 MS	41604-002	Total/NA	Water	6020A	454954
160-36760-2 MSD	41604-002	Total/NA	Water	6020A	454954

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-36760-1
SDG: 41604

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCZ (70-130)	BFB (70-130)
160-36760-1	41604-001	113	101
160-36760-2	41604-002	113	99
LCS 160-454817/4	Lab Control Sample	105	104
MB 160-454817/6	Method Blank	110	100

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-36895-1
Laboratory Sample Delivery Group: 41622
Client Project/Site: OU3 B9641622

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
1/13/2020 12:19:50 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-36895-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B9641622

Report Number: 160-36895-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 01/06/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.0 C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41622-001 (160-36895-1), 41622-002 (160-36895-2), 41622-004 (160-36895-3), 41622-005 (160-36895-4) and 41622-006 (160-36895-5) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on

Job ID: 160-36895-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

01/07/2020.

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 41622-002 (160-36895-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 01/07/2020 and analyzed on 01/08/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-36895 Chain of Custody

Requires EDD Y

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41622

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Miller	Phone: 314-298-8566
2		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD use TB-1 for coc# 41623

Type UID	Smp	Coll	Sample Information Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium	
001	E	G	095-151	0	1/2/20	1100	W	RTW-1 Influent	40 ML	SC	3	HCL					X						
002	E	G	095-152	0		1105	W	RTW-1 Effluent	40 ML	SC	3	HCL					X						
002	E	G	095-152	0		1105	W	RTW-1 Effluent	250 ML	p	1	Hno3										X	
~~003~~	~~E~~	~~G~~	~~095-153~~	~~0~~			W	~~RTW-2 Influent~~	~~40 ML~~	~~SC~~	~~3~~	~~HCL~~					~~X~~						
004	E	G	095-155	0		1120	W	RTW-3 Influent	40 ML	SC	3	HCL					X						
005	E	G	095-157	0		1130	W	RTW-4 Influent	40 ML	SC	3	HCL					X						
006	E	G	TB-1	0	1/2/20	0900	W	Trip Blank	40 ML	SC	3	HCL					X						

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Miller 1/2/20	Print	Print
Signature 1500	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print GERROD McKINNEY 010620	Print	Print
Signature 0715	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☐ Archive For ____ Months
- Y Disposal by Lab

Data Package: ☐ Full Y Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☐ 7 Days
- A 14 Days
- ☐ Other ( )
- ☐ 30 Days

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-36895-1
SDG Number: 41622

Login Number: 36895
List Number: 1
Creator: McKinney, Gerrod E

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B9641622

Job ID: 160-36895-1
SDG: 41622

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B9641622

Job ID: 160-36895-1
SDG: 41622

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B9641622

Job ID: 160-36895-1
SDG: 41622

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-36895-1	41622-001	Water	01/02/20 11:00	01/06/20 09:15	
160-36895-2	41622-002	Water	01/02/20 11:05	01/06/20 09:15	
160-36895-3	41622-004	Water	01/02/20 11:20	01/06/20 09:15	
160-36895-4	41622-005	Water	01/02/20 11:30	01/06/20 09:15	
160-36895-5	41622-006	Water	01/02/20 09:00	01/06/20 09:15	

Client: Brookhaven National Labs
Project/Site: OU3 B9641622

Job ID: 160-36895-1
SDG: 41622

Client Sample ID: 41622-001
Date Collected: 01/02/20 11:00
Date Received: 01/06/20 09:15

Lab Sample ID: 160-36895-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/07/20 12:45	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/07/20 12:45	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			01/07/20 12:45	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			01/07/20 12:45	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			01/07/20 12:45	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			01/07/20 12:45	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			01/07/20 12:45	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			01/07/20 12:45	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			01/07/20 12:45	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			01/07/20 12:45	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			01/07/20 12:45	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			01/07/20 12:45	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			01/07/20 12:45	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			01/07/20 12:45	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			01/07/20 12:45	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			01/07/20 12:45	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			01/07/20 12:45	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			01/07/20 12:45	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			01/07/20 12:45	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			01/07/20 12:45	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			01/07/20 12:45	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			01/07/20 12:45	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			01/07/20 12:45	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			01/07/20 12:45	1
Benzene	0.50	U	0.50	0.10	ug/L			01/07/20 12:45	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			01/07/20 12:45	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 12:45	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 12:45	1
Bromoform	0.50	U	0.50	0.25	ug/L			01/07/20 12:45	1
Bromomethane	0.50	U	0.50	0.38	ug/L			01/07/20 12:45	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			01/07/20 12:45	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			01/07/20 12:45	1
Chloroethane	0.50	U	0.50	0.18	ug/L			01/07/20 12:45	1
Chloroform	**0.67**		0.50	0.24	ug/L			01/07/20 12:45	1
Chloromethane	0.50	U	0.50	0.20	ug/L			01/07/20 12:45	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/07/20 12:45	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/07/20 12:45	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 12:45	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			01/07/20 12:45	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			01/07/20 12:45	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			01/07/20 12:45	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			01/07/20 12:45	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			01/07/20 12:45	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			01/07/20 12:45	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/07/20 12:45	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			01/07/20 12:45	1
Naphthalene	0.67	U	0.67	0.57	ug/L			01/07/20 12:45	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			01/07/20 12:45	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			01/07/20 12:45	1

Client Sample ID: 41622-001

Date Collected: 01/02/20 11:00
Date Received: 01/06/20 09:15

Lab Sample ID: 160-36895-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			01/07/20 12:45	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			01/07/20 12:45	1
Styrene	0.50	U	0.50	0.21	ug/L			01/07/20 12:45	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			01/07/20 12:45	1
Tetrachloroethene	**6.7**		0.50	0.19	ug/L			01/07/20 12:45	1
Toluene	0.50	U	0.50	0.19	ug/L			01/07/20 12:45	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/07/20 12:45	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			01/07/20 12:45	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			01/07/20 12:45	1
Trichlorofluoromethane	**0.63**		0.50	0.16	ug/L			01/07/20 12:45	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			01/07/20 12:45	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			01/07/20 12:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*96*		*70 - 130*		*01/07/20 12:45*	*1*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*		*01/07/20 12:45*	*1*

Client Sample ID: 41622-002

Date Collected: 01/02/20 11:05
Date Received: 01/06/20 09:15

Lab Sample ID: 160-36895-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/07/20 13:07	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/07/20 13:07	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			01/07/20 13:07	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			01/07/20 13:07	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			01/07/20 13:07	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			01/07/20 13:07	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			01/07/20 13:07	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			01/07/20 13:07	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			01/07/20 13:07	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			01/07/20 13:07	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			01/07/20 13:07	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			01/07/20 13:07	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			01/07/20 13:07	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			01/07/20 13:07	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			01/07/20 13:07	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			01/07/20 13:07	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			01/07/20 13:07	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			01/07/20 13:07	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			01/07/20 13:07	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			01/07/20 13:07	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			01/07/20 13:07	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			01/07/20 13:07	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			01/07/20 13:07	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			01/07/20 13:07	1
Benzene	0.50	U	0.50	0.10	ug/L			01/07/20 13:07	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			01/07/20 13:07	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 13:07	1

Client Sample ID: 41622-002

Date Collected: 01/02/20 11:05
Date Received: 01/06/20 09:15

Lab Sample ID: 160-36895-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 13:07	1
Bromoform	0.50	U	0.50	0.25	ug/L			01/07/20 13:07	1
Bromomethane	0.50	U	0.50	0.38	ug/L			01/07/20 13:07	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			01/07/20 13:07	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			01/07/20 13:07	1
Chloroethane	0.50	U	0.50	0.18	ug/L			01/07/20 13:07	1
Chloroform	0.50	U	0.50	0.24	ug/L			01/07/20 13:07	1
Chloromethane	0.50	U	0.50	0.20	ug/L			01/07/20 13:07	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/07/20 13:07	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/07/20 13:07	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 13:07	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			01/07/20 13:07	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			01/07/20 13:07	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			01/07/20 13:07	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			01/07/20 13:07	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			01/07/20 13:07	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			01/07/20 13:07	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/07/20 13:07	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			01/07/20 13:07	1
Naphthalene	0.67	U	0.67	0.57	ug/L			01/07/20 13:07	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			01/07/20 13:07	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			01/07/20 13:07	1
o-Xylene	0.50	U	0.50	0.29	ug/L			01/07/20 13:07	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			01/07/20 13:07	1
Styrene	0.50	U	0.50	0.21	ug/L			01/07/20 13:07	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			01/07/20 13:07	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			01/07/20 13:07	1
Toluene	0.50	U	0.50	0.19	ug/L			01/07/20 13:07	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/07/20 13:07	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			01/07/20 13:07	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			01/07/20 13:07	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			01/07/20 13:07	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			01/07/20 13:07	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			01/07/20 13:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*		*01/07/20 13:07*	*1*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*		*01/07/20 13:07*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		01/07/20 11:32	01/08/20 18:42	2

Client Sample ID: 41622-004

Date Collected: 01/02/20 11:20
Date Received: 01/06/20 09:15

Lab Sample ID: 160-36895-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/07/20 13:30	1

Client: Brookhaven National Labs
Project/Site: OU3 B9641622

Job ID: 160-36895-1
SDG: 41622

Client Sample ID: 41622-004
Date Collected: 01/02/20 11:20
Date Received: 01/06/20 09:15

Lab Sample ID: 160-36895-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/07/20 13:30	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			01/07/20 13:30	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			01/07/20 13:30	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			01/07/20 13:30	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			01/07/20 13:30	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			01/07/20 13:30	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			01/07/20 13:30	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			01/07/20 13:30	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			01/07/20 13:30	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			01/07/20 13:30	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			01/07/20 13:30	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			01/07/20 13:30	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			01/07/20 13:30	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			01/07/20 13:30	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			01/07/20 13:30	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			01/07/20 13:30	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			01/07/20 13:30	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			01/07/20 13:30	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			01/07/20 13:30	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			01/07/20 13:30	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			01/07/20 13:30	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			01/07/20 13:30	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			01/07/20 13:30	1
Benzene	0.50	U	0.50	0.10	ug/L			01/07/20 13:30	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			01/07/20 13:30	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 13:30	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 13:30	1
Bromoform	0.50	U	0.50	0.25	ug/L			01/07/20 13:30	1
Bromomethane	0.50	U	0.50	0.38	ug/L			01/07/20 13:30	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			01/07/20 13:30	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			01/07/20 13:30	1
Chloroethane	0.50	U	0.50	0.18	ug/L			01/07/20 13:30	1
Chloroform	**1.3**		0.50	0.24	ug/L			01/07/20 13:30	1
Chloromethane	**0.36**	**J**	0.50	0.20	ug/L			01/07/20 13:30	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/07/20 13:30	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/07/20 13:30	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 13:30	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			01/07/20 13:30	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			01/07/20 13:30	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			01/07/20 13:30	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			01/07/20 13:30	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			01/07/20 13:30	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			01/07/20 13:30	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/07/20 13:30	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			01/07/20 13:30	1
Naphthalene	0.67	U	0.67	0.57	ug/L			01/07/20 13:30	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			01/07/20 13:30	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			01/07/20 13:30	1
o-Xylene	0.50	U	0.50	0.29	ug/L			01/07/20 13:30	1

Client Sample ID: 41622-004

Date Collected: 01/02/20 11:20
Date Received: 01/06/20 09:15

Lab Sample ID: 160-36895-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			01/07/20 13:30	1
Styrene	0.50	U	0.50	0.21	ug/L			01/07/20 13:30	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			01/07/20 13:30	1
Tetrachloroethene	**0.54**		0.50	0.19	ug/L			01/07/20 13:30	1
Toluene	0.50	U	0.50	0.19	ug/L			01/07/20 13:30	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/07/20 13:30	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			01/07/20 13:30	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			01/07/20 13:30	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			01/07/20 13:30	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			01/07/20 13:30	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			01/07/20 13:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*		*01/07/20 13:30*	*1*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*01/07/20 13:30*	*1*

Client Sample ID: 41622-005

Date Collected: 01/02/20 11:30
Date Received: 01/06/20 09:15

Lab Sample ID: 160-36895-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/07/20 13:52	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/07/20 13:52	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			01/07/20 13:52	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			01/07/20 13:52	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			01/07/20 13:52	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			01/07/20 13:52	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			01/07/20 13:52	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			01/07/20 13:52	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			01/07/20 13:52	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			01/07/20 13:52	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			01/07/20 13:52	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			01/07/20 13:52	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			01/07/20 13:52	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			01/07/20 13:52	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			01/07/20 13:52	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			01/07/20 13:52	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			01/07/20 13:52	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			01/07/20 13:52	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			01/07/20 13:52	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			01/07/20 13:52	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			01/07/20 13:52	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			01/07/20 13:52	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			01/07/20 13:52	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			01/07/20 13:52	1
Benzene	0.50	U	0.50	0.10	ug/L			01/07/20 13:52	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			01/07/20 13:52	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 13:52	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 13:52	1

Client: Brookhaven National Labs
Project/Site: OU3 B9641622

Job ID: 160-36895-1
SDG: 41622

Client Sample ID: 41622-005
Date Collected: 01/02/20 11:30
Date Received: 01/06/20 09:15

Lab Sample ID: 160-36895-4
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.25	ug/L			01/07/20 13:52	1
Bromomethane	0.50	U	0.50	0.38	ug/L			01/07/20 13:52	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			01/07/20 13:52	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			01/07/20 13:52	1
Chloroethane	0.50	U	0.50	0.18	ug/L			01/07/20 13:52	1
Chloroform	**0.57**		0.50	0.24	ug/L			01/07/20 13:52	1
Chloromethane	0.50	U	0.50	0.20	ug/L			01/07/20 13:52	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/07/20 13:52	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/07/20 13:52	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 13:52	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			01/07/20 13:52	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			01/07/20 13:52	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			01/07/20 13:52	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			01/07/20 13:52	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			01/07/20 13:52	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			01/07/20 13:52	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/07/20 13:52	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			01/07/20 13:52	1
Naphthalene	0.67	U	0.67	0.57	ug/L			01/07/20 13:52	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			01/07/20 13:52	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			01/07/20 13:52	1
o-Xylene	0.50	U	0.50	0.29	ug/L			01/07/20 13:52	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			01/07/20 13:52	1
Styrene	0.50	U	0.50	0.21	ug/L			01/07/20 13:52	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			01/07/20 13:52	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			01/07/20 13:52	1
Toluene	0.50	U	0.50	0.19	ug/L			01/07/20 13:52	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/07/20 13:52	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			01/07/20 13:52	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			01/07/20 13:52	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			01/07/20 13:52	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			01/07/20 13:52	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			01/07/20 13:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*		*01/07/20 13:52*	*1*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*01/07/20 13:52*	*1*

Client Sample ID: 41622-006
Date Collected: 01/02/20 09:00
Date Received: 01/06/20 09:15

Lab Sample ID: 160-36895-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/07/20 11:37	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/07/20 11:37	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			01/07/20 11:37	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			01/07/20 11:37	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			01/07/20 11:37	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			01/07/20 11:37	1

Client: Brookhaven National Labs
Project/Site: OU3 B9641622

Job ID: 160-36895-1
SDG: 41622

Client Sample ID: 41622-006
Date Collected: 01/02/20 09:00
Date Received: 01/06/20 09:15

Lab Sample ID: 160-36895-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			01/07/20 11:37	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			01/07/20 11:37	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			01/07/20 11:37	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			01/07/20 11:37	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			01/07/20 11:37	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			01/07/20 11:37	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			01/07/20 11:37	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			01/07/20 11:37	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			01/07/20 11:37	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			01/07/20 11:37	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			01/07/20 11:37	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			01/07/20 11:37	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			01/07/20 11:37	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			01/07/20 11:37	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			01/07/20 11:37	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			01/07/20 11:37	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			01/07/20 11:37	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			01/07/20 11:37	1
Benzene	0.50	U	0.50	0.10	ug/L			01/07/20 11:37	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			01/07/20 11:37	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 11:37	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 11:37	1
Bromoform	0.50	U	0.50	0.25	ug/L			01/07/20 11:37	1
Bromomethane	0.50	U	0.50	0.38	ug/L			01/07/20 11:37	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			01/07/20 11:37	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			01/07/20 11:37	1
Chloroethane	0.50	U	0.50	0.18	ug/L			01/07/20 11:37	1
Chloroform	**6.5**		0.50	0.24	ug/L			01/07/20 11:37	1
Chloromethane	0.50	U	0.50	0.20	ug/L			01/07/20 11:37	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/07/20 11:37	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/07/20 11:37	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 11:37	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			01/07/20 11:37	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			01/07/20 11:37	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			01/07/20 11:37	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			01/07/20 11:37	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			01/07/20 11:37	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			01/07/20 11:37	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/07/20 11:37	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			01/07/20 11:37	1
Naphthalene	0.67	U	0.67	0.57	ug/L			01/07/20 11:37	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			01/07/20 11:37	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			01/07/20 11:37	1
o-Xylene	0.50	U	0.50	0.29	ug/L			01/07/20 11:37	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			01/07/20 11:37	1
Styrene	0.50	U	0.50	0.21	ug/L			01/07/20 11:37	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			01/07/20 11:37	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			01/07/20 11:37	1
Toluene	0.50	U	0.50	0.19	ug/L			01/07/20 11:37	1

Client: Brookhaven National Labs
Project/Site: OU3 B9641622

Job ID: 160-36895-1
SDG: 41622

Client Sample ID: 41622-006
Date Collected: 01/02/20 09:00
Date Received: 01/06/20 09:15

Lab Sample ID: 160-36895-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/07/20 11:37	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			01/07/20 11:37	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			01/07/20 11:37	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			01/07/20 11:37	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			01/07/20 11:37	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			01/07/20 11:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*		*01/07/20 11:37*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*01/07/20 11:37*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-456028/6
Matrix: Water
Analysis Batch: 456028

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/07/20 10:52	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/07/20 10:52	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			01/07/20 10:52	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			01/07/20 10:52	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			01/07/20 10:52	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			01/07/20 10:52	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			01/07/20 10:52	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			01/07/20 10:52	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			01/07/20 10:52	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			01/07/20 10:52	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			01/07/20 10:52	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			01/07/20 10:52	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			01/07/20 10:52	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			01/07/20 10:52	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			01/07/20 10:52	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			01/07/20 10:52	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			01/07/20 10:52	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			01/07/20 10:52	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			01/07/20 10:52	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			01/07/20 10:52	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			01/07/20 10:52	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			01/07/20 10:52	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			01/07/20 10:52	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			01/07/20 10:52	1
Benzene	0.50	U	0.50	0.10	ug/L			01/07/20 10:52	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			01/07/20 10:52	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 10:52	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 10:52	1
Bromoform	0.50	U	0.50	0.25	ug/L			01/07/20 10:52	1
Bromomethane	0.50	U	0.50	0.38	ug/L			01/07/20 10:52	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			01/07/20 10:52	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			01/07/20 10:52	1
Chloroethane	0.50	U	0.50	0.18	ug/L			01/07/20 10:52	1
Chloroform	0.50	U	0.50	0.24	ug/L			01/07/20 10:52	1
Chloromethane	0.50	U	0.50	0.20	ug/L			01/07/20 10:52	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/07/20 10:52	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/07/20 10:52	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			01/07/20 10:52	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			01/07/20 10:52	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			01/07/20 10:52	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			01/07/20 10:52	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			01/07/20 10:52	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			01/07/20 10:52	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			01/07/20 10:52	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/07/20 10:52	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			01/07/20 10:52	1
Naphthalene	0.67	U	0.67	0.57	ug/L			01/07/20 10:52	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			01/07/20 10:52	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-456028/6
Matrix: Water
Analysis Batch: 456028

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			01/07/20 10:52	1
o-Xylene	0.50	U	0.50	0.29	ug/L			01/07/20 10:52	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			01/07/20 10:52	1
Styrene	0.50	U	0.50	0.21	ug/L			01/07/20 10:52	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			01/07/20 10:52	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			01/07/20 10:52	1
Toluene	0.50	U	0.50	0.19	ug/L			01/07/20 10:52	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/07/20 10:52	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			01/07/20 10:52	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			01/07/20 10:52	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			01/07/20 10:52	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			01/07/20 10:52	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			01/07/20 10:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*96*		*70 - 130*		*01/07/20 10:52*	*1*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*		*01/07/20 10:52*	*1*

Lab Sample ID: LCS 160-456028/4
Matrix: Water
Analysis Batch: 456028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.0		ug/L		100	70 - 130
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.5		ug/L		105	70 - 130
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1-Dichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1-Dichloroethene	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloropropene	10.0	10.5		ug/L		105	70 - 130
1,2,3-Trichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,2,3-Trichloropropane	10.0	10.1		ug/L		101	70 - 130
1,2,4-Trichlorobenzene	10.0	9.98		ug/L		100	70 - 130
1,2,4-Trimethylbenzene	10.0	9.97		ug/L		100	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	8.84		ug/L		88	70 - 130
1,2-Dibromoethane	10.0	9.96		ug/L		100	70 - 130
1,2-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,2-Dichloroethane	10.0	10.2		ug/L		102	70 - 130
1,2-Dichloropropane	10.0	10.1		ug/L		101	70 - 130
1,3,5-Trimethylbenzene	10.0	10.2		ug/L		102	70 - 130
1,3-Dichlorobenzene	10.0	10.0		ug/L		100	70 - 130
1,3-Dichloropropane	10.0	10.0		ug/L		100	70 - 130
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
2,2-Dichloropropane	10.0	10.2		ug/L		102	70 - 130
2-Chlorotoluene	10.0	10.7		ug/L		107	70 - 130
4-Chlorotoluene	10.0	9.92		ug/L		99	70 - 130
4-Isopropyltoluene	10.0	10.2		ug/L		102	70 - 130
Benzene	10.0	10.5		ug/L		105	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-456028/4
Matrix: Water
Analysis Batch: 456028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.2		ug/L		102	70 - 130
Bromochloromethane	10.0	10.6		ug/L		106	70 - 130
Bromodichloromethane	10.0	10.2		ug/L		102	70 - 130
Bromoform	10.0	10.4		ug/L		104	70 - 130
Bromomethane	10.0	11.7		ug/L		117	70 - 130
Carbon tetrachloride	10.0	10.1		ug/L		101	70 - 130
Chlorobenzene	10.0	10.3		ug/L		103	70 - 130
Chloroethane	10.0	10.5		ug/L		105	70 - 130
Chloroform	10.0	10.5		ug/L		105	70 - 130
Chloromethane	10.0	9.48		ug/L		95	70 - 130
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	70 - 130
cis-1,3-Dichloropropene	10.0	10.4		ug/L		104	70 - 130
Dibromochloromethane	10.0	10.2		ug/L		102	70 - 130
Dibromomethane	10.0	10.3		ug/L		103	70 - 130
Dichlorodifluoromethane	10.0	8.73		ug/L		87	70 - 130
Ethylbenzene	10.0	10.3		ug/L		103	70 - 130
Hexachlorobutadiene	10.0	9.91		ug/L		99	70 - 130
Isopropylbenzene	10.0	10.2		ug/L		102	70 - 130
Methylene Chloride	10.0	10.5		ug/L		105	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.4		ug/L		104	70 - 130
m-Xylene & p-Xylene	10.0	10.0		ug/L		100	70 - 130
Naphthalene	10.0	9.71		ug/L		97	70 - 130
n-Butylbenzene	10.0	8.30		ug/L		83	70 - 130
N-Propylbenzene	10.0	10.3		ug/L		103	70 - 130
o-Xylene	10.0	10.2		ug/L		102	70 - 130
sec-Butylbenzene	10.0	10.3		ug/L		103	70 - 130
Styrene	10.0	10.0		ug/L		100	70 - 130
tert-Butylbenzene	10.0	10.0		ug/L		100	70 - 130
Tetrachloroethene	10.0	10.0		ug/L		100	70 - 130
Toluene	10.0	10.2		ug/L		102	70 - 130
trans-1,2-Dichloroethene	10.0	10.4		ug/L		104	70 - 130
trans-1,3-Dichloropropene	10.0	10.3		ug/L		103	70 - 130
Trichloroethene	10.0	10.5		ug/L		105	70 - 130
Trichlorofluoromethane	10.0	11.0		ug/L		110	70 - 130
Vinyl chloride	10.0	10.2		ug/L		102	70 - 130
Xylenes, Total	20.0	20.2		ug/L		101	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*95*		*70 - 130*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-456041/1-A
Matrix: Water
Analysis Batch: 456274

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 456041

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		01/07/20 11:32	01/08/20 18:33	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-456041/2-A
Matrix: Water
Analysis Batch: 456274

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 456041

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	213		ug/L		107	80 - 120		

Lab Sample ID: 160-36895-2 MS
Matrix: Water
Analysis Batch: 456274

Client Sample ID: 41622-002
Prep Type: Total/NA
Prep Batch: 456041

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	213		ug/L		106	75 - 125		

Lab Sample ID: 160-36895-2 MSD
Matrix: Water
Analysis Batch: 456274

Client Sample ID: 41622-002
Prep Type: Total/NA
Prep Batch: 456041

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	211		ug/L		106	75 - 125	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B9641622

Job ID: 160-36895-1
SDG: 41622

GC/MS VOA

Analysis Batch: 456028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36895-1	41622-001	Total/NA	Water	524.2	
160-36895-2	41622-002	Total/NA	Water	524.2	
160-36895-3	41622-004	Total/NA	Water	524.2	
160-36895-4	41622-005	Total/NA	Water	524.2	
160-36895-5	41622-006	Total/NA	Water	524.2	
MB 160-456028/6	Method Blank	Total/NA	Water	524.2	
LCS 160-456028/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 456041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36895-2	41622-002	Total/NA	Water	3010A	
MB 160-456041/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-456041/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-36895-2 MS	41622-002	Total/NA	Water	3010A	
160-36895-2 MSD	41622-002	Total/NA	Water	3010A	

Analysis Batch: 456274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-36895-2	41622-002	Total/NA	Water	6020A	456041
MB 160-456041/1-A	Method Blank	Total/NA	Water	6020A	456041
LCS 160-456041/2-A	Lab Control Sample	Total/NA	Water	6020A	456041
160-36895-2 MS	41622-002	Total/NA	Water	6020A	456041
160-36895-2 MSD	41622-002	Total/NA	Water	6020A	456041

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B9641622

Job ID: 160-36895-1
SDG: 41622

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		DCZ	BFB								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-36895-1	41622-001	96	91								
160-36895-2	41622-002	98	91								
160-36895-3	41622-004	98	90								
160-36895-4	41622-005	98	90								
160-36895-5	41622-006	98	92								
LCS 160-456028/4	Lab Control Sample	95	91								
MB 160-456028/6	Method Blank	96	88								

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-37004-1
Laboratory Sample Delivery Group: 41656
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
1/24/2020 4:59:34 PM

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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-37004-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-37004-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 1/16/2020 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41656-001 (160-37004-1), 41656-002 (160-37004-2) and 41656-003 (160-37004-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 01/17/2020 and 01/22/2020.

Job ID: 160-37004-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch160-457554:
The laboratory control sample (LCS) recovered outside of upper control limit for the following analyte: 1,2,3-Trichlorobenzene. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data was reported.

The MS/MSD recovered outside of upper control limit for 1,2,3-Trichlorobenzene. The analyte was not detected in the affected samples.

The MS and/or the MSD recovered outside of lower control limits for the following analytes: 2,2-Dichloropropane and Dichlorodifluoromethane. The analytes recovered within control limits in the LCS; therefore, the data was reported: 41656-002 (160-37004-2), 41656-003 (160-37004-3), (160-37002-A-6), (160-37002-A-6 MS), and (160-37002-A-6 MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 41656-002 (160-37004-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 01/20/2020 and analyzed on 01/22/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41656

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: [signature]	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	1/14/20	1410	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1412	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1412	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X					

160-37004 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Munn 1/15/20	Print	Print
Signature 1400	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Nicholas Press 1-16-20	Print	Print
Signature [signature] 0910	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☑ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☑ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-37004-1
SDG Number: 41656

Login Number: 37004
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37004-1
SDG: 41656

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37004-1
SDG: 41656

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37004-1
SDG: 41656

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-37004-1	41656-001	Water	01/14/20 14:10	01/16/20 09:10	
160-37004-2	41656-002	Water	01/14/20 14:12	01/16/20 09:10	
160-37004-3	41656-003	Water	01/14/20 09:00	01/16/20 09:10	

Client Sample ID: 41656-001

Date Collected: 01/14/20 14:10
Date Received: 01/16/20 09:10

Lab Sample ID: 160-37004-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/17/20 14:11	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/17/20 14:11	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			01/17/20 14:11	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			01/17/20 14:11	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			01/17/20 14:11	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			01/17/20 14:11	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			01/17/20 14:11	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			01/17/20 14:11	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			01/17/20 14:11	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			01/17/20 14:11	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			01/17/20 14:11	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			01/17/20 14:11	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			01/17/20 14:11	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			01/17/20 14:11	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			01/17/20 14:11	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			01/17/20 14:11	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			01/17/20 14:11	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			01/17/20 14:11	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			01/17/20 14:11	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			01/17/20 14:11	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			01/17/20 14:11	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			01/17/20 14:11	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			01/17/20 14:11	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			01/17/20 14:11	1
Benzene	0.50	U	0.50	0.10	ug/L			01/17/20 14:11	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			01/17/20 14:11	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			01/17/20 14:11	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			01/17/20 14:11	1
Bromoform	0.50	U	0.50	0.25	ug/L			01/17/20 14:11	1
Bromomethane	0.50	U	0.50	0.38	ug/L			01/17/20 14:11	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			01/17/20 14:11	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			01/17/20 14:11	1
Chloroethane	0.50	U	0.50	0.18	ug/L			01/17/20 14:11	1
Chloroform	**0.64**		0.50	0.24	ug/L			01/17/20 14:11	1
Chloromethane	0.50	U	0.50	0.20	ug/L			01/17/20 14:11	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/17/20 14:11	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/17/20 14:11	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			01/17/20 14:11	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			01/17/20 14:11	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			01/17/20 14:11	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			01/17/20 14:11	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			01/17/20 14:11	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			01/17/20 14:11	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			01/17/20 14:11	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/17/20 14:11	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			01/17/20 14:11	1
Naphthalene	0.67	U	0.67	0.57	ug/L			01/17/20 14:11	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			01/17/20 14:11	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			01/17/20 14:11	1

Client Sample ID: 41656-001

Lab Sample ID: 160-37004-1

Date Collected: 01/14/20 14:10

Matrix: Water

Date Received: 01/16/20 09:10

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			01/17/20 14:11	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			01/17/20 14:11	1
Styrene	0.50	U	0.50	0.21	ug/L			01/17/20 14:11	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			01/17/20 14:11	1
Tetrachloroethene	**6.2**		0.50	0.19	ug/L			01/17/20 14:11	1
Toluene	0.50	U	0.50	0.19	ug/L			01/17/20 14:11	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/17/20 14:11	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			01/17/20 14:11	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			01/17/20 14:11	1
Trichlorofluoromethane	**0.55**		0.50	0.16	ug/L			01/17/20 14:11	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			01/17/20 14:11	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			01/17/20 14:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*		*01/17/20 14:11*	*1*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*01/17/20 14:11*	*1*

Client Sample ID: 41656-002

Lab Sample ID: 160-37004-2

Date Collected: 01/14/20 14:12

Matrix: Water

Date Received: 01/16/20 09:10

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/22/20 14:56	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/22/20 14:56	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			01/22/20 14:56	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			01/22/20 14:56	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			01/22/20 14:56	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			01/22/20 14:56	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			01/22/20 14:56	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			01/22/20 14:56	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			01/22/20 14:56	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			01/22/20 14:56	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			01/22/20 14:56	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			01/22/20 14:56	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			01/22/20 14:56	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			01/22/20 14:56	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			01/22/20 14:56	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			01/22/20 14:56	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			01/22/20 14:56	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			01/22/20 14:56	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			01/22/20 14:56	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			01/22/20 14:56	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			01/22/20 14:56	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			01/22/20 14:56	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			01/22/20 14:56	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			01/22/20 14:56	1
Benzene	0.50	U	0.50	0.10	ug/L			01/22/20 14:56	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			01/22/20 14:56	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			01/22/20 14:56	1

Client Sample ID: 41656-002

Date Collected: 01/14/20 14:12
Date Received: 01/16/20 09:10

Lab Sample ID: 160-37004-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			01/22/20 14:56	1
Bromoform	0.50	U	0.50	0.25	ug/L			01/22/20 14:56	1
Bromomethane	0.50	U	0.50	0.38	ug/L			01/22/20 14:56	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			01/22/20 14:56	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			01/22/20 14:56	1
Chloroethane	0.50	U	0.50	0.18	ug/L			01/22/20 14:56	1
Chloroform	0.50	U	0.50	0.24	ug/L			01/22/20 14:56	1
Chloromethane	0.50	U	0.50	0.20	ug/L			01/22/20 14:56	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/22/20 14:56	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/22/20 14:56	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			01/22/20 14:56	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			01/22/20 14:56	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			01/22/20 14:56	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			01/22/20 14:56	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			01/22/20 14:56	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			01/22/20 14:56	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			01/22/20 14:56	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/22/20 14:56	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			01/22/20 14:56	1
Naphthalene	0.67	U	0.67	0.57	ug/L			01/22/20 14:56	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			01/22/20 14:56	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			01/22/20 14:56	1
o-Xylene	0.50	U	0.50	0.29	ug/L			01/22/20 14:56	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			01/22/20 14:56	1
Styrene	0.50	U	0.50	0.21	ug/L			01/22/20 14:56	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			01/22/20 14:56	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			01/22/20 14:56	1
Toluene	0.50	U	0.50	0.19	ug/L			01/22/20 14:56	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/22/20 14:56	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			01/22/20 14:56	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			01/22/20 14:56	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			01/22/20 14:56	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			01/22/20 14:56	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			01/22/20 14:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*		*01/22/20 14:56*	*1*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*		*01/22/20 14:56*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		01/20/20 12:14	01/22/20 08:59	2

Client Sample ID: 41656-003

Date Collected: 01/14/20 09:00
Date Received: 01/16/20 09:10

Lab Sample ID: 160-37004-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/22/20 14:12	1

Client Sample ID: 41656-003

Date Collected: 01/14/20 09:00
Date Received: 01/16/20 09:10

Lab Sample ID: 160-37004-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/22/20 14:12	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			01/22/20 14:12	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			01/22/20 14:12	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			01/22/20 14:12	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			01/22/20 14:12	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			01/22/20 14:12	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			01/22/20 14:12	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			01/22/20 14:12	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			01/22/20 14:12	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			01/22/20 14:12	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			01/22/20 14:12	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			01/22/20 14:12	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			01/22/20 14:12	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			01/22/20 14:12	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			01/22/20 14:12	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			01/22/20 14:12	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			01/22/20 14:12	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			01/22/20 14:12	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			01/22/20 14:12	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			01/22/20 14:12	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			01/22/20 14:12	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			01/22/20 14:12	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			01/22/20 14:12	1
Benzene	0.50	U	0.50	0.10	ug/L			01/22/20 14:12	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			01/22/20 14:12	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			01/22/20 14:12	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			01/22/20 14:12	1
Bromoform	0.50	U	0.50	0.25	ug/L			01/22/20 14:12	1
Bromomethane	0.50	U	0.50	0.38	ug/L			01/22/20 14:12	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			01/22/20 14:12	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			01/22/20 14:12	1
Chloroethane	0.50	U	0.50	0.18	ug/L			01/22/20 14:12	1
Chloroform	0.50	U	0.50	0.24	ug/L			01/22/20 14:12	1
Chloromethane	0.50	U	0.50	0.20	ug/L			01/22/20 14:12	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/22/20 14:12	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/22/20 14:12	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			01/22/20 14:12	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			01/22/20 14:12	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			01/22/20 14:12	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			01/22/20 14:12	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			01/22/20 14:12	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			01/22/20 14:12	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			01/22/20 14:12	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/22/20 14:12	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			01/22/20 14:12	1
Naphthalene	0.67	U	0.67	0.57	ug/L			01/22/20 14:12	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			01/22/20 14:12	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			01/22/20 14:12	1
o-Xylene	0.50	U	0.50	0.29	ug/L			01/22/20 14:12	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37004-1
SDG: 41656

Client Sample ID: 41656-003
Date Collected: 01/14/20 09:00
Date Received: 01/16/20 09:10

Lab Sample ID: 160-37004-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			01/22/20 14:12	1
Styrene	0.50	U	0.50	0.21	ug/L			01/22/20 14:12	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			01/22/20 14:12	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			01/22/20 14:12	1
Toluene	0.50	U	0.50	0.19	ug/L			01/22/20 14:12	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/22/20 14:12	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			01/22/20 14:12	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			01/22/20 14:12	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			01/22/20 14:12	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			01/22/20 14:12	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			01/22/20 14:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*01/22/20 14:12*	*1*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*		*01/22/20 14:12*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-457101/6
Matrix: Water
Analysis Batch: 457101

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/17/20 12:42	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/17/20 12:42	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			01/17/20 12:42	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			01/17/20 12:42	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			01/17/20 12:42	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			01/17/20 12:42	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			01/17/20 12:42	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			01/17/20 12:42	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			01/17/20 12:42	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			01/17/20 12:42	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			01/17/20 12:42	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			01/17/20 12:42	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			01/17/20 12:42	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			01/17/20 12:42	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			01/17/20 12:42	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			01/17/20 12:42	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			01/17/20 12:42	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			01/17/20 12:42	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			01/17/20 12:42	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			01/17/20 12:42	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			01/17/20 12:42	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			01/17/20 12:42	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			01/17/20 12:42	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			01/17/20 12:42	1
Benzene	0.50	U	0.50	0.10	ug/L			01/17/20 12:42	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			01/17/20 12:42	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			01/17/20 12:42	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			01/17/20 12:42	1
Bromoform	0.50	U	0.50	0.25	ug/L			01/17/20 12:42	1
Bromomethane	0.50	U	0.50	0.38	ug/L			01/17/20 12:42	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			01/17/20 12:42	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			01/17/20 12:42	1
Chloroethane	0.50	U	0.50	0.18	ug/L			01/17/20 12:42	1
Chloroform	0.50	U	0.50	0.24	ug/L			01/17/20 12:42	1
Chloromethane	0.50	U	0.50	0.20	ug/L			01/17/20 12:42	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/17/20 12:42	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/17/20 12:42	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			01/17/20 12:42	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			01/17/20 12:42	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			01/17/20 12:42	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			01/17/20 12:42	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			01/17/20 12:42	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			01/17/20 12:42	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			01/17/20 12:42	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/17/20 12:42	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			01/17/20 12:42	1
Naphthalene	0.67	U	0.67	0.57	ug/L			01/17/20 12:42	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			01/17/20 12:42	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-457101/6
Matrix: Water
Analysis Batch: 457101

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			01/17/20 12:42	1
o-Xylene	0.50	U	0.50	0.29	ug/L			01/17/20 12:42	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			01/17/20 12:42	1
Styrene	0.50	U	0.50	0.21	ug/L			01/17/20 12:42	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			01/17/20 12:42	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			01/17/20 12:42	1
Toluene	0.50	U	0.50	0.19	ug/L			01/17/20 12:42	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/17/20 12:42	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			01/17/20 12:42	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			01/17/20 12:42	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			01/17/20 12:42	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			01/17/20 12:42	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			01/17/20 12:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*96*		*70 - 130*		*01/17/20 12:42*	*1*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*01/17/20 12:42*	*1*

Lab Sample ID: LCS 160-457101/4
Matrix: Water
Analysis Batch: 457101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.0		ug/L		100	70 - 130
1,1,1-Trichloroethane	10.0	9.93		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.1		ug/L		101	70 - 130
1,1,2-Trichloroethane	10.0	9.63		ug/L		96	70 - 130
1,1-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethene	10.0	9.42		ug/L		94	70 - 130
1,1-Dichloropropene	10.0	9.97		ug/L		100	70 - 130
1,2,3-Trichlorobenzene	10.0	9.59		ug/L		96	70 - 130
1,2,3-Trichloropropane	10.0	9.36		ug/L		94	70 - 130
1,2,4-Trichlorobenzene	10.0	9.64		ug/L		96	70 - 130
1,2,4-Trimethylbenzene	10.0	10.0		ug/L		100	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	9.58		ug/L		96	70 - 130
1,2-Dibromoethane	10.0	9.82		ug/L		98	70 - 130
1,2-Dichlorobenzene	10.0	10.0		ug/L		100	70 - 130
1,2-Dichloroethane	10.0	9.65		ug/L		97	70 - 130
1,2-Dichloropropane	10.0	9.74		ug/L		97	70 - 130
1,3,5-Trimethylbenzene	10.0	10.1		ug/L		101	70 - 130
1,3-Dichlorobenzene	10.0	9.89		ug/L		99	70 - 130
1,3-Dichloropropane	10.0	9.70		ug/L		97	70 - 130
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
2,2-Dichloropropane	10.0	10.1		ug/L		101	70 - 130
2-Chlorotoluene	10.0	10.4		ug/L		104	70 - 130
4-Chlorotoluene	10.0	9.88		ug/L		99	70 - 130
4-Isopropyltoluene	10.0	10.2		ug/L		102	70 - 130
Benzene	10.0	10.1		ug/L		101	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-457101/4
Matrix: Water
Analysis Batch: 457101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	9.77		ug/L		98	70 - 130
Bromochloromethane	10.0	10.0		ug/L		100	70 - 130
Bromodichloromethane	10.0	10.0		ug/L		100	70 - 130
Bromoform	10.0	9.68		ug/L		97	70 - 130
Bromomethane	10.0	11.1		ug/L		111	70 - 130
Carbon tetrachloride	10.0	9.81		ug/L		98	70 - 130
Chlorobenzene	10.0	10.3		ug/L		103	70 - 130
Chloroethane	10.0	9.94		ug/L		99	70 - 130
Chloroform	10.0	9.91		ug/L		99	70 - 130
Chloromethane	10.0	8.96		ug/L		90	70 - 130
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	70 - 130
cis-1,3-Dichloropropene	10.0	9.86		ug/L		99	70 - 130
Dibromochloromethane	10.0	9.72		ug/L		97	70 - 130
Dibromomethane	10.0	9.76		ug/L		98	70 - 130
Dichlorodifluoromethane	10.0	7.92		ug/L		79	70 - 130
Ethylbenzene	10.0	10.5		ug/L		105	70 - 130
Hexachlorobutadiene	10.0	9.78		ug/L		98	70 - 130
Isopropylbenzene	10.0	10.2		ug/L		102	70 - 130
Methylene Chloride	10.0	9.83		ug/L		98	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.40		ug/L		94	70 - 130
m-Xylene & p-Xylene	10.0	10.1		ug/L		101	70 - 130
Naphthalene	10.0	9.34		ug/L		93	70 - 130
n-Butylbenzene	10.0	9.84		ug/L		98	70 - 130
N-Propylbenzene	10.0	10.2		ug/L		102	70 - 130
o-Xylene	10.0	10.1		ug/L		101	70 - 130
sec-Butylbenzene	10.0	10.3		ug/L		103	70 - 130
Styrene	10.0	10.0		ug/L		100	70 - 130
tert-Butylbenzene	10.0	9.96		ug/L		100	70 - 130
Tetrachloroethene	10.0	9.91		ug/L		99	70 - 130
Toluene	10.0	10.1		ug/L		101	70 - 130
trans-1,2-Dichloroethene	10.0	9.71		ug/L		97	70 - 130
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	70 - 130
Trichloroethene	10.0	10.2		ug/L		102	70 - 130
Trichlorofluoromethane	10.0	10.5		ug/L		105	70 - 130
Vinyl chloride	10.0	9.54		ug/L		95	70 - 130
Xylenes, Total	20.0	20.2		ug/L		101	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*94*		*70 - 130*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: MB 160-457554/6
Matrix: Water
Analysis Batch: 457554

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/22/20 13:27	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/22/20 13:27	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-457554/6
Matrix: Water
Analysis Batch: 457554

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			01/22/20 13:27	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			01/22/20 13:27	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			01/22/20 13:27	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			01/22/20 13:27	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			01/22/20 13:27	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			01/22/20 13:27	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			01/22/20 13:27	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			01/22/20 13:27	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			01/22/20 13:27	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			01/22/20 13:27	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			01/22/20 13:27	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			01/22/20 13:27	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			01/22/20 13:27	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			01/22/20 13:27	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			01/22/20 13:27	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			01/22/20 13:27	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			01/22/20 13:27	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			01/22/20 13:27	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			01/22/20 13:27	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			01/22/20 13:27	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			01/22/20 13:27	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			01/22/20 13:27	1
Benzene	0.50	U	0.50	0.10	ug/L			01/22/20 13:27	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			01/22/20 13:27	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			01/22/20 13:27	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			01/22/20 13:27	1
Bromoform	0.50	U	0.50	0.25	ug/L			01/22/20 13:27	1
Bromomethane	0.50	U	0.50	0.38	ug/L			01/22/20 13:27	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			01/22/20 13:27	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			01/22/20 13:27	1
Chloroethane	0.50	U	0.50	0.18	ug/L			01/22/20 13:27	1
Chloroform	0.50	U	0.50	0.24	ug/L			01/22/20 13:27	1
Chloromethane	0.50	U	0.50	0.20	ug/L			01/22/20 13:27	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/22/20 13:27	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/22/20 13:27	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			01/22/20 13:27	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			01/22/20 13:27	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			01/22/20 13:27	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			01/22/20 13:27	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			01/22/20 13:27	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			01/22/20 13:27	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			01/22/20 13:27	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/22/20 13:27	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			01/22/20 13:27	1
Naphthalene	0.67	U	0.67	0.57	ug/L			01/22/20 13:27	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			01/22/20 13:27	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			01/22/20 13:27	1
o-Xylene	0.50	U	0.50	0.29	ug/L			01/22/20 13:27	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			01/22/20 13:27	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-457554/6
Matrix: Water
Analysis Batch: 457554

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.50	U	0.50	0.21	ug/L			01/22/20 13:27	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			01/22/20 13:27	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			01/22/20 13:27	1
Toluene	0.50	U	0.50	0.19	ug/L			01/22/20 13:27	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			01/22/20 13:27	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			01/22/20 13:27	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			01/22/20 13:27	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			01/22/20 13:27	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			01/22/20 13:27	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			01/22/20 13:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*		*01/22/20 13:27*	*1*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*		*01/22/20 13:27*	*1*

Lab Sample ID: LCS 160-457554/4
Matrix: Water
Analysis Batch: 457554

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.2		ug/L		102	70 - 130
1,1,1-Trichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.8		ug/L		108	70 - 130
1,1,2-Trichloroethane	10.0	10.2		ug/L		102	70 - 130
1,1-Dichloroethane	10.0	10.7		ug/L		107	70 - 130
1,1-Dichloroethene	10.0	10.3		ug/L		103	70 - 130
1,1-Dichloropropene	10.0	10.7		ug/L		107	70 - 130
1,2,3-Trichlorobenzene	10.0	13.1		ug/L		131	70 - 130
1,2,3-Trichloropropane	10.0	10.7		ug/L		107	70 - 130
1,2,4-Trichlorobenzene	10.0	11.7		ug/L		117	70 - 130
1,2,4-Trimethylbenzene	10.0	10.8		ug/L		108	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	9.69		ug/L		97	70 - 130
1,2-Dibromoethane	10.0	9.94		ug/L		99	70 - 130
1,2-Dichlorobenzene	10.0	10.6		ug/L		106	70 - 130
1,2-Dichloroethane	10.0	9.93		ug/L		99	70 - 130
1,2-Dichloropropane	10.0	10.4		ug/L		104	70 - 130
1,3,5-Trimethylbenzene	10.0	10.9		ug/L		109	70 - 130
1,3-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,3-Dichloropropane	10.0	9.97		ug/L		100	70 - 130
1,4-Dichlorobenzene	10.0	10.8		ug/L		108	70 - 130
2,2-Dichloropropane	10.0	8.46		ug/L		85	70 - 130
2-Chlorotoluene	10.0	11.3		ug/L		113	70 - 130
4-Chlorotoluene	10.0	10.7		ug/L		107	70 - 130
4-Isopropyltoluene	10.0	11.0		ug/L		110	70 - 130
Benzene	10.0	10.9		ug/L		109	70 - 130
Bromobenzene	10.0	10.4		ug/L		104	70 - 130
Bromochloromethane	10.0	10.1		ug/L		101	70 - 130
Bromodichloromethane	10.0	10.2		ug/L		102	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-457554/4
Matrix: Water
Analysis Batch: 457554

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromoform	10.0	10.1		ug/L		101	70 - 130
Bromomethane	10.0	12.4		ug/L		124	70 - 130
Carbon tetrachloride	10.0	9.13		ug/L		91	70 - 130
Chlorobenzene	10.0	11.0		ug/L		110	70 - 130
Chloroethane	10.0	11.1		ug/L		111	70 - 130
Chloroform	10.0	10.5		ug/L		105	70 - 130
Chloromethane	10.0	10.3		ug/L		103	70 - 130
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 130
cis-1,3-Dichloropropene	10.0	10.3		ug/L		103	70 - 130
Dibromochloromethane	10.0	9.81		ug/L		98	70 - 130
Dibromomethane	10.0	9.94		ug/L		99	70 - 130
Dichlorodifluoromethane	10.0	8.70		ug/L		87	70 - 130
Ethylbenzene	10.0	11.3		ug/L		113	70 - 130
Hexachlorobutadiene	10.0	11.8		ug/L		118	70 - 130
Isopropylbenzene	10.0	11.0		ug/L		110	70 - 130
Methylene Chloride	10.0	7.45		ug/L		74	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.89		ug/L		99	70 - 130
m-Xylene & p-Xylene	10.0	10.8		ug/L		108	70 - 130
Naphthalene	10.0	11.1		ug/L		111	70 - 130
n-Butylbenzene	10.0	10.5		ug/L		105	70 - 130
N-Propylbenzene	10.0	11.2		ug/L		112	70 - 130
o-Xylene	10.0	10.7		ug/L		107	70 - 130
sec-Butylbenzene	10.0	11.2		ug/L		112	70 - 130
Styrene	10.0	10.5		ug/L		105	70 - 130
tert-Butylbenzene	10.0	10.9		ug/L		109	70 - 130
Tetrachloroethene	10.0	10.6		ug/L		106	70 - 130
Toluene	10.0	10.7		ug/L		107	70 - 130
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	70 - 130
trans-1,3-Dichloropropene	10.0	10.5		ug/L		105	70 - 130
Trichloroethene	10.0	10.8		ug/L		108	70 - 130
Trichlorofluoromethane	10.0	10.1		ug/L		101	70 - 130
Vinyl chloride	10.0	11.1		ug/L		111	70 - 130
Xylenes, Total	20.0	21.5		ug/L		108	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*91*		*70 - 130*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*

Lab Sample ID: 160-37002-A-6 MS
Matrix: Water
Analysis Batch: 457554

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.50	U	10.0	10.0		ug/L		100	73 - 123
1,1,1-Trichloroethane	0.50	U	10.0	9.02		ug/L		90	76 - 122
1,1,2,2-Tetrachloroethane	0.50	U	10.0	11.2		ug/L		112	77 - 118
1,1,2-Trichloroethane	0.50	U	10.0	10.2		ug/L		102	79 - 116
1,1-Dichloroethane	0.50	U	10.0	10.6		ug/L		106	81 - 120

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37004-1
SDG: 41656

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-37002-A-6 MS
Matrix: Water
Analysis Batch: 457554

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	0.50	U	10.0	8.39		ug/L		84	68 - 116
1,1-Dichloropropene	0.50	U	10.0	9.41		ug/L		94	74 - 124
1,2,3-Trichlorobenzene	0.59	U	10.0	13.2		ug/L		132	57 - 128
1,2,3-Trichloropropane	0.50	U	10.0	10.2		ug/L		102	72 - 122
1,2,4-Trichlorobenzene	0.55	U	10.0	11.4		ug/L		114	54 - 150
1,2,4-Trimethylbenzene	0.50	U	10.0	10.5		ug/L		105	70 - 125
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	9.34		ug/L		93	58 - 130
1,2-Dibromoethane	0.50	U	10.0	9.68		ug/L		97	76 - 118
1,2-Dichlorobenzene	0.50	U	10.0	10.6		ug/L		106	76 - 120
1,2-Dichloroethane	0.50	U	10.0	10.4		ug/L		104	78 - 123
1,2-Dichloropropane	0.50	U	10.0	10.9		ug/L		109	80 - 119
1,3,5-Trimethylbenzene	0.50	U	10.0	10.5		ug/L		105	76 - 126
1,3-Dichlorobenzene	0.50	U	10.0	10.3		ug/L		103	76 - 120
1,3-Dichloropropane	0.50	U	10.0	10.0		ug/L		100	79 - 116
1,4-Dichlorobenzene	0.50	U	10.0	10.7		ug/L		107	75 - 117
2,2-Dichloropropane	0.50	U	10.0	6.55		ug/L		66	76 - 120
2-Chlorotoluene	0.50	U	10.0	11.4		ug/L		114	79 - 125
4-Chlorotoluene	0.50	U	10.0	10.6		ug/L		106	76 - 136
4-Isopropyltoluene	0.50	U	10.0	10.1		ug/L		101	78 - 132
Benzene	0.50	U	10.0	10.9		ug/L		109	77 - 124
Bromobenzene	0.50	U	10.0	10.4		ug/L		104	77 - 115
Bromochloromethane	0.50	U	10.0	10.3		ug/L		103	73 - 118
Bromodichloromethane	0.50	U	10.0	10.2		ug/L		102	73 - 118
Bromoform	0.50	U	10.0	9.30		ug/L		93	70 - 118
Bromomethane	0.50	U	10.0	12.6		ug/L		126	46 - 147
Carbon tetrachloride	0.50	U	10.0	7.78		ug/L		78	70 - 128
Chlorobenzene	0.50	U	10.0	10.8		ug/L		108	76 - 124
Chloroethane	0.50	U	10.0	11.1		ug/L		111	66 - 129
Chloroform	0.50	U	10.0	10.5		ug/L		105	77 - 122
Chloromethane	0.50	U	10.0	9.54		ug/L		95	68 - 132
cis-1,2-Dichloroethene	0.50	U	10.0	10.2		ug/L		102	71 - 117
cis-1,3-Dichloropropene	0.50	U	10.0	9.78		ug/L		98	76 - 128
Dibromochloromethane	0.50	U	10.0	9.35		ug/L		94	73 - 114
Dibromomethane	0.50	U	10.0	10.2		ug/L		102	77 - 118
Dichlorodifluoromethane	0.50	U	10.0	5.64		ug/L		56	61 - 134
Ethylbenzene	0.50	U	10.0	10.7		ug/L		107	80 - 122
Hexachlorobutadiene	0.50	U	10.0	10.4		ug/L		104	57 - 144
Isopropylbenzene	0.50	U	10.0	10.1		ug/L		101	85 - 148
Methylene Chloride	0.50	U	10.0	8.15		ug/L		82	65 - 131
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	9.56		ug/L		96	75 - 122
m-Xylene & p-Xylene	1.0	U	10.0	10.3		ug/L		103	70 - 130
Naphthalene	0.67	U	10.0	11.1		ug/L		111	56 - 143
n-Butylbenzene	0.50	U	10.0	9.39		ug/L		94	74 - 128
N-Propylbenzene	0.50	U	10.0	10.5		ug/L		105	80 - 132
o-Xylene	0.50	U	10.0	10.3		ug/L		103	70 - 130
sec-Butylbenzene	0.50	U	10.0	10.1		ug/L		101	78 - 128
Styrene	0.50	U	10.0	10.2		ug/L		102	68 - 125
tert-Butylbenzene	0.50	U	10.0	10.1		ug/L		101	75 - 131
Tetrachloroethene	0.50	U	10.0	9.10		ug/L		91	71 - 124

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-37002-A-6 MS
Matrix: Water
Analysis Batch: 457554

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	0.50	U	10.0	10.2		ug/L		102	76 - 127
trans-1,2-Dichloroethene	0.50	U	10.0	9.68		ug/L		97	72 - 117
trans-1,3-Dichloropropene	0.50	U	10.0	9.97		ug/L		100	85 - 135
Trichloroethene	0.50	U	10.0	10.3		ug/L		103	71 - 118
Trichlorofluoromethane	0.50	U	10.0	9.02		ug/L		90	56 - 127
Vinyl chloride	0.50	U	10.0	9.42		ug/L		94	58 - 114
Xylenes, Total	3.0	U	20.0	20.6		ug/L		103	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*96*		*70 - 130*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*

Lab Sample ID: 160-37002-A-6 MSD
Matrix: Water
Analysis Batch: 457554

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.50	U	10.0	10.1		ug/L		101	73 - 123	1	20
1,1,1-Trichloroethane	0.50	U	10.0	8.91		ug/L		89	76 - 122	1	20
1,1,2,2-Tetrachloroethane	0.50	U	10.0	11.1		ug/L		111	77 - 118	1	20
1,1,2-Trichloroethane	0.50	U	10.0	10.5		ug/L		105	79 - 116	3	20
1,1-Dichloroethane	0.50	U	10.0	10.5		ug/L		105	81 - 120	2	20
1,1-Dichloroethene	0.50	U	10.0	9.70		ug/L		97	68 - 116	14	20
1,1-Dichloropropene	0.50	U	10.0	9.17		ug/L		92	74 - 124	3	20
1,2,3-Trichlorobenzene	0.59	U	10.0	13.3		ug/L		133	57 - 128	1	20
1,2,3-Trichloropropane	0.50	U	10.0	10.9		ug/L		109	72 - 122	7	20
1,2,4-Trichlorobenzene	0.55	U	10.0	11.4		ug/L		114	54 - 150	0	20
1,2,4-Trimethylbenzene	0.50	U	10.0	10.4		ug/L		104	70 - 125	2	20
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	9.79		ug/L		98	58 - 130	5	20
1,2-Dibromoethane	0.50	U	10.0	10.1		ug/L		101	76 - 118	4	20
1,2-Dichlorobenzene	0.50	U	10.0	10.5		ug/L		105	76 - 120	1	20
1,2-Dichloroethane	0.50	U	10.0	10.6		ug/L		106	78 - 123	1	20
1,2-Dichloropropane	0.50	U	10.0	10.8		ug/L		108	80 - 119	1	20
1,3,5-Trimethylbenzene	0.50	U	10.0	10.2		ug/L		102	76 - 126	2	20
1,3-Dichlorobenzene	0.50	U	10.0	10.2		ug/L		102	76 - 120	1	20
1,3-Dichloropropane	0.50	U	10.0	10.2		ug/L		102	79 - 116	2	20
1,4-Dichlorobenzene	0.50	U	10.0	10.7		ug/L		107	75 - 117	0	20
2,2-Dichloropropane	0.50	U	10.0	6.74		ug/L		67	76 - 120	3	20
2-Chlorotoluene	0.50	U	10.0	11.0		ug/L		110	79 - 125	4	20
4-Chlorotoluene	0.50	U	10.0	10.5		ug/L		105	76 - 136	1	20
4-Isopropyltoluene	0.50	U	10.0	9.75		ug/L		97	78 - 132	3	20
Benzene	0.50	U	10.0	10.8		ug/L		108	77 - 124	2	20
Bromobenzene	0.50	U	10.0	10.4		ug/L		104	77 - 115	1	20
Bromochloromethane	0.50	U	10.0	10.3		ug/L		103	73 - 118	0	20
Bromodichloromethane	0.50	U	10.0	10.3		ug/L		103	73 - 118	1	20
Bromoform	0.50	U	10.0	9.43		ug/L		94	70 - 118	1	20
Bromomethane	0.50	U	10.0	12.1		ug/L		121	46 - 147	4	20
Carbon tetrachloride	0.50	U	10.0	7.91		ug/L		79	70 - 128	2	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-37002-A-6 MSD
Matrix: Water
Analysis Batch: 457554

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene	0.50	U	10.0	10.8		ug/L		108	76 - 124	0	20
Chloroethane	0.50	U	10.0	10.7		ug/L		107	66 - 129	4	20
Chloroform	0.50	U	10.0	10.5		ug/L		105	77 - 122	0	20
Chloromethane	0.50	U	10.0	9.95		ug/L		100	68 - 132	4	20
cis-1,2-Dichloroethene	0.50	U	10.0	10.3		ug/L		103	71 - 117	1	20
cis-1,3-Dichloropropene	0.50	U	10.0	9.95		ug/L		99	76 - 128	2	20
Dibromochloromethane	0.50	U	10.0	9.66		ug/L		97	73 - 114	3	20
Dibromomethane	0.50	U	10.0	10.4		ug/L		104	77 - 118	2	20
Dichlorodifluoromethane	0.50	U	10.0	6.22		ug/L		62	61 - 134	10	20
Ethylbenzene	0.50	U	10.0	10.6		ug/L		106	80 - 122	1	20
Hexachlorobutadiene	0.50	U	10.0	10.1		ug/L		101	57 - 144	4	20
Isopropylbenzene	0.50	U	10.0	9.91		ug/L		99	85 - 148	2	20
Methylene Chloride	0.50	U	10.0	7.59		ug/L		76	65 - 131	7	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	10.2		ug/L		102	75 - 122	6	20
m-Xylene & p-Xylene	1.0	U	10.0	10.2		ug/L		102	70 - 130	1	20
Naphthalene	0.67	U	10.0	11.5		ug/L		115	56 - 143	3	20
n-Butylbenzene	0.50	U	10.0	9.13		ug/L		91	74 - 128	3	20
N-Propylbenzene	0.50	U	10.0	10.2		ug/L		102	80 - 132	2	20
o-Xylene	0.50	U	10.0	10.3		ug/L		103	70 - 130	0	20
sec-Butylbenzene	0.50	U	10.0	9.85		ug/L		99	78 - 128	3	20
Styrene	0.50	U	10.0	10.1		ug/L		101	68 - 125	1	20
tert-Butylbenzene	0.50	U	10.0	9.80		ug/L		98	75 - 131	3	20
Tetrachloroethene	0.50	U	10.0	8.97		ug/L		90	71 - 124	1	20
Toluene	0.50	U	10.0	10.3		ug/L		103	76 - 127	0	20
trans-1,2-Dichloroethene	0.50	U	10.0	9.52		ug/L		95	72 - 117	2	20
trans-1,3-Dichloropropene	0.50	U	10.0	10.3		ug/L		103	85 - 135	4	20
Trichloroethene	0.50	U	10.0	10.0		ug/L		100	71 - 118	2	20
Trichlorofluoromethane	0.50	U	10.0	8.81		ug/L		88	56 - 127	2	20
Vinyl chloride	0.50	U	10.0	9.34		ug/L		93	58 - 114	1	20
Xylenes, Total	3.0	U	20.0	20.5		ug/L		103	78 - 128	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*94*		*70 - 130*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-457277/1-A
Matrix: Water
Analysis Batch: 457550

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 457277

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		01/20/20 12:14	01/22/20 08:26	2

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 160-457277/2-A
Matrix: Water
Analysis Batch: 457550

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 457277

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	205		ug/L		103	80 - 120		

Lab Sample ID: 160-37004-2 MS
Matrix: Water
Analysis Batch: 457550

Client Sample ID: 41656-002
Prep Type: Total/NA
Prep Batch: 457277

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	208		ug/L		104	75 - 125		

Lab Sample ID: 160-37004-2 MSD
Matrix: Water
Analysis Batch: 457550

Client Sample ID: 41656-002
Prep Type: Total/NA
Prep Batch: 457277

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	203		ug/L		102	75 - 125	2	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37004-1
SDG: 41656

GC/MS VOA

Analysis Batch: 457101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37004-1	41656-001	Total/NA	Water	524.2	
MB 160-457101/6	Method Blank	Total/NA	Water	524.2	
LCS 160-457101/4	Lab Control Sample	Total/NA	Water	524.2	

Analysis Batch: 457554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37004-2	41656-002	Total/NA	Water	524.2	
160-37004-3	41656-003	Total/NA	Water	524.2	
MB 160-457554/6	Method Blank	Total/NA	Water	524.2	
LCS 160-457554/4	Lab Control Sample	Total/NA	Water	524.2	
160-37002-A-6 MS	Matrix Spike	Total/NA	Water	524.2	
160-37002-A-6 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Metals

Prep Batch: 457277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37004-2	41656-002	Total/NA	Water	3010A	
MB 160-457277/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-457277/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-37004-2 MS	41656-002	Total/NA	Water	3010A	
160-37004-2 MSD	41656-002	Total/NA	Water	3010A	

Analysis Batch: 457550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37004-2	41656-002	Total/NA	Water	6020A	457277
MB 160-457277/1-A	Method Blank	Total/NA	Water	6020A	457277
LCS 160-457277/2-A	Lab Control Sample	Total/NA	Water	6020A	457277
160-37004-2 MS	41656-002	Total/NA	Water	6020A	457277
160-37004-2 MSD	41656-002	Total/NA	Water	6020A	457277

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37004-1
SDG: 41656

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		DCZ	BFB										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
160-37002-A-6 MS	Matrix Spike	96	88										
160-37002-A-6 MSD	Matrix Spike Duplicate	94	87										
160-37004-1	41656-001	98	89										
160-37004-2	41656-002	100	85										
160-37004-3	41656-003	99	87										
LCS 160-457101/4	Lab Control Sample	94	92										
LCS 160-457554/4	Lab Control Sample	91	89										
MB 160-457101/6	Method Blank	96	90										
MB 160-457554/6	Method Blank	98	85										

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-37161-1
Laboratory Sample Delivery Group: 41702
Client Project/Site: BNL - OU3-B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
2/17/2020 5:00:35 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-37161-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3-B96

Report Number: 160-37161-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 2/5/2020 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.1° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41702-001 (160-37161-1) and 41702-002 (160-37161-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 02/10/2020 and 02/11/2020.

Job ID: 160-37161-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-459794:
The continuing calibration verification (CCVIS) recovered above the upper control limit for Vinyl chloride, Chloroethane, Trichlorofluoromethane, and Bromomethane. The samples associated with this CCV were non-detect for the affected analytes except for sample 160-37161-1 which will be reanalyzed for Trichlorofluoromethane. Therefore, the data was reported: 41702-001 (160-37161-1), 41702-002 (160-37161-2), and (CCVIS 160-459794/3).

The laboratory control sample (LCS) for Bromomethane recovered outside of upper control limits for Bromomethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data was reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 41702-002 (160-37161-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 02/06/2020 and analyzed on 02/14/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41702

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J milligan	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD use TB-1 from COC# 41700

Type UID	Smp	Coll	Sample Information: Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information: Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	2/4/20	1050	W	RTW-1 Influent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0		1052	W	RTW-1 Effluent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0		1052	W	RTW-1 Effluent	250 ML	P	1	Hno3										x
003	E	G	TB-1	0			W	Trip Blank	40 ML	SC	3	HCL					x					

160-37161 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milligan 2/4/20	Print	Print
Signature 1430	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Nicholas Press 2-5-20	Print	Print
Signature 0950	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☑ Disposal by Lab
☐ Archive For ____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☑ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-37161-1
SDG Number: 41702

Login Number: 37161
List Number: 1
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-37161-1
SDG: 41702

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-37161-1
SDG: 41702

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-37161-1
SDG: 41702

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-37161-1	41702-001	Water	02/04/20 10:50	02/05/20 09:50	
160-37161-2	41702-002	Water	02/04/20 10:52	02/05/20 09:50	

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-37161-1
SDG: 41702

Client Sample ID: 41702-001
Date Collected: 02/04/20 10:50
Date Received: 02/05/20 09:50

Lab Sample ID: 160-37161-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/10/20 15:01	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/10/20 15:01	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			02/10/20 15:01	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			02/10/20 15:01	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			02/10/20 15:01	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			02/10/20 15:01	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			02/10/20 15:01	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			02/10/20 15:01	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			02/10/20 15:01	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			02/10/20 15:01	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			02/10/20 15:01	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			02/10/20 15:01	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			02/10/20 15:01	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			02/10/20 15:01	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			02/10/20 15:01	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			02/10/20 15:01	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			02/10/20 15:01	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			02/10/20 15:01	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			02/10/20 15:01	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			02/10/20 15:01	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			02/10/20 15:01	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			02/10/20 15:01	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			02/10/20 15:01	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			02/10/20 15:01	1
Benzene	0.50	U	0.50	0.10	ug/L			02/10/20 15:01	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			02/10/20 15:01	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			02/10/20 15:01	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			02/10/20 15:01	1
Bromoform	0.50	U	0.50	0.25	ug/L			02/10/20 15:01	1
Bromomethane	0.50	U	0.50	0.38	ug/L			02/10/20 15:01	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			02/10/20 15:01	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			02/10/20 15:01	1
Chloroethane	0.50	U	0.50	0.18	ug/L			02/10/20 15:01	1
Chloroform	**0.71**		0.50	0.24	ug/L			02/10/20 15:01	1
Chloromethane	0.50	U	0.50	0.20	ug/L			02/10/20 15:01	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/10/20 15:01	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/10/20 15:01	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			02/10/20 15:01	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			02/10/20 15:01	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			02/10/20 15:01	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			02/10/20 15:01	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			02/10/20 15:01	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			02/10/20 15:01	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			02/10/20 15:01	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/10/20 15:01	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			02/10/20 15:01	1
Naphthalene	0.67	U	0.67	0.57	ug/L			02/10/20 15:01	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			02/10/20 15:01	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			02/10/20 15:01	1

Client Sample ID: 41702-001

Date Collected: 02/04/20 10:50
Date Received: 02/05/20 09:50

Lab Sample ID: 160-37161-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			02/10/20 15:01	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			02/10/20 15:01	1
Styrene	0.50	U	0.50	0.21	ug/L			02/10/20 15:01	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			02/10/20 15:01	1
Tetrachloroethene	**5.7**		0.50	0.19	ug/L			02/10/20 15:01	1
Toluene	0.50	U	0.50	0.19	ug/L			02/10/20 15:01	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/10/20 15:01	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			02/10/20 15:01	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			02/10/20 15:01	1
Trichlorofluoromethane	**0.52**		0.50	0.16	ug/L			02/11/20 13:58	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			02/10/20 15:01	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			02/10/20 15:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*		*02/10/20 15:01*	*1*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*02/11/20 13:58*	*1*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*		*02/10/20 15:01*	*1*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*		*02/11/20 13:58*	*1*

Client Sample ID: 41702-002

Date Collected: 02/04/20 10:52
Date Received: 02/05/20 09:50

Lab Sample ID: 160-37161-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/10/20 15:24	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/10/20 15:24	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			02/10/20 15:24	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			02/10/20 15:24	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			02/10/20 15:24	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			02/10/20 15:24	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			02/10/20 15:24	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			02/10/20 15:24	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			02/10/20 15:24	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			02/10/20 15:24	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			02/10/20 15:24	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			02/10/20 15:24	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			02/10/20 15:24	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			02/10/20 15:24	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			02/10/20 15:24	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			02/10/20 15:24	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			02/10/20 15:24	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			02/10/20 15:24	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			02/10/20 15:24	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			02/10/20 15:24	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			02/10/20 15:24	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			02/10/20 15:24	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			02/10/20 15:24	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			02/10/20 15:24	1
Benzene	0.50	U	0.50	0.10	ug/L			02/10/20 15:24	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-37161-1
SDG: 41702

Client Sample ID: 41702-002
Date Collected: 02/04/20 10:52
Date Received: 02/05/20 09:50

Lab Sample ID: 160-37161-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	0.50	U	0.50	0.12	ug/L			02/10/20 15:24	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			02/10/20 15:24	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			02/10/20 15:24	1
Bromoform	0.50	U	0.50	0.25	ug/L			02/10/20 15:24	1
Bromomethane	0.50	U	0.50	0.38	ug/L			02/10/20 15:24	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			02/10/20 15:24	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			02/10/20 15:24	1
Chloroethane	0.50	U	0.50	0.18	ug/L			02/10/20 15:24	1
Chloroform	0.50	U	0.50	0.24	ug/L			02/10/20 15:24	1
Chloromethane	0.50	U	0.50	0.20	ug/L			02/10/20 15:24	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/10/20 15:24	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/10/20 15:24	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			02/10/20 15:24	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			02/10/20 15:24	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			02/10/20 15:24	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			02/10/20 15:24	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			02/10/20 15:24	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			02/10/20 15:24	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			02/10/20 15:24	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/10/20 15:24	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			02/10/20 15:24	1
Naphthalene	0.67	U	0.67	0.57	ug/L			02/10/20 15:24	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			02/10/20 15:24	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			02/10/20 15:24	1
o-Xylene	0.50	U	0.50	0.29	ug/L			02/10/20 15:24	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			02/10/20 15:24	1
Styrene	0.50	U	0.50	0.21	ug/L			02/10/20 15:24	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			02/10/20 15:24	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			02/10/20 15:24	1
Toluene	0.50	U	0.50	0.19	ug/L			02/10/20 15:24	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/10/20 15:24	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			02/10/20 15:24	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			02/10/20 15:24	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			02/10/20 15:24	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			02/10/20 15:24	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			02/10/20 15:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*97*		*70 - 130*		*02/10/20 15:24*	*1*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*		*02/10/20 15:24*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		02/06/20 14:26	02/14/20 09:12	2

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-459794/6
Matrix: Water
Analysis Batch: 459794

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/10/20 12:46	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/10/20 12:46	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			02/10/20 12:46	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			02/10/20 12:46	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			02/10/20 12:46	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			02/10/20 12:46	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			02/10/20 12:46	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			02/10/20 12:46	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			02/10/20 12:46	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			02/10/20 12:46	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			02/10/20 12:46	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			02/10/20 12:46	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			02/10/20 12:46	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			02/10/20 12:46	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			02/10/20 12:46	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			02/10/20 12:46	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			02/10/20 12:46	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			02/10/20 12:46	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			02/10/20 12:46	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			02/10/20 12:46	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			02/10/20 12:46	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			02/10/20 12:46	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			02/10/20 12:46	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			02/10/20 12:46	1
Benzene	0.50	U	0.50	0.10	ug/L			02/10/20 12:46	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			02/10/20 12:46	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			02/10/20 12:46	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			02/10/20 12:46	1
Bromoform	0.50	U	0.50	0.25	ug/L			02/10/20 12:46	1
Bromomethane	0.50	U	0.50	0.38	ug/L			02/10/20 12:46	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			02/10/20 12:46	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			02/10/20 12:46	1
Chloroethane	0.50	U	0.50	0.18	ug/L			02/10/20 12:46	1
Chloroform	0.50	U	0.50	0.24	ug/L			02/10/20 12:46	1
Chloromethane	0.50	U	0.50	0.20	ug/L			02/10/20 12:46	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/10/20 12:46	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/10/20 12:46	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			02/10/20 12:46	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			02/10/20 12:46	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			02/10/20 12:46	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			02/10/20 12:46	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			02/10/20 12:46	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			02/10/20 12:46	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			02/10/20 12:46	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/10/20 12:46	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			02/10/20 12:46	1
Naphthalene	0.67	U	0.67	0.57	ug/L			02/10/20 12:46	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			02/10/20 12:46	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-459794/6
Matrix: Water
Analysis Batch: 459794

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			02/10/20 12:46	1
o-Xylene	0.50	U	0.50	0.29	ug/L			02/10/20 12:46	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			02/10/20 12:46	1
Styrene	0.50	U	0.50	0.21	ug/L			02/10/20 12:46	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			02/10/20 12:46	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			02/10/20 12:46	1
Toluene	0.50	U	0.50	0.19	ug/L			02/10/20 12:46	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/10/20 12:46	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			02/10/20 12:46	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			02/10/20 12:46	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			02/10/20 12:46	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			02/10/20 12:46	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			02/10/20 12:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*97*		*70 - 130*		*02/10/20 12:46*	*1*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*		*02/10/20 12:46*	*1*

Lab Sample ID: LCS 160-459794/4
Matrix: Water
Analysis Batch: 459794

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	9.80		ug/L		98	70 - 130
1,1,1-Trichloroethane	10.0	10.2		ug/L		102	70 - 130
1,1,2,2-Tetrachloroethane	10.0	11.4		ug/L		114	70 - 130
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethane	10.0	11.0		ug/L		110	70 - 130
1,1-Dichloroethene	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloropropene	10.0	10.8		ug/L		108	70 - 130
1,2,3-Trichlorobenzene	10.0	10.6		ug/L		106	70 - 130
1,2,3-Trichloropropane	10.0	10.5		ug/L		105	70 - 130
1,2,4-Trichlorobenzene	10.0	10.3		ug/L		103	70 - 130
1,2,4-Trimethylbenzene	10.0	10.5		ug/L		105	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	9.80		ug/L		98	70 - 130
1,2-Dibromoethane	10.0	9.73		ug/L		97	70 - 130
1,2-Dichlorobenzene	10.0	10.5		ug/L		105	70 - 130
1,2-Dichloroethane	10.0	10.4		ug/L		104	70 - 130
1,2-Dichloropropane	10.0	10.4		ug/L		104	70 - 130
1,3,5-Trimethylbenzene	10.0	10.5		ug/L		105	70 - 130
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,3-Dichloropropane	10.0	10.1		ug/L		101	70 - 130
1,4-Dichlorobenzene	10.0	10.7		ug/L		107	70 - 130
2,2-Dichloropropane	10.0	10.2		ug/L		102	70 - 130
2-Chlorotoluene	10.0	11.1		ug/L		111	70 - 130
4-Chlorotoluene	10.0	10.4		ug/L		104	70 - 130
4-Isopropyltoluene	10.0	10.5		ug/L		105	70 - 130
Benzene	10.0	10.9		ug/L		109	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-459794/4
Matrix: Water
Analysis Batch: 459794

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.0		ug/L		100	70 - 130
Bromochloromethane	10.0	10.1		ug/L		101	70 - 130
Bromodichloromethane	10.0	10.3		ug/L		103	70 - 130
Bromoform	10.0	9.68		ug/L		97	70 - 130
Bromomethane	10.0	13.7		ug/L		137	70 - 130
Carbon tetrachloride	10.0	9.62		ug/L		96	70 - 130
Chlorobenzene	10.0	10.6		ug/L		106	70 - 130
Chloroethane	10.0	12.3		ug/L		123	70 - 130
Chloroform	10.0	11.0		ug/L		110	70 - 130
Chloromethane	10.0	11.8		ug/L		118	70 - 130
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	70 - 130
cis-1,3-Dichloropropene	10.0	10.2		ug/L		102	70 - 130
Dibromochloromethane	10.0	9.47		ug/L		95	70 - 130
Dibromomethane	10.0	10.1		ug/L		101	70 - 130
Dichlorodifluoromethane	10.0	11.0		ug/L		110	70 - 130
Ethylbenzene	10.0	10.8		ug/L		108	70 - 130
Hexachlorobutadiene	10.0	10.3		ug/L		103	70 - 130
Isopropylbenzene	10.0	10.4		ug/L		104	70 - 130
Methylene Chloride	10.0	10.6		ug/L		106	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.82		ug/L		98	70 - 130
m-Xylene & p-Xylene	10.0	10.4		ug/L		104	70 - 130
Naphthalene	10.0	9.95		ug/L		99	70 - 130
n-Butylbenzene	10.0	10.4		ug/L		104	70 - 130
N-Propylbenzene	10.0	10.8		ug/L		108	70 - 130
o-Xylene	10.0	10.2		ug/L		102	70 - 130
sec-Butylbenzene	10.0	10.8		ug/L		108	70 - 130
Styrene	10.0	10.1		ug/L		101	70 - 130
tert-Butylbenzene	10.0	10.3		ug/L		103	70 - 130
Tetrachloroethene	10.0	9.62		ug/L		96	70 - 130
Toluene	10.0	10.3		ug/L		103	70 - 130
trans-1,2-Dichloroethene	10.0	10.8		ug/L		108	70 - 130
trans-1,3-Dichloropropene	10.0	10.4		ug/L		104	70 - 130
Trichloroethene	10.0	10.5		ug/L		105	70 - 130
Trichlorofluoromethane	10.0	12.1		ug/L		121	70 - 130
Vinyl chloride	10.0	12.4		ug/L		124	70 - 130
Xylenes, Total	20.0	20.6		ug/L		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*91*		*70 - 130*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*

Lab Sample ID: MB 160-459987/6
Matrix: Water
Analysis Batch: 459987

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/11/20 12:50	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/11/20 12:50	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-459987/6
Matrix: Water
Analysis Batch: 459987

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			02/11/20 12:50	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			02/11/20 12:50	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			02/11/20 12:50	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			02/11/20 12:50	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			02/11/20 12:50	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			02/11/20 12:50	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			02/11/20 12:50	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			02/11/20 12:50	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			02/11/20 12:50	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			02/11/20 12:50	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			02/11/20 12:50	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			02/11/20 12:50	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			02/11/20 12:50	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			02/11/20 12:50	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			02/11/20 12:50	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			02/11/20 12:50	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			02/11/20 12:50	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			02/11/20 12:50	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			02/11/20 12:50	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			02/11/20 12:50	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			02/11/20 12:50	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			02/11/20 12:50	1
Benzene	0.50	U	0.50	0.10	ug/L			02/11/20 12:50	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			02/11/20 12:50	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			02/11/20 12:50	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			02/11/20 12:50	1
Bromoform	0.50	U	0.50	0.25	ug/L			02/11/20 12:50	1
Bromomethane	0.50	U	0.50	0.38	ug/L			02/11/20 12:50	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			02/11/20 12:50	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			02/11/20 12:50	1
Chloroethane	0.50	U	0.50	0.18	ug/L			02/11/20 12:50	1
Chloroform	0.50	U	0.50	0.24	ug/L			02/11/20 12:50	1
Chloromethane	0.50	U	0.50	0.20	ug/L			02/11/20 12:50	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/11/20 12:50	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/11/20 12:50	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			02/11/20 12:50	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			02/11/20 12:50	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			02/11/20 12:50	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			02/11/20 12:50	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			02/11/20 12:50	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			02/11/20 12:50	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			02/11/20 12:50	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/11/20 12:50	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			02/11/20 12:50	1
Naphthalene	0.67	U	0.67	0.57	ug/L			02/11/20 12:50	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			02/11/20 12:50	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			02/11/20 12:50	1
o-Xylene	0.50	U	0.50	0.29	ug/L			02/11/20 12:50	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			02/11/20 12:50	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-459987/6
Matrix: Water
Analysis Batch: 459987

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.50	U	0.50	0.21	ug/L			02/11/20 12:50	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			02/11/20 12:50	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			02/11/20 12:50	1
Toluene	0.50	U	0.50	0.19	ug/L			02/11/20 12:50	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/11/20 12:50	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			02/11/20 12:50	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			02/11/20 12:50	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			02/11/20 12:50	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			02/11/20 12:50	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			02/11/20 12:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*96*		*70 - 130*		*02/11/20 12:50*	*1*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*		*02/11/20 12:50*	*1*

Lab Sample ID: LCS 160-459987/4
Matrix: Water
Analysis Batch: 459987

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	9.36		ug/L		94	70 - 130
1,1,1-Trichloroethane	10.0	9.20		ug/L		92	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,2-Trichloroethane	10.0	9.73		ug/L		97	70 - 130
1,1-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethene	10.0	9.22		ug/L		92	70 - 130
1,1-Dichloropropene	10.0	9.37		ug/L		94	70 - 130
1,2,3-Trichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,2,3-Trichloropropane	10.0	9.79		ug/L		98	70 - 130
1,2,4-Trichlorobenzene	10.0	9.95		ug/L		100	70 - 130
1,2,4-Trimethylbenzene	10.0	10.0		ug/L		100	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	8.96		ug/L		90	70 - 130
1,2-Dibromoethane	10.0	9.40		ug/L		94	70 - 130
1,2-Dichlorobenzene	10.0	10.0		ug/L		100	70 - 130
1,2-Dichloroethane	10.0	9.60		ug/L		96	70 - 130
1,2-Dichloropropane	10.0	10.0		ug/L		100	70 - 130
1,3,5-Trimethylbenzene	10.0	10.0		ug/L		100	70 - 130
1,3-Dichlorobenzene	10.0	9.73		ug/L		97	70 - 130
1,3-Dichloropropane	10.0	9.85		ug/L		99	70 - 130
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
2,2-Dichloropropane	10.0	9.37		ug/L		94	70 - 130
2-Chlorotoluene	10.0	10.1		ug/L		101	70 - 130
4-Chlorotoluene	10.0	9.97		ug/L		100	70 - 130
4-Isopropyltoluene	10.0	10.0		ug/L		100	70 - 130
Benzene	10.0	9.95		ug/L		99	70 - 130
Bromobenzene	10.0	9.67		ug/L		97	70 - 130
Bromochloromethane	10.0	9.60		ug/L		96	70 - 130
Bromodichloromethane	10.0	9.54		ug/L		95	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-459987/4
Matrix: Water
Analysis Batch: 459987

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromoform	10.0	9.13		ug/L		91	70 - 130
Bromomethane	10.0	11.9		ug/L		119	70 - 130
Carbon tetrachloride	10.0	8.48		ug/L		85	70 - 130
Chlorobenzene	10.0	10.0		ug/L		100	70 - 130
Chloroethane	10.0	10.6		ug/L		106	70 - 130
Chloroform	10.0	10.2		ug/L		102	70 - 130
Chloromethane	10.0	10.6		ug/L		106	70 - 130
cis-1,2-Dichloroethene	10.0	9.63		ug/L		96	70 - 130
cis-1,3-Dichloropropene	10.0	9.74		ug/L		97	70 - 130
Dibromochloromethane	10.0	9.21		ug/L		92	70 - 130
Dibromomethane	10.0	9.68		ug/L		97	70 - 130
Dichlorodifluoromethane	10.0	9.61		ug/L		96	70 - 130
Ethylbenzene	10.0	10.1		ug/L		101	70 - 130
Hexachlorobutadiene	10.0	9.56		ug/L		96	70 - 130
Isopropylbenzene	10.0	9.61		ug/L		96	70 - 130
Methylene Chloride	10.0	9.90		ug/L		99	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.06		ug/L		91	70 - 130
m-Xylene & p-Xylene	10.0	9.74		ug/L		97	70 - 130
Naphthalene	10.0	9.48		ug/L		95	70 - 130
n-Butylbenzene	10.0	9.76		ug/L		98	70 - 130
N-Propylbenzene	10.0	10.2		ug/L		102	70 - 130
o-Xylene	10.0	9.72		ug/L		97	70 - 130
sec-Butylbenzene	10.0	10.2		ug/L		102	70 - 130
Styrene	10.0	9.52		ug/L		95	70 - 130
tert-Butylbenzene	10.0	9.77		ug/L		98	70 - 130
Tetrachloroethene	10.0	8.84		ug/L		88	70 - 130
Toluene	10.0	9.80		ug/L		98	70 - 130
trans-1,2-Dichloroethene	10.0	9.57		ug/L		96	70 - 130
trans-1,3-Dichloropropene	10.0	10.0		ug/L		100	70 - 130
Trichloroethene	10.0	9.41		ug/L		94	70 - 130
Trichlorofluoromethane	10.0	10.4		ug/L		104	70 - 130
Vinyl chloride	10.0	10.6		ug/L		106	70 - 130
Xylenes, Total	20.0	19.5		ug/L		97	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*92*		*70 - 130*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-459472/1-A
Matrix: Water
Analysis Batch: 460354

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 459472

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		02/06/20 14:26	02/14/20 08:59	2

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 160-459472/2-A
Matrix: Water
Analysis Batch: 460354

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 459472

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	205		ug/L		103	80 - 120		

Lab Sample ID: 160-37161-2 MS
Matrix: Water
Analysis Batch: 460354

Client Sample ID: 41702-002
Prep Type: Total/NA
Prep Batch: 459472

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	208		ug/L		104	75 - 125		

Lab Sample ID: 160-37161-2 MSD
Matrix: Water
Analysis Batch: 460354

Client Sample ID: 41702-002
Prep Type: Total/NA
Prep Batch: 459472

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	206		ug/L		103	75 - 125	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-37161-1
SDG: 41702

GC/MS VOA

Analysis Batch: 459794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37161-1	41702-001	Total/NA	Water	524.2	
160-37161-2	41702-002	Total/NA	Water	524.2	
MB 160-459794/6	Method Blank	Total/NA	Water	524.2	
LCS 160-459794/4	Lab Control Sample	Total/NA	Water	524.2	

Analysis Batch: 459987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37161-1	41702-001	Total/NA	Water	524.2	
MB 160-459987/6	Method Blank	Total/NA	Water	524.2	
LCS 160-459987/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 459472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37161-2	41702-002	Total/NA	Water	3010A	
MB 160-459472/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-459472/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-37161-2 MS	41702-002	Total/NA	Water	3010A	
160-37161-2 MSD	41702-002	Total/NA	Water	3010A	

Analysis Batch: 460354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37161-2	41702-002	Total/NA	Water	6020A	459472
MB 160-459472/1-A	Method Blank	Total/NA	Water	6020A	459472
LCS 160-459472/2-A	Lab Control Sample	Total/NA	Water	6020A	459472
160-37161-2 MS	41702-002	Total/NA	Water	6020A	459472
160-37161-2 MSD	41702-002	Total/NA	Water	6020A	459472

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-37161-1
SDG: 41702

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	DCZ (70-130)	BFB (70-130)										
160-37161-1	41702-001	98	83										
160-37161-1	41702-001	99	85										
160-37161-2	41702-002	97	84										
LCS 160-459794/4	Lab Control Sample	91	87										
LCS 160-459987/4	Lab Control Sample	92	87										
MB 160-459794/6	Method Blank	97	84										
MB 160-459987/6	Method Blank	96	86										

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-37336-1
Laboratory Sample Delivery Group: 41738
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
3/12/2020 12:51:49 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Surrogate Summary 20

Job ID: 160-37336-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-37336-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 2/21/2020 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41738-001 (160-37336-1), 41738-002 (160-37336-2) and 41738-003 (160-37336-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 02/24/2020.

Job ID: 160-37336-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 41738-002 (160-37336-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 03/05/2020 and analyzed on 03/07/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

Analytical Batch 160-463471:
The initial calibration verification (ICV) result was above the upper control limit for Thallium. Thallium was not detected in the samples; therefore, the data was reported: (ICV 160-463471/7).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41738

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: K Mea	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments:

SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	2/19/20	1105	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1110	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		↓	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0	↓	0930	W	Trip Blank	40 ML	SC	3	HCL					X							

160-37336 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print K Mea 2/19/20	Print	Print
Signature 1330	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print L Harris 2.21.20	Print	Print
Signature 9:15	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For ____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-37336-1
SDG Number: 41738

Login Number: 37336
List Number: 1
Creator: Press, Nicholas B

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37336-1
SDG: 41738

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37336-1
SDG: 41738

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37336-1
SDG: 41738

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-37336-1	41738-001	Water	02/19/20 11:05	02/21/20 09:15	
160-37336-2	41738-002	Water	02/19/20 11:10	02/21/20 09:15	
160-37336-3	41738-003	Water	02/19/20 09:30	02/21/20 09:15	

Client Sample ID: 41738-001

Date Collected: 02/19/20 11:05
Date Received: 02/21/20 09:15

Lab Sample ID: 160-37336-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/24/20 16:28	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/24/20 16:28	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			02/24/20 16:28	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			02/24/20 16:28	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			02/24/20 16:28	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			02/24/20 16:28	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			02/24/20 16:28	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			02/24/20 16:28	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			02/24/20 16:28	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			02/24/20 16:28	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			02/24/20 16:28	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			02/24/20 16:28	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			02/24/20 16:28	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			02/24/20 16:28	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			02/24/20 16:28	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			02/24/20 16:28	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			02/24/20 16:28	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			02/24/20 16:28	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			02/24/20 16:28	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			02/24/20 16:28	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			02/24/20 16:28	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			02/24/20 16:28	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			02/24/20 16:28	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			02/24/20 16:28	1
Benzene	0.50	U	0.50	0.10	ug/L			02/24/20 16:28	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			02/24/20 16:28	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			02/24/20 16:28	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			02/24/20 16:28	1
Bromoform	0.50	U	0.50	0.25	ug/L			02/24/20 16:28	1
Bromomethane	0.50	U	0.50	0.38	ug/L			02/24/20 16:28	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			02/24/20 16:28	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			02/24/20 16:28	1
Chloroethane	0.50	U	0.50	0.18	ug/L			02/24/20 16:28	1
Chloroform	**0.73**		0.50	0.24	ug/L			02/24/20 16:28	1
Chloromethane	0.50	U	0.50	0.20	ug/L			02/24/20 16:28	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/24/20 16:28	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/24/20 16:28	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			02/24/20 16:28	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			02/24/20 16:28	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			02/24/20 16:28	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			02/24/20 16:28	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			02/24/20 16:28	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			02/24/20 16:28	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			02/24/20 16:28	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/24/20 16:28	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			02/24/20 16:28	1
Naphthalene	0.67	U	0.67	0.57	ug/L			02/24/20 16:28	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			02/24/20 16:28	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			02/24/20 16:28	1

Client Sample ID: 41738-001

Date Collected: 02/19/20 11:05
Date Received: 02/21/20 09:15

Lab Sample ID: 160-37336-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			02/24/20 16:28	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			02/24/20 16:28	1
Styrene	0.50	U	0.50	0.21	ug/L			02/24/20 16:28	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			02/24/20 16:28	1
Tetrachloroethene	**5.8**		0.50	0.19	ug/L			02/24/20 16:28	1
Toluene	0.50	U	0.50	0.19	ug/L			02/24/20 16:28	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/24/20 16:28	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			02/24/20 16:28	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			02/24/20 16:28	1
Trichlorofluoromethane	**0.39**	**J**	0.50	0.16	ug/L			02/24/20 16:28	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			02/24/20 16:28	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			02/24/20 16:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*		*02/24/20 16:28*	*1*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*02/24/20 16:28*	*1*

Client Sample ID: 41738-002

Date Collected: 02/19/20 11:10
Date Received: 02/21/20 09:15

Lab Sample ID: 160-37336-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/24/20 16:51	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/24/20 16:51	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			02/24/20 16:51	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			02/24/20 16:51	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			02/24/20 16:51	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			02/24/20 16:51	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			02/24/20 16:51	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			02/24/20 16:51	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			02/24/20 16:51	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			02/24/20 16:51	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			02/24/20 16:51	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			02/24/20 16:51	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			02/24/20 16:51	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			02/24/20 16:51	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			02/24/20 16:51	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			02/24/20 16:51	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			02/24/20 16:51	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			02/24/20 16:51	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			02/24/20 16:51	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			02/24/20 16:51	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			02/24/20 16:51	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			02/24/20 16:51	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			02/24/20 16:51	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			02/24/20 16:51	1
Benzene	0.50	U	0.50	0.10	ug/L			02/24/20 16:51	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			02/24/20 16:51	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			02/24/20 16:51	1

Client Sample ID: 41738-002

Date Collected: 02/19/20 11:10
Date Received: 02/21/20 09:15

Lab Sample ID: 160-37336-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			02/24/20 16:51	1
Bromoform	0.50	U	0.50	0.25	ug/L			02/24/20 16:51	1
Bromomethane	0.50	U	0.50	0.38	ug/L			02/24/20 16:51	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			02/24/20 16:51	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			02/24/20 16:51	1
Chloroethane	0.50	U	0.50	0.18	ug/L			02/24/20 16:51	1
Chloroform	0.50	U	0.50	0.24	ug/L			02/24/20 16:51	1
Chloromethane	0.50	U	0.50	0.20	ug/L			02/24/20 16:51	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/24/20 16:51	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/24/20 16:51	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			02/24/20 16:51	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			02/24/20 16:51	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			02/24/20 16:51	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			02/24/20 16:51	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			02/24/20 16:51	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			02/24/20 16:51	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			02/24/20 16:51	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/24/20 16:51	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			02/24/20 16:51	1
Naphthalene	0.67	U	0.67	0.57	ug/L			02/24/20 16:51	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			02/24/20 16:51	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			02/24/20 16:51	1
o-Xylene	0.50	U	0.50	0.29	ug/L			02/24/20 16:51	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			02/24/20 16:51	1
Styrene	0.50	U	0.50	0.21	ug/L			02/24/20 16:51	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			02/24/20 16:51	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			02/24/20 16:51	1
Toluene	0.50	U	0.50	0.19	ug/L			02/24/20 16:51	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/24/20 16:51	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			02/24/20 16:51	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			02/24/20 16:51	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			02/24/20 16:51	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			02/24/20 16:51	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			02/24/20 16:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*		*02/24/20 16:51*	*1*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*02/24/20 16:51*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		03/05/20 15:36	03/07/20 08:12	2

Client Sample ID: 41738-003

Date Collected: 02/19/20 09:30
Date Received: 02/21/20 09:15

Lab Sample ID: 160-37336-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/24/20 17:14	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37336-1
SDG: 41738

Client Sample ID: 41738-003
Date Collected: 02/19/20 09:30
Date Received: 02/21/20 09:15

Lab Sample ID: 160-37336-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/24/20 17:14	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			02/24/20 17:14	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			02/24/20 17:14	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			02/24/20 17:14	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			02/24/20 17:14	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			02/24/20 17:14	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			02/24/20 17:14	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			02/24/20 17:14	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			02/24/20 17:14	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			02/24/20 17:14	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			02/24/20 17:14	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			02/24/20 17:14	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			02/24/20 17:14	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			02/24/20 17:14	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			02/24/20 17:14	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			02/24/20 17:14	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			02/24/20 17:14	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			02/24/20 17:14	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			02/24/20 17:14	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			02/24/20 17:14	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			02/24/20 17:14	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			02/24/20 17:14	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			02/24/20 17:14	1
Benzene	0.50	U	0.50	0.10	ug/L			02/24/20 17:14	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			02/24/20 17:14	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			02/24/20 17:14	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			02/24/20 17:14	1
Bromoform	0.50	U	0.50	0.25	ug/L			02/24/20 17:14	1
Bromomethane	0.50	U	0.50	0.38	ug/L			02/24/20 17:14	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			02/24/20 17:14	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			02/24/20 17:14	1
Chloroethane	0.50	U	0.50	0.18	ug/L			02/24/20 17:14	1
Chloroform	0.50	U	0.50	0.24	ug/L			02/24/20 17:14	1
Chloromethane	0.50	U	0.50	0.20	ug/L			02/24/20 17:14	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/24/20 17:14	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/24/20 17:14	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			02/24/20 17:14	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			02/24/20 17:14	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			02/24/20 17:14	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			02/24/20 17:14	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			02/24/20 17:14	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			02/24/20 17:14	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			02/24/20 17:14	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/24/20 17:14	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			02/24/20 17:14	1
Naphthalene	0.67	U	0.67	0.57	ug/L			02/24/20 17:14	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			02/24/20 17:14	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			02/24/20 17:14	1
o-Xylene	0.50	U	0.50	0.29	ug/L			02/24/20 17:14	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37336-1
SDG: 41738

Client Sample ID: 41738-003
Date Collected: 02/19/20 09:30
Date Received: 02/21/20 09:15

Lab Sample ID: 160-37336-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			02/24/20 17:14	1
Styrene	0.50	U	0.50	0.21	ug/L			02/24/20 17:14	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			02/24/20 17:14	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			02/24/20 17:14	1
Toluene	0.50	U	0.50	0.19	ug/L			02/24/20 17:14	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/24/20 17:14	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			02/24/20 17:14	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			02/24/20 17:14	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			02/24/20 17:14	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			02/24/20 17:14	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			02/24/20 17:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*		*02/24/20 17:14*	*1*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*02/24/20 17:14*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-461598/6
Matrix: Water
Analysis Batch: 461598

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/24/20 13:05	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/24/20 13:05	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			02/24/20 13:05	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			02/24/20 13:05	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			02/24/20 13:05	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			02/24/20 13:05	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			02/24/20 13:05	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			02/24/20 13:05	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			02/24/20 13:05	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			02/24/20 13:05	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			02/24/20 13:05	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			02/24/20 13:05	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			02/24/20 13:05	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			02/24/20 13:05	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			02/24/20 13:05	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			02/24/20 13:05	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			02/24/20 13:05	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			02/24/20 13:05	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			02/24/20 13:05	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			02/24/20 13:05	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			02/24/20 13:05	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			02/24/20 13:05	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			02/24/20 13:05	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			02/24/20 13:05	1
Benzene	0.50	U	0.50	0.10	ug/L			02/24/20 13:05	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			02/24/20 13:05	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			02/24/20 13:05	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			02/24/20 13:05	1
Bromoform	0.50	U	0.50	0.25	ug/L			02/24/20 13:05	1
Bromomethane	0.50	U	0.50	0.38	ug/L			02/24/20 13:05	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			02/24/20 13:05	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			02/24/20 13:05	1
Chloroethane	0.50	U	0.50	0.18	ug/L			02/24/20 13:05	1
Chloroform	0.50	U	0.50	0.24	ug/L			02/24/20 13:05	1
Chloromethane	0.50	U	0.50	0.20	ug/L			02/24/20 13:05	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/24/20 13:05	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/24/20 13:05	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			02/24/20 13:05	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			02/24/20 13:05	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			02/24/20 13:05	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			02/24/20 13:05	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			02/24/20 13:05	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			02/24/20 13:05	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			02/24/20 13:05	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/24/20 13:05	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			02/24/20 13:05	1
Naphthalene	0.67	U	0.67	0.57	ug/L			02/24/20 13:05	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			02/24/20 13:05	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-461598/6
Matrix: Water
Analysis Batch: 461598

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			02/24/20 13:05	1
o-Xylene	0.50	U	0.50	0.29	ug/L			02/24/20 13:05	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			02/24/20 13:05	1
Styrene	0.50	U	0.50	0.21	ug/L			02/24/20 13:05	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			02/24/20 13:05	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			02/24/20 13:05	1
Toluene	0.50	U	0.50	0.19	ug/L			02/24/20 13:05	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			02/24/20 13:05	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			02/24/20 13:05	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			02/24/20 13:05	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			02/24/20 13:05	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			02/24/20 13:05	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			02/24/20 13:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*02/24/20 13:05*	*1*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*02/24/20 13:05*	*1*

Lab Sample ID: LCS 160-461598/4
Matrix: Water
Analysis Batch: 461598

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.8		ug/L		108	70 - 130
1,1,1-Trichloroethane	10.0	10.2		ug/L		102	70 - 130
1,1,2,2-Tetrachloroethane	10.0	12.7		ug/L		127	70 - 130
1,1,2-Trichloroethane	10.0	11.1		ug/L		111	70 - 130
1,1-Dichloroethane	10.0	11.0		ug/L		110	70 - 130
1,1-Dichloroethene	10.0	10.3		ug/L		103	70 - 130
1,1-Dichloropropene	10.0	10.4		ug/L		104	70 - 130
1,2,3-Trichlorobenzene	10.0	12.0		ug/L		120	70 - 130
1,2,3-Trichloropropane	10.0	12.8		ug/L		128	70 - 130
1,2,4-Trichlorobenzene	10.0	11.4		ug/L		114	70 - 130
1,2,4-Trimethylbenzene	10.0	10.9		ug/L		109	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	11.9		ug/L		119	70 - 130
1,2-Dibromoethane	10.0	11.0		ug/L		110	70 - 130
1,2-Dichlorobenzene	10.0	11.4		ug/L		114	70 - 130
1,2-Dichloroethane	10.0	10.8		ug/L		108	70 - 130
1,2-Dichloropropane	10.0	11.0		ug/L		110	70 - 130
1,3,5-Trimethylbenzene	10.0	10.6		ug/L		106	70 - 130
1,3-Dichlorobenzene	10.0	10.9		ug/L		109	70 - 130
1,3-Dichloropropane	10.0	11.1		ug/L		111	70 - 130
1,4-Dichlorobenzene	10.0	11.2		ug/L		112	70 - 130
2,2-Dichloropropane	10.0	10.4		ug/L		104	70 - 130
2-Chlorotoluene	10.0	11.4		ug/L		114	70 - 130
4-Chlorotoluene	10.0	11.0		ug/L		110	70 - 130
4-Isopropyltoluene	10.0	10.8		ug/L		108	70 - 130
Benzene	10.0	10.8		ug/L		108	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-461598/4
Matrix: Water
Analysis Batch: 461598

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.6		ug/L		106	70 - 130
Bromochloromethane	10.0	11.0		ug/L		110	70 - 130
Bromodichloromethane	10.0	10.7		ug/L		107	70 - 130
Bromoform	10.0	11.3		ug/L		113	70 - 130
Bromomethane	10.0	12.3		ug/L		123	70 - 130
Carbon tetrachloride	10.0	9.87		ug/L		99	70 - 130
Chlorobenzene	10.0	10.8		ug/L		108	70 - 130
Chloroethane	10.0	11.2		ug/L		112	70 - 130
Chloroform	10.0	10.7		ug/L		107	70 - 130
Chloromethane	10.0	11.8		ug/L		118	70 - 130
cis-1,2-Dichloroethene	10.0	10.7		ug/L		107	70 - 130
cis-1,3-Dichloropropene	10.0	11.0		ug/L		110	70 - 130
Dibromochloromethane	10.0	10.9		ug/L		109	70 - 130
Dibromomethane	10.0	11.0		ug/L		110	70 - 130
Dichlorodifluoromethane	10.0	10.8		ug/L		108	70 - 130
Ethylbenzene	10.0	10.8		ug/L		108	70 - 130
Hexachlorobutadiene	10.0	10.2		ug/L		102	70 - 130
Isopropylbenzene	10.0	10.6		ug/L		106	70 - 130
Methylene Chloride	10.0	10.8		ug/L		108	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.6		ug/L		106	70 - 130
m-Xylene & p-Xylene	10.0	10.4		ug/L		104	70 - 130
Naphthalene	10.0	12.1		ug/L		121	70 - 130
n-Butylbenzene	10.0	11.0		ug/L		110	70 - 130
N-Propylbenzene	10.0	10.8		ug/L		108	70 - 130
o-Xylene	10.0	10.5		ug/L		105	70 - 130
sec-Butylbenzene	10.0	10.9		ug/L		109	70 - 130
Styrene	10.0	11.0		ug/L		110	70 - 130
tert-Butylbenzene	10.0	10.5		ug/L		105	70 - 130
Tetrachloroethene	10.0	9.49		ug/L		95	70 - 130
Toluene	10.0	10.4		ug/L		104	70 - 130
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
trans-1,3-Dichloropropene	10.0	11.7		ug/L		117	70 - 130
Trichloroethene	10.0	10.4		ug/L		104	70 - 130
Trichlorofluoromethane	10.0	10.9		ug/L		109	70 - 130
Vinyl chloride	10.0	11.3		ug/L		113	70 - 130
Xylenes, Total	20.0	20.9		ug/L		105	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*95*		*70 - 130*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-463226/1-A
Matrix: Water
Analysis Batch: 463471

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 463226

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		03/05/20 15:36	03/07/20 07:59	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-463226/2-A
Matrix: Water
Analysis Batch: 463471

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 463226

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	209		ug/L		104	80 - 120		

Lab Sample ID: 160-37336-2 MS
Matrix: Water
Analysis Batch: 463471

Client Sample ID: 41738-002
Prep Type: Total/NA
Prep Batch: 463226

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	208		ug/L		104	75 - 125		

Lab Sample ID: 160-37336-2 MSD
Matrix: Water
Analysis Batch: 463471

Client Sample ID: 41738-002
Prep Type: Total/NA
Prep Batch: 463226

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	215		ug/L		107	75 - 125	3	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37336-1
SDG: 41738

GC/MS VOA

Analysis Batch: 461598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37336-1	41738-001	Total/NA	Water	524.2	
160-37336-2	41738-002	Total/NA	Water	524.2	
160-37336-3	41738-003	Total/NA	Water	524.2	
MB 160-461598/6	Method Blank	Total/NA	Water	524.2	
LCS 160-461598/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 463226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37336-2	41738-002	Total/NA	Water	3010A	
MB 160-463226/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-463226/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-37336-2 MS	41738-002	Total/NA	Water	3010A	
160-37336-2 MSD	41738-002	Total/NA	Water	3010A	

Analysis Batch: 463471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37336-2	41738-002	Total/NA	Water	6020A	463226
MB 160-463226/1-A	Method Blank	Total/NA	Water	6020A	463226
LCS 160-463226/2-A	Lab Control Sample	Total/NA	Water	6020A	463226
160-37336-2 MS	41738-002	Total/NA	Water	6020A	463226
160-37336-2 MSD	41738-002	Total/NA	Water	6020A	463226

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-37336-1
SDG: 41738

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		DCZ	BFB								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-37336-1	41738-001	100	90								
160-37336-2	41738-002	100	89								
160-37336-3	41738-003	101	89								
LCS 160-461598/4	Lab Control Sample	95	93								
MB 160-461598/6	Method Blank	99	89								

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-37510-1
Laboratory Sample Delivery Group: 41786
Client Project/Site: OU3-B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
3/20/2020 1:44:44 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-37510-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3-B96

Report Number: 160-37510-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 3/6/2020 10:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41786-001 (160-37510-1), 41786-002 (160-37510-2) and 41786-003 (160-37510-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 03/16/2020.

Job ID: 160-37510-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-464447:
The LCS spike recovery for Dichlorodifluoromethane is outside the lower QC limits. The data was reported with this narrative: 41786-001 (160-37510-1), 41786-002 (160-37510-2), 41786-003 (160-37510-3), (LCS 160-464447/4), and (MB 160-464447/6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 41786-002 (160-37510-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 03/12/2020 and analyzed on 03/18/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41786

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Mills	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	**Project Manager:**	**Field Engineer:**
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD Use TB-1 for CoC# 41787

Type UID	Smp	Coll	Sample Information: Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information: Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	3/3/20	1110	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1115	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1115	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X					

160-37510 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print J. Mills 3/4/20	Print FE	Print
Signature	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FE	Print Leonel Mazariegos 3/6/2020 10:40	Print
Signature	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☑ Disposal by Lab
☐ Archive For ____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☑ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-37510-1
SDG Number: 41786

Login Number: 37510
List Number: 1
Creator: Awalt, Jayna K

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3-B96

Job ID: 160-37510-1
SDG: 41786

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3-B96

Job ID: 160-37510-1
SDG: 41786

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3-B96

Job ID: 160-37510-1
SDG: 41786

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-37510-1	41786-001	Water	03/03/20 11:10	03/06/20 10:40	
160-37510-2	41786-002	Water	03/03/20 11:15	03/06/20 10:40	
160-37510-3	41786-003	Water	03/03/20 09:00	03/06/20 10:40	

Client Sample ID: 41786-001

Date Collected: 03/03/20 11:10
Date Received: 03/06/20 10:40

Lab Sample ID: 160-37510-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/16/20 18:47	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/16/20 18:47	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			03/16/20 18:47	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			03/16/20 18:47	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			03/16/20 18:47	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			03/16/20 18:47	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			03/16/20 18:47	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			03/16/20 18:47	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			03/16/20 18:47	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			03/16/20 18:47	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			03/16/20 18:47	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			03/16/20 18:47	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			03/16/20 18:47	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			03/16/20 18:47	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			03/16/20 18:47	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			03/16/20 18:47	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			03/16/20 18:47	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			03/16/20 18:47	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			03/16/20 18:47	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			03/16/20 18:47	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			03/16/20 18:47	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			03/16/20 18:47	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			03/16/20 18:47	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			03/16/20 18:47	1
Benzene	0.50	U	0.50	0.10	ug/L			03/16/20 18:47	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			03/16/20 18:47	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			03/16/20 18:47	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			03/16/20 18:47	1
Bromoform	0.50	U	0.50	0.25	ug/L			03/16/20 18:47	1
Bromomethane	0.50	U	0.50	0.38	ug/L			03/16/20 18:47	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			03/16/20 18:47	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			03/16/20 18:47	1
Chloroethane	0.50	U	0.50	0.18	ug/L			03/16/20 18:47	1
Chloroform	**0.45**	**J**	0.50	0.24	ug/L			03/16/20 18:47	1
Chloromethane	0.50	U	0.50	0.20	ug/L			03/16/20 18:47	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/16/20 18:47	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/16/20 18:47	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			03/16/20 18:47	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			03/16/20 18:47	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			03/16/20 18:47	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			03/16/20 18:47	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			03/16/20 18:47	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			03/16/20 18:47	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			03/16/20 18:47	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/16/20 18:47	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			03/16/20 18:47	1
Naphthalene	0.67	U	0.67	0.57	ug/L			03/16/20 18:47	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			03/16/20 18:47	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			03/16/20 18:47	1

Client Sample ID: 41786-001

Lab Sample ID: 160-37510-1

Date Collected: 03/03/20 11:10

Matrix: Water

Date Received: 03/06/20 10:40

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.29	ug/L			03/16/20 18:47	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			03/16/20 18:47	1
Styrene	0.50	U	0.50	0.21	ug/L			03/16/20 18:47	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			03/16/20 18:47	1
Tetrachloroethene	**3.3**		0.50	0.19	ug/L			03/16/20 18:47	1
Toluene	0.50	U	0.50	0.19	ug/L			03/16/20 18:47	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/16/20 18:47	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			03/16/20 18:47	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			03/16/20 18:47	1
Trichlorofluoromethane	**0.28**	**J**	0.50	0.16	ug/L			03/16/20 18:47	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			03/16/20 18:47	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			03/16/20 18:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*		*03/16/20 18:47*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*03/16/20 18:47*	*1*

Client Sample ID: 41786-002

Lab Sample ID: 160-37510-2

Date Collected: 03/03/20 11:15

Matrix: Water

Date Received: 03/06/20 10:40

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/16/20 19:09	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/16/20 19:09	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			03/16/20 19:09	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			03/16/20 19:09	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			03/16/20 19:09	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			03/16/20 19:09	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			03/16/20 19:09	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			03/16/20 19:09	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			03/16/20 19:09	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			03/16/20 19:09	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			03/16/20 19:09	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			03/16/20 19:09	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			03/16/20 19:09	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			03/16/20 19:09	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			03/16/20 19:09	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			03/16/20 19:09	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			03/16/20 19:09	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			03/16/20 19:09	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			03/16/20 19:09	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			03/16/20 19:09	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			03/16/20 19:09	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			03/16/20 19:09	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			03/16/20 19:09	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			03/16/20 19:09	1
Benzene	0.50	U	0.50	0.10	ug/L			03/16/20 19:09	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			03/16/20 19:09	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			03/16/20 19:09	1

Client Sample ID: 41786-002

Date Collected: 03/03/20 11:15
Date Received: 03/06/20 10:40

Lab Sample ID: 160-37510-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			03/16/20 19:09	1
Bromoform	0.50	U	0.50	0.25	ug/L			03/16/20 19:09	1
Bromomethane	0.50	U	0.50	0.38	ug/L			03/16/20 19:09	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			03/16/20 19:09	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			03/16/20 19:09	1
Chloroethane	0.50	U	0.50	0.18	ug/L			03/16/20 19:09	1
Chloroform	0.50	U	0.50	0.24	ug/L			03/16/20 19:09	1
Chloromethane	0.50	U	0.50	0.20	ug/L			03/16/20 19:09	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/16/20 19:09	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/16/20 19:09	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			03/16/20 19:09	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			03/16/20 19:09	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			03/16/20 19:09	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			03/16/20 19:09	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			03/16/20 19:09	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			03/16/20 19:09	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			03/16/20 19:09	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/16/20 19:09	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			03/16/20 19:09	1
Naphthalene	0.67	U	0.67	0.57	ug/L			03/16/20 19:09	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			03/16/20 19:09	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			03/16/20 19:09	1
o-Xylene	0.50	U	0.50	0.29	ug/L			03/16/20 19:09	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			03/16/20 19:09	1
Styrene	0.50	U	0.50	0.21	ug/L			03/16/20 19:09	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			03/16/20 19:09	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			03/16/20 19:09	1
Toluene	0.50	U	0.50	0.19	ug/L			03/16/20 19:09	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/16/20 19:09	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			03/16/20 19:09	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			03/16/20 19:09	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			03/16/20 19:09	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			03/16/20 19:09	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			03/16/20 19:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*03/16/20 19:09*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*03/16/20 19:09*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		03/12/20 15:01	03/18/20 07:14	2

Client Sample ID: 41786-003

Date Collected: 03/03/20 09:00
Date Received: 03/06/20 10:40

Lab Sample ID: 160-37510-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/16/20 19:32	1

Client: Brookhaven National Labs
Project/Site: OU3-B96

Job ID: 160-37510-1
SDG: 41786

Client Sample ID: 41786-003
Date Collected: 03/03/20 09:00
Date Received: 03/06/20 10:40

Lab Sample ID: 160-37510-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/16/20 19:32	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			03/16/20 19:32	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			03/16/20 19:32	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			03/16/20 19:32	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			03/16/20 19:32	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			03/16/20 19:32	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			03/16/20 19:32	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			03/16/20 19:32	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			03/16/20 19:32	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			03/16/20 19:32	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			03/16/20 19:32	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			03/16/20 19:32	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			03/16/20 19:32	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			03/16/20 19:32	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			03/16/20 19:32	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			03/16/20 19:32	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			03/16/20 19:32	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			03/16/20 19:32	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			03/16/20 19:32	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			03/16/20 19:32	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			03/16/20 19:32	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			03/16/20 19:32	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			03/16/20 19:32	1
Benzene	0.50	U	0.50	0.10	ug/L			03/16/20 19:32	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			03/16/20 19:32	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			03/16/20 19:32	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			03/16/20 19:32	1
Bromoform	0.50	U	0.50	0.25	ug/L			03/16/20 19:32	1
Bromomethane	0.50	U	0.50	0.38	ug/L			03/16/20 19:32	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			03/16/20 19:32	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			03/16/20 19:32	1
Chloroethane	0.50	U	0.50	0.18	ug/L			03/16/20 19:32	1
Chloroform	0.50	U	0.50	0.24	ug/L			03/16/20 19:32	1
Chloromethane	0.50	U	0.50	0.20	ug/L			03/16/20 19:32	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/16/20 19:32	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/16/20 19:32	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			03/16/20 19:32	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			03/16/20 19:32	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			03/16/20 19:32	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			03/16/20 19:32	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			03/16/20 19:32	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			03/16/20 19:32	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			03/16/20 19:32	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/16/20 19:32	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			03/16/20 19:32	1
Naphthalene	0.67	U	0.67	0.57	ug/L			03/16/20 19:32	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			03/16/20 19:32	1
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			03/16/20 19:32	1
o-Xylene	0.50	U	0.50	0.29	ug/L			03/16/20 19:32	1

Client: Brookhaven National Labs
Project/Site: OU3-B96

Job ID: 160-37510-1
SDG: 41786

Client Sample ID: 41786-003
Date Collected: 03/03/20 09:00
Date Received: 03/06/20 10:40

Lab Sample ID: 160-37510-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			03/16/20 19:32	1
Styrene	0.50	U	0.50	0.21	ug/L			03/16/20 19:32	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			03/16/20 19:32	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			03/16/20 19:32	1
Toluene	0.50	U	0.50	0.19	ug/L			03/16/20 19:32	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/16/20 19:32	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			03/16/20 19:32	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			03/16/20 19:32	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			03/16/20 19:32	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			03/16/20 19:32	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			03/16/20 19:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*03/16/20 19:32*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*03/16/20 19:32*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-464447/6
Matrix: Water
Analysis Batch: 464447

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/16/20 13:26	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/16/20 13:26	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.22	ug/L			03/16/20 13:26	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			03/16/20 13:26	1
1,1-Dichloroethane	0.50	U	0.50	0.093	ug/L			03/16/20 13:26	1
1,1-Dichloroethene	0.50	U	0.50	0.12	ug/L			03/16/20 13:26	1
1,1-Dichloropropene	0.50	U	0.50	0.11	ug/L			03/16/20 13:26	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.58	ug/L			03/16/20 13:26	1
1,2,3-Trichloropropane	0.50	U	0.50	0.40	ug/L			03/16/20 13:26	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			03/16/20 13:26	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.25	ug/L			03/16/20 13:26	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.62	ug/L			03/16/20 13:26	1
1,2-Dibromoethane	0.50	U	0.50	0.20	ug/L			03/16/20 13:26	1
1,2-Dichlorobenzene	0.50	U	0.50	0.29	ug/L			03/16/20 13:26	1
1,2-Dichloroethane	0.50	U	0.50	0.22	ug/L			03/16/20 13:26	1
1,2-Dichloropropane	0.50	U	0.50	0.10	ug/L			03/16/20 13:26	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.23	ug/L			03/16/20 13:26	1
1,3-Dichlorobenzene	0.50	U	0.50	0.19	ug/L			03/16/20 13:26	1
1,3-Dichloropropane	0.50	U	0.50	0.12	ug/L			03/16/20 13:26	1
1,4-Dichlorobenzene	0.50	U	0.50	0.30	ug/L			03/16/20 13:26	1
2,2-Dichloropropane	0.50	U	0.50	0.18	ug/L			03/16/20 13:26	1
2-Chlorotoluene	0.50	U	0.50	0.18	ug/L			03/16/20 13:26	1
4-Chlorotoluene	0.50	U	0.50	0.19	ug/L			03/16/20 13:26	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			03/16/20 13:26	1
Benzene	0.50	U	0.50	0.10	ug/L			03/16/20 13:26	1
Bromobenzene	0.50	U	0.50	0.12	ug/L			03/16/20 13:26	1
Bromochloromethane	0.50	U	0.50	0.14	ug/L			03/16/20 13:26	1
Bromodichloromethane	0.50	U	0.50	0.14	ug/L			03/16/20 13:26	1
Bromoform	0.50	U	0.50	0.25	ug/L			03/16/20 13:26	1
Bromomethane	0.50	U	0.50	0.38	ug/L			03/16/20 13:26	1
Carbon tetrachloride	0.50	U	0.50	0.18	ug/L			03/16/20 13:26	1
Chlorobenzene	0.50	U	0.50	0.11	ug/L			03/16/20 13:26	1
Chloroethane	0.50	U	0.50	0.18	ug/L			03/16/20 13:26	1
Chloroform	0.50	U	0.50	0.24	ug/L			03/16/20 13:26	1
Chloromethane	0.50	U	0.50	0.20	ug/L			03/16/20 13:26	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/16/20 13:26	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/16/20 13:26	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			03/16/20 13:26	1
Dibromomethane	0.50	U	0.50	0.28	ug/L			03/16/20 13:26	1
Dichlorodifluoromethane	0.50	U	0.50	0.14	ug/L			03/16/20 13:26	1
Ethylbenzene	0.50	U	0.50	0.13	ug/L			03/16/20 13:26	1
Hexachlorobutadiene	0.50	U	0.50	0.29	ug/L			03/16/20 13:26	1
Isopropylbenzene	0.50	U	0.50	0.20	ug/L			03/16/20 13:26	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			03/16/20 13:26	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/16/20 13:26	1
m-Xylene & p-Xylene	1.0	U	1.0	0.16	ug/L			03/16/20 13:26	1
Naphthalene	0.67	U	0.67	0.57	ug/L			03/16/20 13:26	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			03/16/20 13:26	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-464447/6
Matrix: Water
Analysis Batch: 464447

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.24	ug/L			03/16/20 13:26	1
o-Xylene	0.50	U	0.50	0.29	ug/L			03/16/20 13:26	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			03/16/20 13:26	1
Styrene	0.50	U	0.50	0.21	ug/L			03/16/20 13:26	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			03/16/20 13:26	1
Tetrachloroethene	0.50	U	0.50	0.19	ug/L			03/16/20 13:26	1
Toluene	0.50	U	0.50	0.19	ug/L			03/16/20 13:26	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.10	ug/L			03/16/20 13:26	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			03/16/20 13:26	1
Trichloroethene	0.50	U	0.50	0.25	ug/L			03/16/20 13:26	1
Trichlorofluoromethane	0.50	U	0.50	0.16	ug/L			03/16/20 13:26	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			03/16/20 13:26	1
Xylenes, Total	3.0	U	3.0	0.45	ug/L			03/16/20 13:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*03/16/20 13:26*	*1*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*		*03/16/20 13:26*	*1*

Lab Sample ID: LCS 160-464447/4
Matrix: Water
Analysis Batch: 464447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.5		ug/L		105	70 - 130
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.2		ug/L		102	70 - 130
1,1,2-Trichloroethane	10.0	10.2		ug/L		102	70 - 130
1,1-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethene	10.0	9.84		ug/L		98	70 - 130
1,1-Dichloropropene	10.0	10.1		ug/L		101	70 - 130
1,2,3-Trichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,2,3-Trichloropropane	10.0	10.5		ug/L		105	70 - 130
1,2,4-Trichlorobenzene	10.0	10.7		ug/L		107	70 - 130
1,2,4-Trimethylbenzene	10.0	10.4		ug/L		104	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	10.3		ug/L		103	70 - 130
1,2-Dibromoethane	10.0	10.1		ug/L		101	70 - 130
1,2-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,2-Dichloroethane	10.0	10.0		ug/L		100	70 - 130
1,2-Dichloropropane	10.0	10.2		ug/L		102	70 - 130
1,3,5-Trimethylbenzene	10.0	10.3		ug/L		103	70 - 130
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,3-Dichloropropane	10.0	9.92		ug/L		99	70 - 130
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
2,2-Dichloropropane	10.0	10.6		ug/L		106	70 - 130
2-Chlorotoluene	10.0	10.2		ug/L		102	70 - 130
4-Chlorotoluene	10.0	10.2		ug/L		102	70 - 130
4-Isopropyltoluene	10.0	10.4		ug/L		104	70 - 130
Benzene	10.0	10.1		ug/L		101	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-464447/4
Matrix: Water
Analysis Batch: 464447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.0		ug/L		100	70 - 130
Bromochloromethane	10.0	10.4		ug/L		104	70 - 130
Bromodichloromethane	10.0	10.5		ug/L		105	70 - 130
Bromoform	10.0	11.1		ug/L		111	70 - 130
Bromomethane	10.0	9.59		ug/L		96	70 - 130
Carbon tetrachloride	10.0	10.5		ug/L		105	70 - 130
Chlorobenzene	10.0	10.1		ug/L		101	70 - 130
Chloroethane	10.0	9.65		ug/L		97	70 - 130
Chloroform	10.0	10.3		ug/L		103	70 - 130
Chloromethane	10.0	8.04		ug/L		80	70 - 130
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	70 - 130
cis-1,3-Dichloropropene	10.0	10.7		ug/L		107	70 - 130
Dibromochloromethane	10.0	10.8		ug/L		108	70 - 130
Dibromomethane	10.0	10.1		ug/L		101	70 - 130
Dichlorodifluoromethane	10.0	5.99		ug/L		60	70 - 130
Ethylbenzene	10.0	10.0		ug/L		100	70 - 130
Hexachlorobutadiene	10.0	10.3		ug/L		103	70 - 130
Isopropylbenzene	10.0	10.2		ug/L		102	70 - 130
Methylene Chloride	10.0	10.1		ug/L		101	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.92		ug/L		99	70 - 130
m-Xylene & p-Xylene	10.0	10.1		ug/L		101	70 - 130
Naphthalene	10.0	10.1		ug/L		101	70 - 130
n-Butylbenzene	10.0	10.5		ug/L		105	70 - 130
N-Propylbenzene	10.0	10.2		ug/L		102	70 - 130
o-Xylene	10.0	10.1		ug/L		101	70 - 130
sec-Butylbenzene	10.0	10.3		ug/L		103	70 - 130
Styrene	10.0	10.3		ug/L		103	70 - 130
tert-Butylbenzene	10.0	10.1		ug/L		101	70 - 130
Tetrachloroethene	10.0	10.0		ug/L		100	70 - 130
Toluene	10.0	10.2		ug/L		102	70 - 130
trans-1,2-Dichloroethene	10.0	9.97		ug/L		100	70 - 130
trans-1,3-Dichloropropene	10.0	10.9		ug/L		109	70 - 130
Trichloroethene	10.0	10.2		ug/L		102	70 - 130
Trichlorofluoromethane	10.0	9.90		ug/L		99	70 - 130
Vinyl chloride	10.0	9.16		ug/L		92	70 - 130
Xylenes, Total	20.0	20.2		ug/L		101	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-464177/1-A
Matrix: Water
Analysis Batch: 464941

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 464177

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		03/12/20 15:01	03/18/20 03:38	2

QC Sample Results

Client: Brookhaven National Labs
Project/Site: OU3-B96

Job ID: 160-37510-1
SDG: 41786

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 160-464177/2-A
Matrix: Water
Analysis Batch: 464941

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 464177

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	200	202		ug/L		101	80 - 120

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3-B96

Job ID: 160-37510-1
SDG: 41786

GC/MS VOA

Analysis Batch: 464447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37510-1	41786-001	Total/NA	Water	524.2	
160-37510-2	41786-002	Total/NA	Water	524.2	
160-37510-3	41786-003	Total/NA	Water	524.2	
MB 160-464447/6	Method Blank	Total/NA	Water	524.2	
LCS 160-464447/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 464177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37510-2	41786-002	Total/NA	Water	3010A	
MB 160-464177/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-464177/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 464941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37510-2	41786-002	Total/NA	Water	6020A	464177
MB 160-464177/1-A	Method Blank	Total/NA	Water	6020A	464177
LCS 160-464177/2-A	Lab Control Sample	Total/NA	Water	6020A	464177

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3-B96

Job ID: 160-37510-1
SDG: 41786

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	DCZ (70-130)	BFB (70-130)								
160-37510-1	41786-001	105	102								
160-37510-2	41786-002	106	100								
160-37510-3	41786-003	106	103								
LCS 160-464447/4	Lab Control Sample	105	103								
MB 160-464447/6	Method Blank	106	105								

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4
BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-37635-2
Laboratory Sample Delivery Group: 41830
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
4/6/2020 3:44:34 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-37635-2

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-37635-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 3/19/2020 8:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.4° C.

METALS (ICPMS)

Sample 41830-002 (160-37635-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 04/01/2020 and analyzed on 04/02/2020.

Job ID: 160-37635-2 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

Preparation Batch 160-466465, Analytical Batch 160-466599:
The following samples were diluted due to the abundance of non-target analytes: b(580-93718-F-1-A), (580-93718-F-1-B MS), (580-93718-F-1-C MSD), and (580-93718-F-1-A SD). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-37635 Chain of Custody

Chain of Custody No. 41830

Requires EDD ☑

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Mill	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD USE TB-1 from CoC# 41829

Type UID	Smp	Coll	Sample Information Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information Name/Description	Cont. Vol/Units	Cont. Type	# of Cont	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	3/17/20	1330	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1335	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1335	W	RTW-1 Effluent	250 ML	P	1	Hno3									X	
~~003~~	~~E~~	~~G~~	TB-1	0			W	Trip Blank	~~40 ML~~	~~SC~~	~~3~~	~~HCL~~					X					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Mill 3/18/20 1400	Print FE	Print
Signature	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print FE	Print Micha Korrinhizer 3/19/2020	Print
Signature	Signature michakorrinhizer 08:55	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☑ Disposal by Lab
☐ Archive For ____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☑ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-37635-2
SDG Number: 41830

Login Number: 37635
List Number: 1
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37635-2
SDG: 41830

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37635-2
SDG: 41830

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37635-2
SDG: 41830

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-37635-2	41830-002	Water	03/17/20 13:35	03/19/20 08:55	

Client Sample Results

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37635-2
SDG: 41830

Client Sample ID: 41830-002
Date Collected: 03/17/20 13:35
Date Received: 03/19/20 08:55

Lab Sample ID: 160-37635-2
Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		04/01/20 12:43	04/02/20 17:16	2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-466465/1-A
Matrix: Water
Analysis Batch: 466599

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 466465

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		04/01/20 12:43	04/02/20 17:03	2

Lab Sample ID: LCS 160-466465/2-A
Matrix: Water
Analysis Batch: 466599

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 466465

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	205		ug/L		102	80 - 120		

Lab Sample ID: 580-93718-F-1-B MS
Matrix: Water
Analysis Batch: 466599

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 466465

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	10	U	200	186		ug/L		93	75 - 125		

Lab Sample ID: 580-93718-F-1-C MSD
Matrix: Water
Analysis Batch: 466599

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 466465

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	10	U	200	187		ug/L		94	75 - 125	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37635-2
SDG: 41830

Metals

Prep Batch: 466465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37635-2	41830-002	Total/NA	Water	3010A	
MB 160-466465/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-466465/2-A	Lab Control Sample	Total/NA	Water	3010A	
580-93718-F-1-B MS	Matrix Spike	Total/NA	Water	3010A	
580-93718-F-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 466599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37635-2	41830-002	Total/NA	Water	6020A	466465
MB 160-466465/1-A	Method Blank	Total/NA	Water	6020A	466465
LCS 160-466465/2-A	Lab Control Sample	Total/NA	Water	6020A	466465
580-93718-F-1-B MS	Matrix Spike	Total/NA	Water	6020A	466465
580-93718-F-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	466465

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-37756-1
Laboratory Sample Delivery Group: 41858
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
4/24/2020 4:27:25 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-37756-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-37756-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 4/7/2020 8:26 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41858-001 (160-37756-1), 41858-002 (160-37756-2), 41858-003 (160-37756-3), 41858-004 (160-37756-4), 41858-005 (160-37756-5), 41858-006 (160-37756-6) and 41858-007 (160-37756-7) were analyzed for drinking water volatiles (GC-MS) in accordance

Job ID: 160-37756-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

with EPA Method 524.2. The samples were analyzed on 04/15/2020.

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Samples logged in for method 524.2 were analyzed using the laboratory's method 8260C (low Level). The preparation, RL's, and MDL's for both methods are the same except for the surrogate spike levels. The 8260 levels are 10 ppb, where the 524.2 levels are 5 ppb. Laboratory QC (CCV and LCS) met the criteria set for method 524.2. The client was contacted and the lab was instructed to report the data with narrative comments: 41858-001 (160-37756-1), 41858-002 (160-37756-2), 41858-003 (160-37756-3), 41858-004 (160-37756-4), 41858-005 (160-37756-5), 41858-006 (160-37756-6), and 41858-007 (160-37756-7).

Analytical Batch 160-468434:
The continuing calibration verification (CCV) recovered above the upper control limit for Chloromethane, Bromoform, and Chlorodibromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data was reported: 41858-001 (160-37756-1), 41858-002 (160-37756-2), 41858-003 (160-37756-3), 41858-004 (160-37756-4), 41858-005 (160-37756-5), 41858-006 (160-37756-6), 41858-007 (160-37756-7), and (CCVIS 160-468434/3).

The continuing calibration verification (CCV) recovered outside acceptance criteria, low biased, for Trichlorofluoromethane. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data was reported.

The following compounds did not meet relative response factor limits in the continuing calibration verification (CCV): 1,2-Dibromo-3-Chloropropane. A low level CCV was analyzed and the affected analyte was detected. Target analytes recovering above the reporting limit were qualified and reported.

The laboratory control sample (LCS) recovered outside control limits for the following analytes: Chlorodibromomethane and Bromoform. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data was reported.

The reporting limit provided for the following analytes falls below the laboratory's lowest calibration standard: 1,2-Dibromo-3-Chloropropane and Bromoform. Results reported below the lowest calibration standard are considered estimated values.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 41858-002 (160-37756-2) was analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 04/13/2020 and analyzed on 04/15/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

Job ID: 160-37756-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Preparation Batch 160-467528, Analytical Batch 160-467815:
The following samples were diluted due to the abundance of non-target analytes. Elevated reporting limits (RLs) are provided: (580-93866-K-1-A), (580-93866-K-1-B MS), (580-93866-K-1-C MSD), and (580-93866-K-1-A SD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

Requires EDD ☒

160-37756 Chain of Custody

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41858

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Miller	Phone: 314-298-8566
2		Email/Fax:
Project Name:	**Project Manager:**	**Field Engineer:**
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	4/3/20	1253	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1255	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1255	W	RTW-1 Effluent	250 ML	p	1	Hno3										X		
003	E	G	095-153	0		1310	W	RTW-2 Influent	40 ML	SC	3	HCL					X							
004	E	G	095-155	0		1325	W	RTW-3 Influent	40 ML	SC	3	HCL					X							
005	E	G	095-157	0		1335	W	RTW-4 Influent	40 ML	SC	3	HCL					X							
006	E	G	TB-1	0		1200	W	Trip Blank	40 ML	SC	3	HCL					X							
007	E	G	095-154	0		1312	W	RTW-2 Effluent	40ML	SC	3	HCL					X							

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print JIM MILLER 1000	Print FED EX	Print
Signature 4/6/20	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print Leone Mazzacavos 4/7/2020	Print
Signature	Signature 08:26	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-37756-1
SDG Number: 41858

Login Number: 37756
List Number: 1
Creator: Vania, Ivan H

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37756-1
SDG: 41858

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37756-1
SDG: 41858

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37756-1
SDG: 41858

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-37756-1	41858-001	Water	04/03/20 12:53	04/07/20 08:26	
160-37756-2	41858-002	Water	04/03/20 12:55	04/07/20 08:26	
160-37756-3	41858-003	Water	04/03/20 13:10	04/07/20 08:26	
160-37756-4	41858-004	Water	04/03/20 13:25	04/07/20 08:26	
160-37756-5	41858-005	Water	04/03/20 13:35	04/07/20 08:26	
160-37756-6	41858-006	Water	04/03/20 12:00	04/07/20 08:26	
160-37756-7	41858-007	Water	04/03/20 13:12	04/07/20 08:26	

Client Sample ID: 41858-001

Date Collected: 04/03/20 12:53
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			04/15/20 01:47	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 01:47	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			04/15/20 01:47	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 01:47	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 01:47	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			04/15/20 01:47	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			04/15/20 01:47	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			04/15/20 01:47	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			04/15/20 01:47	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			04/15/20 01:47	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			04/15/20 01:47	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			04/15/20 01:47	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			04/15/20 01:47	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			04/15/20 01:47	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			04/15/20 01:47	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			04/15/20 01:47	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			04/15/20 01:47	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			04/15/20 01:47	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/15/20 01:47	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			04/15/20 01:47	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			04/15/20 01:47	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			04/15/20 01:47	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			04/15/20 01:47	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/15/20 01:47	1
Benzene	0.50	U	0.50	0.26	ug/L			04/15/20 01:47	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			04/15/20 01:47	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			04/15/20 01:47	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			04/15/20 01:47	1
Bromoform	0.50	U	0.50	0.32	ug/L			04/15/20 01:47	1
Bromomethane	0.57	U	0.57	0.57	ug/L			04/15/20 01:47	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			04/15/20 01:47	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			04/15/20 01:47	1
Chloroethane	0.50	U	0.50	0.32	ug/L			04/15/20 01:47	1
Chloroform	**0.77**		0.50	0.24	ug/L			04/15/20 01:47	1
Chloromethane	0.50	U	0.50	0.32	ug/L			04/15/20 01:47	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			04/15/20 01:47	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			04/15/20 01:47	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/15/20 01:47	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			04/15/20 01:47	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			04/15/20 01:47	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			04/15/20 01:47	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			04/15/20 01:47	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			04/15/20 01:47	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/15/20 01:47	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			04/15/20 01:47	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			04/15/20 01:47	1
Naphthalene	0.67	U	0.67	0.57	ug/L			04/15/20 01:47	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/15/20 01:47	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			04/15/20 01:47	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37756-1
SDG: 41858

Client Sample ID: 41858-001

Date Collected: 04/03/20 12:53
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			04/15/20 01:47	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/15/20 01:47	1
Styrene	0.50	U	0.50	0.35	ug/L			04/15/20 01:47	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/15/20 01:47	1
Tetrachloroethene	**5.0**		0.50	0.31	ug/L			04/15/20 01:47	1
Toluene	0.50	U	0.50	0.24	ug/L			04/15/20 01:47	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			04/15/20 01:47	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/15/20 01:47	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			04/15/20 01:47	1
Trichlorofluoromethane	**0.60**		0.50	0.26	ug/L			04/15/20 01:47	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/15/20 01:47	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			04/15/20 01:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*		*04/15/20 01:47*	*1*

Client Sample ID: 41858-002

Date Collected: 04/03/20 12:55
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			04/15/20 02:10	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 02:10	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			04/15/20 02:10	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 02:10	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 02:10	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			04/15/20 02:10	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			04/15/20 02:10	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			04/15/20 02:10	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			04/15/20 02:10	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			04/15/20 02:10	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			04/15/20 02:10	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			04/15/20 02:10	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			04/15/20 02:10	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			04/15/20 02:10	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			04/15/20 02:10	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			04/15/20 02:10	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			04/15/20 02:10	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			04/15/20 02:10	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/15/20 02:10	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			04/15/20 02:10	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			04/15/20 02:10	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			04/15/20 02:10	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			04/15/20 02:10	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/15/20 02:10	1
Benzene	0.50	U	0.50	0.26	ug/L			04/15/20 02:10	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			04/15/20 02:10	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			04/15/20 02:10	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			04/15/20 02:10	1

Client Sample ID: 41858-002

Date Collected: 04/03/20 12:55
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.32	ug/L			04/15/20 02:10	1
Bromomethane	0.57	U	0.57	0.57	ug/L			04/15/20 02:10	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			04/15/20 02:10	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			04/15/20 02:10	1
Chloroethane	0.50	U	0.50	0.32	ug/L			04/15/20 02:10	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/15/20 02:10	1
Chloromethane	0.50	U	0.50	0.32	ug/L			04/15/20 02:10	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			04/15/20 02:10	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			04/15/20 02:10	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/15/20 02:10	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			04/15/20 02:10	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			04/15/20 02:10	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			04/15/20 02:10	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			04/15/20 02:10	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			04/15/20 02:10	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/15/20 02:10	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			04/15/20 02:10	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			04/15/20 02:10	1
Naphthalene	0.67	U	0.67	0.57	ug/L			04/15/20 02:10	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/15/20 02:10	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			04/15/20 02:10	1
o-Xylene	0.50	U	0.50	0.43	ug/L			04/15/20 02:10	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/15/20 02:10	1
Styrene	0.50	U	0.50	0.35	ug/L			04/15/20 02:10	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/15/20 02:10	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			04/15/20 02:10	1
Toluene	0.50	U	0.50	0.24	ug/L			04/15/20 02:10	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			04/15/20 02:10	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/15/20 02:10	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			04/15/20 02:10	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			04/15/20 02:10	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/15/20 02:10	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			04/15/20 02:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*		*04/15/20 02:10*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		04/13/20 13:48	04/15/20 00:44	2

Client Sample ID: 41858-003

Date Collected: 04/03/20 13:10
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			04/15/20 02:32	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 02:32	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			04/15/20 02:32	1

Client Sample ID: 41858-003

Date Collected: 04/03/20 13:10
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 02:32	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 02:32	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			04/15/20 02:32	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			04/15/20 02:32	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			04/15/20 02:32	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			04/15/20 02:32	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			04/15/20 02:32	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			04/15/20 02:32	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			04/15/20 02:32	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			04/15/20 02:32	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			04/15/20 02:32	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			04/15/20 02:32	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			04/15/20 02:32	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			04/15/20 02:32	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			04/15/20 02:32	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/15/20 02:32	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			04/15/20 02:32	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			04/15/20 02:32	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			04/15/20 02:32	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			04/15/20 02:32	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/15/20 02:32	1
Benzene	0.50	U	0.50	0.26	ug/L			04/15/20 02:32	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			04/15/20 02:32	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			04/15/20 02:32	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			04/15/20 02:32	1
Bromoform	0.50	U	0.50	0.32	ug/L			04/15/20 02:32	1
Bromomethane	0.57	U	0.57	0.57	ug/L			04/15/20 02:32	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			04/15/20 02:32	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			04/15/20 02:32	1
Chloroethane	0.50	U	0.50	0.32	ug/L			04/15/20 02:32	1
Chloroform	**0.26**	**J**	0.50	0.24	ug/L			04/15/20 02:32	1
Chloromethane	0.50	U	0.50	0.32	ug/L			04/15/20 02:32	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			04/15/20 02:32	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			04/15/20 02:32	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/15/20 02:32	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			04/15/20 02:32	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			04/15/20 02:32	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			04/15/20 02:32	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			04/15/20 02:32	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			04/15/20 02:32	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/15/20 02:32	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			04/15/20 02:32	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			04/15/20 02:32	1
Naphthalene	0.67	U	0.67	0.57	ug/L			04/15/20 02:32	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/15/20 02:32	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			04/15/20 02:32	1
o-Xylene	0.50	U	0.50	0.43	ug/L			04/15/20 02:32	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/15/20 02:32	1
Styrene	0.50	U	0.50	0.35	ug/L			04/15/20 02:32	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37756-1
SDG: 41858

Client Sample ID: 41858-003

Date Collected: 04/03/20 13:10
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/15/20 02:32	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			04/15/20 02:32	1
Toluene	0.50	U	0.50	0.24	ug/L			04/15/20 02:32	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			04/15/20 02:32	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/15/20 02:32	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			04/15/20 02:32	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			04/15/20 02:32	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/15/20 02:32	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			04/15/20 02:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*		*04/15/20 02:32*	*1*

Client Sample ID: 41858-004

Date Collected: 04/03/20 13:25
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			04/15/20 02:54	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 02:54	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			04/15/20 02:54	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 02:54	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 02:54	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			04/15/20 02:54	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			04/15/20 02:54	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			04/15/20 02:54	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			04/15/20 02:54	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			04/15/20 02:54	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			04/15/20 02:54	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			04/15/20 02:54	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			04/15/20 02:54	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			04/15/20 02:54	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			04/15/20 02:54	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			04/15/20 02:54	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			04/15/20 02:54	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			04/15/20 02:54	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/15/20 02:54	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			04/15/20 02:54	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			04/15/20 02:54	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			04/15/20 02:54	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			04/15/20 02:54	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/15/20 02:54	1
Benzene	0.50	U	0.50	0.26	ug/L			04/15/20 02:54	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			04/15/20 02:54	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			04/15/20 02:54	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			04/15/20 02:54	1
Bromoform	0.50	U	0.50	0.32	ug/L			04/15/20 02:54	1
Bromomethane	0.57	U	0.57	0.57	ug/L			04/15/20 02:54	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			04/15/20 02:54	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37756-1
SDG: 41858

Client Sample ID: 41858-004

Date Collected: 04/03/20 13:25
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	0.50	U	0.50	0.28	ug/L			04/15/20 02:54	1
Chloroethane	0.50	U	0.50	0.32	ug/L			04/15/20 02:54	1
Chloroform	**0.53**		0.50	0.24	ug/L			04/15/20 02:54	1
Chloromethane	0.50	U	0.50	0.32	ug/L			04/15/20 02:54	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			04/15/20 02:54	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			04/15/20 02:54	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/15/20 02:54	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			04/15/20 02:54	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			04/15/20 02:54	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			04/15/20 02:54	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			04/15/20 02:54	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			04/15/20 02:54	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/15/20 02:54	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			04/15/20 02:54	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			04/15/20 02:54	1
Naphthalene	0.67	U	0.67	0.57	ug/L			04/15/20 02:54	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/15/20 02:54	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			04/15/20 02:54	1
o-Xylene	0.50	U	0.50	0.43	ug/L			04/15/20 02:54	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/15/20 02:54	1
Styrene	0.50	U	0.50	0.35	ug/L			04/15/20 02:54	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/15/20 02:54	1
Tetrachloroethene	**0.32**	**J**	0.50	0.31	ug/L			04/15/20 02:54	1
Toluene	0.50	U	0.50	0.24	ug/L			04/15/20 02:54	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			04/15/20 02:54	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/15/20 02:54	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			04/15/20 02:54	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			04/15/20 02:54	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/15/20 02:54	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			04/15/20 02:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*		*04/15/20 02:54*	*1*

Client Sample ID: 41858-005

Date Collected: 04/03/20 13:35
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			04/15/20 03:16	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 03:16	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			04/15/20 03:16	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 03:16	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 03:16	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			04/15/20 03:16	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			04/15/20 03:16	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			04/15/20 03:16	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			04/15/20 03:16	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			04/15/20 03:16	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37756-1
SDG: 41858

Client Sample ID: 41858-005
Date Collected: 04/03/20 13:35
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			04/15/20 03:16	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			04/15/20 03:16	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			04/15/20 03:16	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			04/15/20 03:16	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			04/15/20 03:16	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			04/15/20 03:16	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			04/15/20 03:16	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			04/15/20 03:16	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/15/20 03:16	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			04/15/20 03:16	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			04/15/20 03:16	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			04/15/20 03:16	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			04/15/20 03:16	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/15/20 03:16	1
Benzene	0.50	U	0.50	0.26	ug/L			04/15/20 03:16	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			04/15/20 03:16	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			04/15/20 03:16	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			04/15/20 03:16	1
Bromoform	0.50	U	0.50	0.32	ug/L			04/15/20 03:16	1
Bromomethane	0.57	U	0.57	0.57	ug/L			04/15/20 03:16	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			04/15/20 03:16	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			04/15/20 03:16	1
Chloroethane	0.50	U	0.50	0.32	ug/L			04/15/20 03:16	1
Chloroform	**0.70**		0.50	0.24	ug/L			04/15/20 03:16	1
Chloromethane	0.50	U	0.50	0.32	ug/L			04/15/20 03:16	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			04/15/20 03:16	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			04/15/20 03:16	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/15/20 03:16	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			04/15/20 03:16	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			04/15/20 03:16	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			04/15/20 03:16	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			04/15/20 03:16	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			04/15/20 03:16	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/15/20 03:16	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			04/15/20 03:16	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			04/15/20 03:16	1
Naphthalene	0.67	U	0.67	0.57	ug/L			04/15/20 03:16	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/15/20 03:16	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			04/15/20 03:16	1
o-Xylene	0.50	U	0.50	0.43	ug/L			04/15/20 03:16	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/15/20 03:16	1
Styrene	0.50	U	0.50	0.35	ug/L			04/15/20 03:16	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/15/20 03:16	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			04/15/20 03:16	1
Toluene	0.50	U	0.50	0.24	ug/L			04/15/20 03:16	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			04/15/20 03:16	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/15/20 03:16	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			04/15/20 03:16	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			04/15/20 03:16	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37756-1
SDG: 41858

Client Sample ID: 41858-005

Date Collected: 04/03/20 13:35
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/15/20 03:16	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			04/15/20 03:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*		*04/15/20 03:16*	*1*

Client Sample ID: 41858-006

Date Collected: 04/03/20 12:00
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-6

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			04/15/20 03:39	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 03:39	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			04/15/20 03:39	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 03:39	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 03:39	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			04/15/20 03:39	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			04/15/20 03:39	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			04/15/20 03:39	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			04/15/20 03:39	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			04/15/20 03:39	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			04/15/20 03:39	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			04/15/20 03:39	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			04/15/20 03:39	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			04/15/20 03:39	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			04/15/20 03:39	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			04/15/20 03:39	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			04/15/20 03:39	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			04/15/20 03:39	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/15/20 03:39	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			04/15/20 03:39	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			04/15/20 03:39	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			04/15/20 03:39	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			04/15/20 03:39	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/15/20 03:39	1
Benzene	0.50	U	0.50	0.26	ug/L			04/15/20 03:39	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			04/15/20 03:39	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			04/15/20 03:39	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			04/15/20 03:39	1
Bromoform	0.50	U	0.50	0.32	ug/L			04/15/20 03:39	1
Bromomethane	0.57	U	0.57	0.57	ug/L			04/15/20 03:39	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			04/15/20 03:39	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			04/15/20 03:39	1
Chloroethane	0.50	U	0.50	0.32	ug/L			04/15/20 03:39	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/15/20 03:39	1
Chloromethane	0.50	U	0.50	0.32	ug/L			04/15/20 03:39	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			04/15/20 03:39	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			04/15/20 03:39	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/15/20 03:39	1

Client Sample ID: 41858-006

Date Collected: 04/03/20 12:00
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-6

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	0.50	U	0.50	0.31	ug/L			04/15/20 03:39	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			04/15/20 03:39	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			04/15/20 03:39	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			04/15/20 03:39	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			04/15/20 03:39	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/15/20 03:39	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			04/15/20 03:39	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			04/15/20 03:39	1
Naphthalene	0.67	U	0.67	0.57	ug/L			04/15/20 03:39	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/15/20 03:39	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			04/15/20 03:39	1
o-Xylene	0.50	U	0.50	0.43	ug/L			04/15/20 03:39	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/15/20 03:39	1
Styrene	0.50	U	0.50	0.35	ug/L			04/15/20 03:39	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/15/20 03:39	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			04/15/20 03:39	1
Toluene	0.50	U	0.50	0.24	ug/L			04/15/20 03:39	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			04/15/20 03:39	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/15/20 03:39	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			04/15/20 03:39	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			04/15/20 03:39	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/15/20 03:39	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			04/15/20 03:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*		*04/15/20 03:39*	*1*

Client Sample ID: 41858-007

Date Collected: 04/03/20 13:12
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-7

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			04/15/20 04:01	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 04:01	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			04/15/20 04:01	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 04:01	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			04/15/20 04:01	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			04/15/20 04:01	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			04/15/20 04:01	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			04/15/20 04:01	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			04/15/20 04:01	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			04/15/20 04:01	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			04/15/20 04:01	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			04/15/20 04:01	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			04/15/20 04:01	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			04/15/20 04:01	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			04/15/20 04:01	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			04/15/20 04:01	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			04/15/20 04:01	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37756-1
SDG: 41858

Client Sample ID: 41858-007
Date Collected: 04/03/20 13:12
Date Received: 04/07/20 08:26

Lab Sample ID: 160-37756-7
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			04/15/20 04:01	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/15/20 04:01	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			04/15/20 04:01	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			04/15/20 04:01	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			04/15/20 04:01	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			04/15/20 04:01	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/15/20 04:01	1
Benzene	0.50	U	0.50	0.26	ug/L			04/15/20 04:01	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			04/15/20 04:01	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			04/15/20 04:01	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			04/15/20 04:01	1
Bromoform	0.50	U	0.50	0.32	ug/L			04/15/20 04:01	1
Bromomethane	0.57	U	0.57	0.57	ug/L			04/15/20 04:01	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			04/15/20 04:01	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			04/15/20 04:01	1
Chloroethane	0.50	U	0.50	0.32	ug/L			04/15/20 04:01	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/15/20 04:01	1
Chloromethane	0.50	U	0.50	0.32	ug/L			04/15/20 04:01	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			04/15/20 04:01	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			04/15/20 04:01	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/15/20 04:01	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			04/15/20 04:01	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			04/15/20 04:01	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			04/15/20 04:01	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			04/15/20 04:01	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			04/15/20 04:01	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/15/20 04:01	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			04/15/20 04:01	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			04/15/20 04:01	1
Naphthalene	0.67	U	0.67	0.57	ug/L			04/15/20 04:01	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/15/20 04:01	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			04/15/20 04:01	1
o-Xylene	0.50	U	0.50	0.43	ug/L			04/15/20 04:01	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/15/20 04:01	1
Styrene	0.50	U	0.50	0.35	ug/L			04/15/20 04:01	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/15/20 04:01	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			04/15/20 04:01	1
Toluene	0.50	U	0.50	0.24	ug/L			04/15/20 04:01	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			04/15/20 04:01	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/15/20 04:01	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			04/15/20 04:01	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			04/15/20 04:01	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/15/20 04:01	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			04/15/20 04:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*		*04/15/20 04:01*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-468434/7
Matrix: Water
Analysis Batch: 468434

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			04/14/20 22:49	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/14/20 22:49	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			04/14/20 22:49	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			04/14/20 22:49	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			04/14/20 22:49	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			04/14/20 22:49	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			04/14/20 22:49	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			04/14/20 22:49	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			04/14/20 22:49	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			04/14/20 22:49	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			04/14/20 22:49	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			04/14/20 22:49	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			04/14/20 22:49	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			04/14/20 22:49	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			04/14/20 22:49	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			04/14/20 22:49	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			04/14/20 22:49	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			04/14/20 22:49	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/14/20 22:49	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			04/14/20 22:49	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			04/14/20 22:49	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			04/14/20 22:49	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			04/14/20 22:49	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			04/14/20 22:49	1
Benzene	0.50	U	0.50	0.26	ug/L			04/14/20 22:49	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			04/14/20 22:49	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			04/14/20 22:49	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			04/14/20 22:49	1
Bromoform	0.50	U	0.50	0.32	ug/L			04/14/20 22:49	1
Bromomethane	0.57	U	0.57	0.57	ug/L			04/14/20 22:49	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			04/14/20 22:49	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			04/14/20 22:49	1
Chloroethane	0.50	U	0.50	0.32	ug/L			04/14/20 22:49	1
Chloroform	0.50	U	0.50	0.24	ug/L			04/14/20 22:49	1
Chloromethane	0.50	U	0.50	0.32	ug/L			04/14/20 22:49	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			04/14/20 22:49	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			04/14/20 22:49	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			04/14/20 22:49	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			04/14/20 22:49	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			04/14/20 22:49	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			04/14/20 22:49	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			04/14/20 22:49	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			04/14/20 22:49	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			04/14/20 22:49	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			04/14/20 22:49	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			04/14/20 22:49	1
Naphthalene	0.67	U	0.67	0.57	ug/L			04/14/20 22:49	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			04/14/20 22:49	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-468434/7
Matrix: Water
Analysis Batch: 468434

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			04/14/20 22:49	1
o-Xylene	0.50	U	0.50	0.43	ug/L			04/14/20 22:49	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			04/14/20 22:49	1
Styrene	0.50	U	0.50	0.35	ug/L			04/14/20 22:49	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			04/14/20 22:49	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			04/14/20 22:49	1
Toluene	0.50	U	0.50	0.24	ug/L			04/14/20 22:49	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			04/14/20 22:49	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			04/14/20 22:49	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			04/14/20 22:49	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			04/14/20 22:49	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			04/14/20 22:49	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			04/14/20 22:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*		*04/14/20 22:49*	*1*

Lab Sample ID: LCS 160-468434/4
Matrix: Water
Analysis Batch: 468434

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.8		ug/L		108	70 - 130
1,1,1-Trichloroethane	10.0	9.49		ug/L		95	70 - 130
1,1,2,2-Tetrachloroethane	10.0	11.0		ug/L		110	70 - 130
1,1,2-Trichloroethane	10.0	10.7		ug/L		107	70 - 130
1,1-Dichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1-Dichloroethene	10.0	8.24		ug/L		82	70 - 130
1,1-Dichloropropene	10.0	8.42		ug/L		84	70 - 130
1,2,3-Trichlorobenzene	10.0	9.91		ug/L		99	70 - 130
1,2,3-Trichloropropane	10.0	10.9		ug/L		109	70 - 130
1,2,4-Trichlorobenzene	10.0	9.98		ug/L		100	70 - 130
1,2,4-Trimethylbenzene	10.0	10.0		ug/L		100	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	11.5		ug/L		115	70 - 130
1,2-Dibromoethane	10.0	11.8		ug/L		118	70 - 130
1,2-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,2-Dichloroethane	10.0	10.3		ug/L		103	70 - 130
1,2-Dichloropropane	10.0	11.2		ug/L		112	70 - 130
1,3,5-Trimethylbenzene	10.0	9.77		ug/L		98	70 - 130
1,3-Dichlorobenzene	10.0	9.99		ug/L		100	70 - 130
1,3-Dichloropropane	10.0	10.2		ug/L		102	70 - 130
1,4-Dichlorobenzene	10.0	10.0		ug/L		100	70 - 130
2,2-Dichloropropane	10.0	8.98		ug/L		90	70 - 130
2-Chlorotoluene	10.0	9.60		ug/L		96	70 - 130
4-Chlorotoluene	10.0	9.83		ug/L		98	70 - 130
4-Isopropyltoluene	10.0	9.87		ug/L		99	70 - 130
Benzene	10.0	9.76		ug/L		98	70 - 130
Bromobenzene	10.0	10.0		ug/L		100	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-468434/4
Matrix: Water
Analysis Batch: 468434

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromochloromethane	10.0	10.7		ug/L		107	70 - 130
Bromodichloromethane	10.0	11.7		ug/L		117	70 - 130
Bromoform	10.0	14.2		ug/L		142	70 - 130
Bromomethane	10.0	10.7		ug/L		107	70 - 130
Carbon tetrachloride	10.0	8.55		ug/L		86	70 - 130
Chlorobenzene	10.0	9.86		ug/L		99	70 - 130
Chloroethane	10.0	10.2		ug/L		102	70 - 130
Chloroform	10.0	10.0		ug/L		100	70 - 130
Chloromethane	10.0	13.0		ug/L		130	70 - 130
cis-1,2-Dichloroethene	10.0	10.1		ug/L		101	70 - 130
cis-1,3-Dichloropropene	10.0	11.2		ug/L		112	70 - 130
Dibromochloromethane	10.0	13.4		ug/L		134	70 - 130
Dibromomethane	10.0	10.2		ug/L		102	70 - 130
Dichlorodifluoromethane	10.0	8.48		ug/L		85	70 - 130
Ethylbenzene	10.0	9.12		ug/L		91	70 - 130
Hexachlorobutadiene	10.0	8.61		ug/L		86	70 - 130
Isopropylbenzene	10.0	9.46		ug/L		95	70 - 130
Methylene Chloride	10.0	10.3		ug/L		103	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.7		ug/L		107	70 - 130
m-Xylene & p-Xylene	10.0	9.41		ug/L		94	70 - 130
Naphthalene	10.0	11.2		ug/L		112	70 - 130
n-Butylbenzene	10.0	9.02		ug/L		90	70 - 130
N-Propylbenzene	10.0	9.39		ug/L		94	70 - 130
o-Xylene	10.0	9.73		ug/L		97	70 - 130
sec-Butylbenzene	10.0	9.16		ug/L		92	70 - 130
Styrene	10.0	10.2		ug/L		102	70 - 130
tert-Butylbenzene	10.0	10.0		ug/L		100	70 - 130
Tetrachloroethene	10.0	8.39		ug/L		84	70 - 130
Toluene	10.0	9.51		ug/L		95	70 - 130
trans-1,2-Dichloroethene	10.0	9.48		ug/L		95	70 - 130
trans-1,3-Dichloropropene	10.0	10.1		ug/L		101	70 - 130
Trichloroethene	10.0	9.55		ug/L		95	70 - 130
Trichlorofluoromethane	10.0	6.98		ug/L		70	70 - 130
Vinyl chloride	10.0	9.32		ug/L		93	70 - 130
Xylenes, Total	20.0	19.1		ug/L		96	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-467528/1-A
Matrix: Water
Analysis Batch: 467815

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 467528

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		04/13/20 13:48	04/14/20 22:08	2

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 160-467528/2-A
Matrix: Water
Analysis Batch: 467815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467528

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	215		ug/L		107	80 - 120		

Lab Sample ID: 580-93866-K-1-B MS
Matrix: Water
Analysis Batch: 467815

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 467528

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	10	U	200	193		ug/L		97	75 - 125		

Lab Sample ID: 580-93866-K-1-C MSD
Matrix: Water
Analysis Batch: 467815

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 467528

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	10	U	200	201		ug/L		101	75 - 125	4	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37756-1
SDG: 41858

GC/MS VOA

Analysis Batch: 468434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37756-1	41858-001	Total/NA	Water	524.2	
160-37756-2	41858-002	Total/NA	Water	524.2	
160-37756-3	41858-003	Total/NA	Water	524.2	
160-37756-4	41858-004	Total/NA	Water	524.2	
160-37756-5	41858-005	Total/NA	Water	524.2	
160-37756-6	41858-006	Total/NA	Water	524.2	
160-37756-7	41858-007	Total/NA	Water	524.2	
MB 160-468434/7	Method Blank	Total/NA	Water	524.2	
LCS 160-468434/4	Lab Control Sample	Total/NA	Water	524.2	

Metals

Prep Batch: 467528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37756-2	41858-002	Total/NA	Water	3010A	
MB 160-467528/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-467528/2-A	Lab Control Sample	Total/NA	Water	3010A	
580-93866-K-1-B MS	Matrix Spike	Total/NA	Water	3010A	
580-93866-K-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 467815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37756-2	41858-002	Total/NA	Water	6020A	467528
MB 160-467528/1-A	Method Blank	Total/NA	Water	6020A	467528
LCS 160-467528/2-A	Lab Control Sample	Total/NA	Water	6020A	467528
580-93866-K-1-B MS	Matrix Spike	Total/NA	Water	6020A	467528
580-93866-K-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	467528

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37756-1
SDG: 41858

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(70-130)
160-37756-1	41858-001	110
160-37756-2	41858-002	112
160-37756-3	41858-003	113
160-37756-4	41858-004	113
160-37756-5	41858-005	109
160-37756-6	41858-006	110
160-37756-7	41858-007	112
LCS 160-468434/4	Lab Control Sample	104
MB 160-468434/7	Method Blank	108

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-37897-1
Laboratory Sample Delivery Group: 41906
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Rhonda Ridenhower

Authorized for release by:
5/11/2020 10:58:31 AM
Rhonda Ridenhower, Client Service Manager
rhonda.ridenhower@testamericainc.com

Designee for

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Surrogate Summary 24

Job ID: 160-37897-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-37897-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 04/24/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.3 C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41906-001 (160-37897-1), 41906-002 (160-37897-2) and 41906-005 (160-37897-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 05/05/2020.

The 1,2-Dichlorobenzene-d4 surrogate was left out of the initial calibration in error. It will be restored in the next initial calibration performed:41906-001 (160-37897-1), 41906-002 (160-37897-2), 41906-005 (160-37897-3), (160-37895-A-11), (160-37895-B-11 MS) and (160-37895-B-11 MSD).

The continuing calibration verification (CCV) associated with batch 160-469563 recovered above the upper control limit for

Job ID: 160-37897-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

1,1,1,2-Tetrachloroethane, Naphthalene, N-propylbenzene, Chlorodibromomethane, Vinyl Chloride, Trichlorofluoromethane, Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: 41906-001 (160-37897-1), 41906-002 (160-37897-2), 41906-005 (160-37897-3), (160-37895-A-11), (160-37895-B-11 MS) and (160-37895-B-11 MSD).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS

Sample 41906-002 (160-37897-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 05/04/2020 and analyzed on 05/06/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O.# _____

Chain of Custody No. 41906

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext: 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Mill	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	**Project Manager:**	**Field Engineer:**
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD 4/21/20

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	4/21/20	1401	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0	4/21/20	1405	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0	4/21/20	1405	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
~~003~~	~~E~~	~~G~~	~~095-153~~	~~0~~			~~W~~	~~RTW-2 Influent~~	~~40 ML~~	~~SC~~	~~3~~	~~HCL~~					~~X~~							
~~004~~	~~E~~	~~G~~	~~095-154~~	~~0~~			~~W~~	~~RTW-2 Effluent~~	~~40 ML~~	~~SC~~	~~3~~	~~HCL~~					~~X~~							
005	E	G	TB-1	0	4/21/20	0900	W	Trip Blank	40 ML	SC	3	HCL					X							

160-37897 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Mill 4/23/20	Print FED EX	Print
Signature 1000	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print Leonel Meraz-Reyes 4/24/2020	Print
Signature	Signature 0828	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☑ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

5/11/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-37897-1
SDG Number: 41906

Login Number: 37897
List Number: 1
Creator: Vania, Ivan H

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37897-1
SDG: 41906

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37897-1
SDG: 41906

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37897-1
SDG: 41906

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-37897-1	41906-001	Water	04/21/20 14:01	04/24/20 14:00	
160-37897-2	41906-002	Water	04/21/20 14:05	04/24/20 14:00	
160-37897-3	41906-005	Water	04/21/20 09:00	04/24/20 14:00	

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37897-1
SDG: 41906

Client Sample ID: 41906-001
Date Collected: 04/21/20 14:01
Date Received: 04/24/20 14:00

Lab Sample ID: 160-37897-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/05/20 16:14	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/05/20 16:14	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/05/20 16:14	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/05/20 16:14	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/05/20 16:14	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/05/20 16:14	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/05/20 16:14	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/05/20 16:14	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/05/20 16:14	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/05/20 16:14	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/05/20 16:14	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/05/20 16:14	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/05/20 16:14	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/05/20 16:14	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/05/20 16:14	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/05/20 16:14	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/05/20 16:14	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/05/20 16:14	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/05/20 16:14	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/05/20 16:14	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/05/20 16:14	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/05/20 16:14	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/05/20 16:14	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/05/20 16:14	1
Benzene	0.50	U	0.50	0.26	ug/L			05/05/20 16:14	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/05/20 16:14	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/05/20 16:14	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/05/20 16:14	1
Bromoform	0.50	U	0.50	0.32	ug/L			05/05/20 16:14	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/05/20 16:14	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/05/20 16:14	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/05/20 16:14	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/05/20 16:14	1
Chloroform	**0.75**		0.50	0.24	ug/L			05/05/20 16:14	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/05/20 16:14	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/05/20 16:14	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/05/20 16:14	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/05/20 16:14	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/05/20 16:14	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/05/20 16:14	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/05/20 16:14	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/05/20 16:14	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/05/20 16:14	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/05/20 16:14	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/05/20 16:14	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/05/20 16:14	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/05/20 16:14	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/05/20 16:14	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/05/20 16:14	1

Client Sample ID: 41906-001

Date Collected: 04/21/20 14:01
Date Received: 04/24/20 14:00

Lab Sample ID: 160-37897-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			05/05/20 16:14	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/05/20 16:14	1
Styrene	0.50	U	0.50	0.35	ug/L			05/05/20 16:14	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/05/20 16:14	1
Tetrachloroethene	**5.4**		0.50	0.31	ug/L			05/05/20 16:14	1
Toluene	0.50	U	0.50	0.24	ug/L			05/05/20 16:14	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/05/20 16:14	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/05/20 16:14	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/05/20 16:14	1
Trichlorofluoromethane	**0.80**		0.50	0.26	ug/L			05/05/20 16:14	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/05/20 16:14	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/05/20 16:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*05/05/20 16:14*	*1*

Client Sample ID: 41906-002

Date Collected: 04/21/20 14:05
Date Received: 04/24/20 14:00

Lab Sample ID: 160-37897-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/05/20 16:36	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/05/20 16:36	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/05/20 16:36	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/05/20 16:36	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/05/20 16:36	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/05/20 16:36	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/05/20 16:36	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/05/20 16:36	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/05/20 16:36	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/05/20 16:36	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/05/20 16:36	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/05/20 16:36	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/05/20 16:36	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/05/20 16:36	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/05/20 16:36	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/05/20 16:36	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/05/20 16:36	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/05/20 16:36	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/05/20 16:36	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/05/20 16:36	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/05/20 16:36	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/05/20 16:36	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/05/20 16:36	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/05/20 16:36	1
Benzene	0.50	U	0.50	0.26	ug/L			05/05/20 16:36	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/05/20 16:36	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/05/20 16:36	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/05/20 16:36	1

Client Sample ID: 41906-002

Date Collected: 04/21/20 14:05
Date Received: 04/24/20 14:00

Lab Sample ID: 160-37897-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.32	ug/L			05/05/20 16:36	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/05/20 16:36	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/05/20 16:36	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/05/20 16:36	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/05/20 16:36	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/05/20 16:36	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/05/20 16:36	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/05/20 16:36	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/05/20 16:36	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/05/20 16:36	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/05/20 16:36	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/05/20 16:36	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/05/20 16:36	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/05/20 16:36	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/05/20 16:36	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/05/20 16:36	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/05/20 16:36	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/05/20 16:36	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/05/20 16:36	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/05/20 16:36	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/05/20 16:36	1
o-Xylene	0.50	U	0.50	0.43	ug/L			05/05/20 16:36	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/05/20 16:36	1
Styrene	0.50	U	0.50	0.35	ug/L			05/05/20 16:36	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/05/20 16:36	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			05/05/20 16:36	1
Toluene	0.50	U	0.50	0.24	ug/L			05/05/20 16:36	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/05/20 16:36	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/05/20 16:36	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/05/20 16:36	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			05/05/20 16:36	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/05/20 16:36	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/05/20 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*05/05/20 16:36*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/04/20 14:49	05/06/20 03:22	2

Client Sample ID: 41906-005

Date Collected: 04/21/20 09:00
Date Received: 04/24/20 14:00

Lab Sample ID: 160-37897-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/05/20 16:59	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/05/20 16:59	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/05/20 16:59	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37897-1
SDG: 41906

Client Sample ID: 41906-005
Date Collected: 04/21/20 09:00
Date Received: 04/24/20 14:00

Lab Sample ID: 160-37897-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/05/20 16:59	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/05/20 16:59	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/05/20 16:59	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/05/20 16:59	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/05/20 16:59	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/05/20 16:59	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/05/20 16:59	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/05/20 16:59	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/05/20 16:59	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/05/20 16:59	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/05/20 16:59	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/05/20 16:59	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/05/20 16:59	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/05/20 16:59	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/05/20 16:59	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/05/20 16:59	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/05/20 16:59	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/05/20 16:59	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/05/20 16:59	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/05/20 16:59	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/05/20 16:59	1
Benzene	0.50	U	0.50	0.26	ug/L			05/05/20 16:59	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/05/20 16:59	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/05/20 16:59	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/05/20 16:59	1
Bromoform	0.50	U	0.50	0.32	ug/L			05/05/20 16:59	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/05/20 16:59	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/05/20 16:59	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/05/20 16:59	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/05/20 16:59	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/05/20 16:59	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/05/20 16:59	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/05/20 16:59	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/05/20 16:59	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/05/20 16:59	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/05/20 16:59	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/05/20 16:59	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/05/20 16:59	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/05/20 16:59	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/05/20 16:59	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/05/20 16:59	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/05/20 16:59	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/05/20 16:59	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/05/20 16:59	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/05/20 16:59	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/05/20 16:59	1
o-Xylene	0.50	U	0.50	0.43	ug/L			05/05/20 16:59	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/05/20 16:59	1
Styrene	0.50	U	0.50	0.35	ug/L			05/05/20 16:59	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37897-1
SDG: 41906

Client Sample ID: 41906-005
Date Collected: 04/21/20 09:00
Date Received: 04/24/20 14:00

Lab Sample ID: 160-37897-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/05/20 16:59	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			05/05/20 16:59	1
Toluene	0.50	U	0.50	0.24	ug/L			05/05/20 16:59	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/05/20 16:59	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/05/20 16:59	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/05/20 16:59	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			05/05/20 16:59	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/05/20 16:59	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/05/20 16:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*05/05/20 16:59*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-469563/7
Matrix: Water
Analysis Batch: 469563

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/05/20 11:57	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/05/20 11:57	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/05/20 11:57	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/05/20 11:57	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/05/20 11:57	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/05/20 11:57	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/05/20 11:57	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/05/20 11:57	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/05/20 11:57	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/05/20 11:57	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/05/20 11:57	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/05/20 11:57	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/05/20 11:57	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/05/20 11:57	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/05/20 11:57	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/05/20 11:57	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/05/20 11:57	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/05/20 11:57	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/05/20 11:57	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/05/20 11:57	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/05/20 11:57	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/05/20 11:57	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/05/20 11:57	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/05/20 11:57	1
Benzene	0.50	U	0.50	0.26	ug/L			05/05/20 11:57	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/05/20 11:57	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/05/20 11:57	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/05/20 11:57	1
Bromoform	0.50	U	0.50	0.32	ug/L			05/05/20 11:57	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/05/20 11:57	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/05/20 11:57	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/05/20 11:57	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/05/20 11:57	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/05/20 11:57	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/05/20 11:57	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/05/20 11:57	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/05/20 11:57	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/05/20 11:57	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/05/20 11:57	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/05/20 11:57	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/05/20 11:57	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/05/20 11:57	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/05/20 11:57	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/05/20 11:57	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/05/20 11:57	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/05/20 11:57	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/05/20 11:57	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/05/20 11:57	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-469563/7
Matrix: Water
Analysis Batch: 469563

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/05/20 11:57	1
o-Xylene	0.50	U	0.50	0.43	ug/L			05/05/20 11:57	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/05/20 11:57	1
Styrene	0.50	U	0.50	0.35	ug/L			05/05/20 11:57	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/05/20 11:57	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			05/05/20 11:57	1
Toluene	0.50	U	0.50	0.24	ug/L			05/05/20 11:57	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/05/20 11:57	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/05/20 11:57	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/05/20 11:57	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			05/05/20 11:57	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/05/20 11:57	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/05/20 11:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*05/05/20 11:57*	*1*

Lab Sample ID: LCS 160-469563/4
Matrix: Water
Analysis Batch: 469563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	11.6		ug/L		116	70 - 130
1,1,1-Trichloroethane	10.0	12.1		ug/L		121	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.8		ug/L		108	70 - 130
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloroethane	10.0	10.6		ug/L		106	70 - 130
1,1-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
1,1-Dichloropropene	10.0	12.0		ug/L		120	70 - 130
1,2,3-Trichlorobenzene	10.0	11.4		ug/L		114	70 - 130
1,2,3-Trichloropropane	10.0	10.7		ug/L		107	70 - 130
1,2,4-Trichlorobenzene	10.0	12.0		ug/L		120	70 - 130
1,2,4-Trimethylbenzene	10.0	10.7		ug/L		107	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	10.9		ug/L		109	70 - 130
1,2-Dibromoethane	10.0	10.9		ug/L		109	70 - 130
1,2-Dichlorobenzene	10.0	11.0		ug/L		110	70 - 130
1,2-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,2-Dichloropropane	10.0	10.6		ug/L		106	70 - 130
1,3,5-Trimethylbenzene	10.0	10.7		ug/L		107	70 - 130
1,3-Dichlorobenzene	10.0	11.4		ug/L		114	70 - 130
1,3-Dichloropropane	10.0	10.3		ug/L		103	70 - 130
1,4-Dichlorobenzene	10.0	11.3		ug/L		113	70 - 130
2,2-Dichloropropane	10.0	10.7		ug/L		107	70 - 130
2-Chlorotoluene	10.0	11.7		ug/L		117	70 - 130
4-Chlorotoluene	10.0	11.8		ug/L		118	70 - 130
4-Isopropyltoluene	10.0	11.2		ug/L		112	70 - 130
Benzene	10.0	10.8		ug/L		108	70 - 130
Bromobenzene	10.0	10.8		ug/L		108	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-469563/4
Matrix: Water
Analysis Batch: 469563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromochloromethane	10.0	10.5		ug/L		105	70 - 130
Bromodichloromethane	10.0	11.0		ug/L		110	70 - 130
Bromoform	10.0	10.9		ug/L		109	70 - 130
Bromomethane	10.0	11.3		ug/L		113	70 - 130
Carbon tetrachloride	10.0	10.7		ug/L		107	70 - 130
Chlorobenzene	10.0	11.0		ug/L		110	70 - 130
Chloroethane	10.0	12.1		ug/L		121	70 - 130
Chloroform	10.0	10.6		ug/L		106	70 - 130
Chloromethane	10.0	11.9		ug/L		119	70 - 130
cis-1,2-Dichloroethene	10.0	10.7		ug/L		107	70 - 130
cis-1,3-Dichloropropene	10.0	11.4		ug/L		114	70 - 130
Dibromochloromethane	10.0	11.6		ug/L		116	70 - 130
Dibromomethane	10.0	10.4		ug/L		104	70 - 130
Dichlorodifluoromethane	10.0	14.0		ug/L		140	70 - 130
Ethylbenzene	10.0	11.8		ug/L		118	70 - 130
Hexachlorobutadiene	10.0	11.3		ug/L		113	70 - 130
Isopropylbenzene	10.0	11.2		ug/L		112	70 - 130
Methylene Chloride	10.0	9.84		ug/L		98	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.97		ug/L		100	70 - 130
m-Xylene & p-Xylene	10.0	11.9		ug/L		119	70 - 130
Naphthalene	10.0	12.0		ug/L		120	70 - 130
n-Butylbenzene	10.0	11.1		ug/L		111	70 - 130
N-Propylbenzene	10.0	12.7		ug/L		127	70 - 130
o-Xylene	10.0	11.7		ug/L		117	70 - 130
sec-Butylbenzene	10.0	11.3		ug/L		113	70 - 130
Styrene	10.0	10.2		ug/L		102	70 - 130
tert-Butylbenzene	10.0	10.8		ug/L		108	70 - 130
Tetrachloroethene	10.0	12.2		ug/L		122	70 - 130
Toluene	10.0	11.2		ug/L		112	70 - 130
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	70 - 130
trans-1,3-Dichloropropene	10.0	9.91		ug/L		99	70 - 130
Trichloroethene	10.0	11.6		ug/L		116	70 - 130
Trichlorofluoromethane	10.0	12.9		ug/L		129	70 - 130
Vinyl chloride	10.0	12.9		ug/L		129	70 - 130
Xylenes, Total	20.0	23.6		ug/L		118	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 160-469563/5
Matrix: Water
Analysis Batch: 469563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	12.1		ug/L		121	70 - 130	4	20
1,1,1-Trichloroethane	10.0	12.5		ug/L		125	70 - 130	2	20
1,1,2,2-Tetrachloroethane	10.0	11.3		ug/L		113	70 - 130	4	20
1,1,2-Trichloroethane	10.0	10.9		ug/L		109	70 - 130	3	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-469563/5
Matrix: Water
Analysis Batch: 469563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethane	10.0	10.8		ug/L		108	70 - 130	1	20
1,1-Dichloroethene	10.0	10.6		ug/L		106	70 - 130	0	20
1,1-Dichloropropene	10.0	12.2		ug/L		122	70 - 130	2	20
1,2,3-Trichlorobenzene	10.0	11.9		ug/L		119	70 - 130	4	20
1,2,3-Trichloropropane	10.0	11.9		ug/L		119	70 - 130	11	20
1,2,4-Trichlorobenzene	10.0	12.3		ug/L		123	70 - 130	3	20
1,2,4-Trimethylbenzene	10.0	10.8		ug/L		108	70 - 130	1	20
1,2-Dibromo-3-Chloropropane	10.0	11.3		ug/L		113	70 - 130	3	20
1,2-Dibromoethane	10.0	11.4		ug/L		114	70 - 130	4	20
1,2-Dichlorobenzene	10.0	11.2		ug/L		112	70 - 130	2	20
1,2-Dichloroethane	10.0	10.6		ug/L		106	70 - 130	5	20
1,2-Dichloropropane	10.0	11.0		ug/L		110	70 - 130	3	20
1,3,5-Trimethylbenzene	10.0	10.9		ug/L		109	70 - 130	2	20
1,3-Dichlorobenzene	10.0	11.6		ug/L		116	70 - 130	2	20
1,3-Dichloropropane	10.0	10.8		ug/L		108	70 - 130	4	20
1,4-Dichlorobenzene	10.0	11.4		ug/L		114	70 - 130	1	20
2,2-Dichloropropane	10.0	11.5		ug/L		115	70 - 130	8	20
2-Chlorotoluene	10.0	11.8		ug/L		118	70 - 130	1	20
4-Chlorotoluene	10.0	11.9		ug/L		119	70 - 130	1	20
4-Isopropyltoluene	10.0	11.3		ug/L		113	70 - 130	1	20
Benzene	10.0	11.1		ug/L		111	70 - 130	2	20
Bromobenzene	10.0	11.1		ug/L		111	70 - 130	3	20
Bromochloromethane	10.0	10.7		ug/L		107	70 - 130	3	20
Bromodichloromethane	10.0	11.3		ug/L		113	70 - 130	3	20
Bromoform	10.0	11.2		ug/L		112	70 - 130	3	20
Bromomethane	10.0	11.3		ug/L		113	70 - 130	0	20
Carbon tetrachloride	10.0	10.7		ug/L		107	70 - 130	1	20
Chlorobenzene	10.0	11.4		ug/L		114	70 - 130	3	20
Chloroethane	10.0	12.4		ug/L		124	70 - 130	3	20
Chloroform	10.0	10.8		ug/L		108	70 - 130	2	20
Chloromethane	10.0	12.0		ug/L		120	70 - 130	1	20
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	70 - 130	1	20
cis-1,3-Dichloropropene	10.0	12.0		ug/L		120	70 - 130	5	20
Dibromochloromethane	10.0	12.0		ug/L		120	70 - 130	3	20
Dibromomethane	10.0	10.8		ug/L		108	70 - 130	4	20
Dichlorodifluoromethane	10.0	14.0		ug/L		140	70 - 130	0	20
Ethylbenzene	10.0	12.1		ug/L		121	70 - 130	2	20
Hexachlorobutadiene	10.0	11.4		ug/L		114	70 - 130	1	20
Isopropylbenzene	10.0	11.3		ug/L		113	70 - 130	1	20
Methylene Chloride	10.0	10.1		ug/L		101	70 - 130	2	20
Methyl-t-Butyl Ether (MTBE)	10.0	11.4		ug/L		114	70 - 130	13	20
m-Xylene & p-Xylene	10.0	12.3		ug/L		123	70 - 130	3	20
Naphthalene	10.0	12.7		ug/L		127	70 - 130	6	20
n-Butylbenzene	10.0	11.2		ug/L		112	70 - 130	1	20
N-Propylbenzene	10.0	12.7		ug/L		127	70 - 130	0	20
o-Xylene	10.0	12.1		ug/L		121	70 - 130	4	20
sec-Butylbenzene	10.0	11.4		ug/L		114	70 - 130	1	20
Styrene	10.0	10.5		ug/L		105	70 - 130	3	20
tert-Butylbenzene	10.0	10.9		ug/L		109	70 - 130	1	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-469563/5
Matrix: Water
Analysis Batch: 469563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tetrachloroethene	10.0	12.0		ug/L		120	70 - 130	1	20
Toluene	10.0	11.3		ug/L		113	70 - 130	1	20
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	70 - 130	0	20
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	70 - 130	3	20
Trichloroethene	10.0	11.8		ug/L		118	70 - 130	2	20
Trichlorofluoromethane	10.0	13.0		ug/L		130	70 - 130	0	20
Vinyl chloride	10.0	13.0		ug/L		130	70 - 130	1	20
Xylenes, Total	20.0	24.4		ug/L		122	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 160-37895-B-11 MS
Matrix: Water
Analysis Batch: 469563

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.5	U	50.0	58.0		ug/L		116	73 - 123
1,1,1-Trichloroethane	2.5	U	50.0	60.6		ug/L		121	76 - 122
1,1,2,2-Tetrachloroethane	2.5	U	50.0	52.5		ug/L		105	77 - 118
1,1,2-Trichloroethane	2.5	U	50.0	52.9		ug/L		106	79 - 116
1,1-Dichloroethane	2.5	U	50.0	53.7		ug/L		107	81 - 120
1,1-Dichloroethene	2.5	U	50.0	51.5		ug/L		103	68 - 116
1,1-Dichloropropene	2.5	U	50.0	59.7		ug/L		119	74 - 124
1,2,3-Trichlorobenzene	3.0	U	50.0	54.4		ug/L		109	57 - 128
1,2,3-Trichloropropane	2.5	U	50.0	52.2		ug/L		104	72 - 122
1,2,4-Trichlorobenzene	2.8	U	50.0	58.2		ug/L		116	54 - 150
1,2,4-Trimethylbenzene	2.5	U	50.0	53.8		ug/L		108	70 - 125
1,2-Dibromo-3-Chloropropane	3.2	U	50.0	50.6		ug/L		101	58 - 130
1,2-Dibromoethane	2.5	U	50.0	53.2		ug/L		106	76 - 118
1,2-Dichlorobenzene	2.5	U	50.0	55.0		ug/L		110	76 - 120
1,2-Dichloroethane	2.5	U	50.0	52.0		ug/L		104	78 - 123
1,2-Dichloropropane	2.5	U	50.0	55.6		ug/L		111	80 - 119
1,3,5-Trimethylbenzene	2.5	U	50.0	53.9		ug/L		108	76 - 126
1,3-Dichlorobenzene	2.5	U	50.0	57.6		ug/L		115	76 - 120
1,3-Dichloropropane	2.5	U	50.0	52.0		ug/L		104	79 - 116
1,4-Dichlorobenzene	2.5	U	50.0	56.5		ug/L		113	75 - 117
2,2-Dichloropropane	2.5	U	50.0	53.5		ug/L		107	76 - 120
2-Chlorotoluene	2.5	U	50.0	59.1		ug/L		118	79 - 125
4-Chlorotoluene	2.5	U	50.0	59.3		ug/L		119	76 - 136
4-Isopropyltoluene	2.5	U	50.0	56.2		ug/L		112	78 - 132
Benzene	2.5	U	50.0	55.4		ug/L		111	77 - 124
Bromobenzene	2.5	U	50.0	54.8		ug/L		110	77 - 115
Bromochloromethane	2.5	U	50.0	53.2		ug/L		106	73 - 118
Bromodichloromethane	2.5	U	50.0	57.4		ug/L		115	73 - 118
Bromoform	2.5	U	50.0	50.8		ug/L		102	70 - 118
Bromomethane	2.9	U	50.0	55.3		ug/L		111	46 - 147
Carbon tetrachloride	2.5	U	50.0	51.0		ug/L		102	70 - 128

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-37895-B-11 MS
Matrix: Water
Analysis Batch: 469563

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorobenzene	2.5	U	50.0	55.7		ug/L		111	76 - 124
Chloroethane	2.5	U	50.0	58.7		ug/L		117	66 - 129
Chloroform	2.5	U	50.0	54.8		ug/L		110	77 - 122
Chloromethane	2.5	U	50.0	57.3		ug/L		115	68 - 132
cis-1,2-Dichloroethene	2.5	U	50.0	54.4		ug/L		109	71 - 117
cis-1,3-Dichloropropene	2.5	U	50.0	58.1		ug/L		116	76 - 128
Dibromochloromethane	2.5	U	50.0	55.8		ug/L		112	73 - 114
Dibromomethane	2.5	U	50.0	52.9		ug/L		106	77 - 118
Dichlorodifluoromethane	3.3	U	50.0	63.7		ug/L		127	61 - 134
Ethylbenzene	2.5	U	50.0	59.4		ug/L		119	80 - 122
Hexachlorobutadiene	2.5	U	50.0	54.5		ug/L		109	57 - 144
Isopropylbenzene	2.5	U	50.0	56.0		ug/L		112	85 - 148
Methylene Chloride	2.5	U	50.0	50.3		ug/L		101	65 - 131
Methyl-t-Butyl Ether (MTBE)	2.5	U	50.0	53.0		ug/L		106	75 - 122
m-Xylene & p-Xylene	5.0	U	50.0	59.8		ug/L		120	70 - 130
Naphthalene	3.4	U	50.0	55.5		ug/L		111	56 - 143
n-Butylbenzene	2.5	U	50.0	54.3		ug/L		109	74 - 128
N-Propylbenzene	2.5	U	50.0	63.3		ug/L		127	80 - 132
o-Xylene	2.5	U	50.0	59.4		ug/L		119	70 - 130
sec-Butylbenzene	2.5	U	50.0	56.3		ug/L		113	78 - 128
Styrene	2.5	U	50.0	51.6		ug/L		103	68 - 125
tert-Butylbenzene	2.5	U	50.0	54.2		ug/L		108	75 - 131
Tetrachloroethene	2.5	U	50.0	59.2		ug/L		118	71 - 124
Toluene	2.5	U	50.0	55.6		ug/L		111	76 - 127
trans-1,2-Dichloroethene	2.5	U	50.0	53.6		ug/L		107	72 - 117
trans-1,3-Dichloropropene	2.5	U	50.0	48.1		ug/L		96	85 - 135
Trichloroethene	2.5	U	50.0	58.9		ug/L		118	71 - 118
Trichlorofluoromethane	2.5	U	50.0	60.0		ug/L		120	56 - 127
Vinyl chloride	2.5	U	50.0	59.5		ug/L		119	58 - 114
Xylenes, Total	15	U	100	119		ug/L		119	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 160-37895-B-11 MSD
Matrix: Water
Analysis Batch: 469563

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.5	U	50.0	60.1		ug/L		120	73 - 123	4	20
1,1,1-Trichloroethane	2.5	U	50.0	60.7		ug/L		121	76 - 122	0	20
1,1,2,2-Tetrachloroethane	2.5	U	50.0	53.7		ug/L		107	77 - 118	2	20
1,1,2-Trichloroethane	2.5	U	50.0	53.8		ug/L		108	79 - 116	2	20
1,1-Dichloroethane	2.5	U	50.0	53.7		ug/L		107	81 - 120	0	20
1,1-Dichloroethene	2.5	U	50.0	51.8		ug/L		104	68 - 116	1	20
1,1-Dichloropropene	2.5	U	50.0	58.8		ug/L		118	74 - 124	2	20
1,2,3-Trichlorobenzene	3.0	U	50.0	56.0		ug/L		112	57 - 128	3	20
1,2,3-Trichloropropane	2.5	U	50.0	55.8		ug/L		112	72 - 122	7	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-37895-B-11 MSD
Matrix: Water
Analysis Batch: 469563

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	2.8	U	50.0	59.5		ug/L		119	54 - 150	2	20
1,2,4-Trimethylbenzene	2.5	U	50.0	54.6		ug/L		109	70 - 125	1	20
1,2-Dibromo-3-Chloropropane	3.2	U	50.0	51.4		ug/L		103	58 - 130	2	20
1,2-Dibromoethane	2.5	U	50.0	54.9		ug/L		110	76 - 118	3	20
1,2-Dichlorobenzene	2.5	U	50.0	55.6		ug/L		111	76 - 120	1	20
1,2-Dichloroethane	2.5	U	50.0	51.4		ug/L		103	78 - 123	1	20
1,2-Dichloropropane	2.5	U	50.0	55.4		ug/L		111	80 - 119	0	20
1,3,5-Trimethylbenzene	2.5	U	50.0	54.1		ug/L		108	76 - 126	0	20
1,3-Dichlorobenzene	2.5	U	50.0	57.2		ug/L		114	76 - 120	1	20
1,3-Dichloropropane	2.5	U	50.0	52.6		ug/L		105	79 - 116	1	20
1,4-Dichlorobenzene	2.5	U	50.0	56.3		ug/L		113	75 - 117	0	20
2,2-Dichloropropane	2.5	U	50.0	54.1		ug/L		108	76 - 120	1	20
2-Chlorotoluene	2.5	U	50.0	59.5		ug/L		119	79 - 125	1	20
4-Chlorotoluene	2.5	U	50.0	59.3		ug/L		119	76 - 136	0	20
4-Isopropyltoluene	2.5	U	50.0	56.1		ug/L		112	78 - 132	0	20
Benzene	2.5	U	50.0	55.4		ug/L		111	77 - 124	0	20
Bromobenzene	2.5	U	50.0	55.4		ug/L		111	77 - 115	1	20
Bromochloromethane	2.5	U	50.0	52.1		ug/L		104	73 - 118	2	20
Bromodichloromethane	2.5	U	50.0	56.6		ug/L		113	73 - 118	1	20
Bromoform	2.5	U	50.0	52.2		ug/L		104	70 - 118	3	20
Bromomethane	2.9	U	50.0	55.8		ug/L		112	46 - 147	1	20
Carbon tetrachloride	2.5	U	50.0	52.0		ug/L		104	70 - 128	2	20
Chlorobenzene	2.5	U	50.0	56.7		ug/L		113	76 - 124	2	20
Chloroethane	2.5	U	50.0	59.3		ug/L		119	66 - 129	1	20
Chloroform	2.5	U	50.0	54.6		ug/L		109	77 - 122	0	20
Chloromethane	2.5	U	50.0	58.1		ug/L		116	68 - 132	1	20
cis-1,2-Dichloroethene	2.5	U	50.0	54.8		ug/L		110	71 - 117	1	20
cis-1,3-Dichloropropene	2.5	U	50.0	58.1		ug/L		116	76 - 128	0	20
Dibromochloromethane	2.5	U	50.0	57.9		ug/L		116	73 - 114	4	20
Dibromomethane	2.5	U	50.0	53.2		ug/L		106	77 - 118	1	20
Dichlorodifluoromethane	3.3	U	50.0	67.2		ug/L		134	61 - 134	5	20
Ethylbenzene	2.5	U	50.0	60.6		ug/L		121	80 - 122	2	20
Hexachlorobutadiene	2.5	U	50.0	55.7		ug/L		111	57 - 144	2	20
Isopropylbenzene	2.5	U	50.0	56.7		ug/L		113	85 - 148	1	20
Methylene Chloride	2.5	U	50.0	50.0		ug/L		100	65 - 131	1	20
Methyl-t-Butyl Ether (MTBE)	2.5	U	50.0	51.7		ug/L		103	75 - 122	3	20
m-Xylene & p-Xylene	5.0	U	50.0	61.1		ug/L		122	70 - 130	2	20
Naphthalene	3.4	U	50.0	58.6		ug/L		117	56 - 143	6	20
n-Butylbenzene	2.5	U	50.0	54.6		ug/L		109	74 - 128	1	20
N-Propylbenzene	2.5	U	50.0	63.2		ug/L		126	80 - 132	0	20
o-Xylene	2.5	U	50.0	60.5		ug/L		121	70 - 130	2	20
sec-Butylbenzene	2.5	U	50.0	56.4		ug/L		113	78 - 128	0	20
Styrene	2.5	U	50.0	52.2		ug/L		104	68 - 125	1	20
tert-Butylbenzene	2.5	U	50.0	54.7		ug/L		109	75 - 131	1	20
Tetrachloroethene	2.5	U	50.0	60.7		ug/L		121	71 - 124	2	20
Toluene	2.5	U	50.0	57.1		ug/L		114	76 - 127	3	20
trans-1,2-Dichloroethene	2.5	U	50.0	54.6		ug/L		109	72 - 117	2	20
trans-1,3-Dichloropropene	2.5	U	50.0	50.7		ug/L		101	85 - 135	5	20
Trichloroethene	2.5	U	50.0	58.0		ug/L		116	71 - 118	2	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-37895-B-11 MSD
Matrix: Water
Analysis Batch: 469563

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichlorofluoromethane	2.5	U	50.0	62.0		ug/L		124	56 - 127	3	20
Vinyl chloride	2.5	U	50.0	61.7		ug/L		123	58 - 114	4	20
Xylenes, Total	15	U	100	122		ug/L		122	78 - 128	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-469526/1-A
Matrix: Water
Analysis Batch: 469696

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469526

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/04/20 14:49	05/06/20 01:21	2

Lab Sample ID: LCS 160-469526/2-A
Matrix: Water
Analysis Batch: 469696

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469526

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	203		ug/L		101	82 - 116		

Lab Sample ID: 280-135751-C-4-E MS
Matrix: Water
Analysis Batch: 469696

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 469526

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	202		ug/L		101	82 - 116		

Lab Sample ID: 280-135751-C-4-F MSD
Matrix: Water
Analysis Batch: 469696

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 469526

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	203		ug/L		102	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37897-1
SDG: 41906

GC/MS VOA

Analysis Batch: 469563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37897-1	41906-001	Total/NA	Water	524.2	
160-37897-2	41906-002	Total/NA	Water	524.2	
160-37897-3	41906-005	Total/NA	Water	524.2	
MB 160-469563/7	Method Blank	Total/NA	Water	524.2	
LCS 160-469563/4	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-469563/5	Lab Control Sample Dup	Total/NA	Water	524.2	
160-37895-B-11 MS	Matrix Spike	Total/NA	Water	524.2	
160-37895-B-11 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Metals

Prep Batch: 469526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37897-2	41906-002	Total/NA	Water	3010A	
MB 160-469526/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-469526/2-A	Lab Control Sample	Total/NA	Water	3010A	
280-135751-C-4-E MS	Matrix Spike	Total/NA	Water	3010A	
280-135751-C-4-F MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 469696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37897-2	41906-002	Total/NA	Water	6020A	469526
MB 160-469526/1-A	Method Blank	Total/NA	Water	6020A	469526
LCS 160-469526/2-A	Lab Control Sample	Total/NA	Water	6020A	469526
280-135751-C-4-E MS	Matrix Spike	Total/NA	Water	6020A	469526
280-135751-C-4-F MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	469526

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37897-1
SDG: 41906

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	BFB (70-130)
160-37895-B-11 MS	Matrix Spike	98
160-37895-B-11 MSD	Matrix Spike Duplicate	97
160-37897-1	41906-001	99
160-37897-2	41906-002	104
160-37897-3	41906-005	99
LCS 160-469563/4	Lab Control Sample	97
LCSD 160-469563/5	Lab Control Sample Dup	98
MB 160-469563/7	Method Blank	100

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
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Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-37978-1
Laboratory Sample Delivery Group: 41939
Client Project/Site: BNL - OU3 B96
Revision: 1

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
6/4/2020 5:30:47 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-37978-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-37978-1 - Revision 1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client. This revision adds results for surrogate 1,2-dichlorobenzene-d4.

RECEIPT

The samples were received on 5/7/2020 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41939-001 (160-37978-1), 41939-002 (160-37978-2), 41939-003 (160-37978-3), 41939-004 (160-37978-4) and 41939-005

Job ID: 160-37978-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

(160-37978-5) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 05/18/2020.

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-470693:
The continuing calibration verification (CCV) recovered above the upper control limit for 2,2 Dichloropropane and sec- Butylbenzene. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data was reported: 41939-001 (160-37978-1), 41939-002 (160-37978-2), 41939-003 (160-37978-3), 41939-004 (160-37978-4), 41939-005 (160-37978-5), (160-37978-A-1 MS), and (160-37978-A-1 MSD).

The matrix spike / matrix spike duplicate (MS/MSD) recoveries were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 41939-002 (160-37978-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 05/11/2020 and analyzed on 05/12/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

Preparation Batch 160-470013, Analytical Batch 160-470280:
The following samples were diluted due to the abundance of non-target analytes. Elevated reporting limits (RLs) are provided: (160-37931-C-1-A ^10), (160-37931-C-1-B MS ^10), (160-37931-C-1-C MSD ^10), and (160-37931-C-1-A SD ^50).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41939

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Miller	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested										
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium	
001	E	G	095-151	0	5/5/20	1400	W	RTW-1 Influent	40 ML	SC	3	HCL					X						
002	E	G	095-152	0		1410	W	RTW-1 Effluent	40 ML	SC	3	HCL					X						
002	E	G	095-152	0		1410	W	RTW-1 Effluent	250 ML	P	1	Hno3										X	
003	E	G	095-153	0		1415	W	RTW-2 Influent	40 ML	SC	3	HCL					X						
004	E	G	095-154	0		1420	W	RTW-2 Effluent	40 ML	SC	3	HCL					X						
005	E	G	TB-1	0		1300	W	Trip Blank	40 ML	SC	3	HCL					X						

160-37978 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Miller 5/6/20 1200	Print FED EX	Print
Signature	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print Leonel Menendez 5/7/2020	Print
Signature	Signature 0920	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☑ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-37978-1
SDG Number: 41939

Login Number: 37978
List Number: 1
Creator: Lambert-Sykes, Chenise Y

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37978-1
SDG: 41939

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37978-1
SDG: 41939

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37978-1
SDG: 41939

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-37978-1	41939-001	Water	05/05/20 14:00	05/07/20 09:20	
160-37978-2	41939-002	Water	05/05/20 14:10	05/07/20 09:20	
160-37978-3	41939-003	Water	05/05/20 14:15	05/07/20 09:20	
160-37978-4	41939-004	Water	05/05/20 14:20	05/07/20 09:20	
160-37978-5	41939-005	Water	05/05/20 13:00	05/07/20 09:20	

Client Sample ID: 41939-001

Date Collected: 05/05/20 14:00
Date Received: 05/07/20 09:20

Lab Sample ID: 160-37978-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/18/20 21:24	1
1,1,1-Trichloroethane	**0.46**	**J**	0.50	0.25	ug/L			05/18/20 21:24	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/18/20 21:24	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 21:24	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 21:24	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/18/20 21:24	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/18/20 21:24	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/18/20 21:24	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/18/20 21:24	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/18/20 21:24	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/18/20 21:24	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/18/20 21:24	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/18/20 21:24	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/18/20 21:24	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/18/20 21:24	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/18/20 21:24	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/18/20 21:24	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/18/20 21:24	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/18/20 21:24	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/18/20 21:24	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/18/20 21:24	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/18/20 21:24	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/18/20 21:24	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/18/20 21:24	1
Benzene	0.50	U	0.50	0.26	ug/L			05/18/20 21:24	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/18/20 21:24	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/18/20 21:24	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/18/20 21:24	1
Bromoform	0.50	U	0.50	0.32	ug/L			05/18/20 21:24	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/18/20 21:24	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/18/20 21:24	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/18/20 21:24	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/18/20 21:24	1
Chloroform	**0.83**		0.50	0.24	ug/L			05/18/20 21:24	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/18/20 21:24	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/18/20 21:24	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/18/20 21:24	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/18/20 21:24	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/18/20 21:24	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/18/20 21:24	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/18/20 21:24	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/18/20 21:24	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/18/20 21:24	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/18/20 21:24	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/18/20 21:24	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/18/20 21:24	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/18/20 21:24	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/18/20 21:24	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/18/20 21:24	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37978-1
SDG: 41939

Client Sample ID: 41939-001

Date Collected: 05/05/20 14:00
Date Received: 05/07/20 09:20

Lab Sample ID: 160-37978-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			05/18/20 21:24	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/18/20 21:24	1
Styrene	0.50	U	0.50	0.35	ug/L			05/18/20 21:24	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/18/20 21:24	1
Tetrachloroethene	**5.5**		0.50	0.31	ug/L			05/18/20 21:24	1
Toluene	0.50	U	0.50	0.24	ug/L			05/18/20 21:24	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/18/20 21:24	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/18/20 21:24	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/18/20 21:24	1
Trichlorofluoromethane	**1.5**		0.50	0.26	ug/L			05/18/20 21:24	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/18/20 21:24	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/18/20 21:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*05/18/20 21:24*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*05/18/20 21:24*	*1*

Client Sample ID: 41939-002

Date Collected: 05/05/20 14:10
Date Received: 05/07/20 09:20

Lab Sample ID: 160-37978-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/18/20 22:32	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 22:32	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/18/20 22:32	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 22:32	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 22:32	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/18/20 22:32	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/18/20 22:32	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/18/20 22:32	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/18/20 22:32	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/18/20 22:32	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/18/20 22:32	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/18/20 22:32	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/18/20 22:32	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/18/20 22:32	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/18/20 22:32	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/18/20 22:32	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/18/20 22:32	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/18/20 22:32	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/18/20 22:32	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/18/20 22:32	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/18/20 22:32	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/18/20 22:32	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/18/20 22:32	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/18/20 22:32	1
Benzene	0.50	U	0.50	0.26	ug/L			05/18/20 22:32	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/18/20 22:32	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/18/20 22:32	1

Client Sample ID: 41939-002

Date Collected: 05/05/20 14:10
Date Received: 05/07/20 09:20

Lab Sample ID: 160-37978-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/18/20 22:32	1
Bromoform	0.50	U	0.50	0.32	ug/L			05/18/20 22:32	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/18/20 22:32	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/18/20 22:32	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/18/20 22:32	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/18/20 22:32	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/18/20 22:32	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/18/20 22:32	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/18/20 22:32	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/18/20 22:32	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/18/20 22:32	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/18/20 22:32	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/18/20 22:32	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/18/20 22:32	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/18/20 22:32	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/18/20 22:32	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/18/20 22:32	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/18/20 22:32	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/18/20 22:32	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/18/20 22:32	1
n-Butylbenzene	**0.56**		0.50	0.42	ug/L			05/18/20 22:32	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/18/20 22:32	1
o-Xylene	0.50	U	0.50	0.43	ug/L			05/18/20 22:32	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/18/20 22:32	1
Styrene	0.50	U	0.50	0.35	ug/L			05/18/20 22:32	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/18/20 22:32	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			05/18/20 22:32	1
Toluene	0.50	U	0.50	0.24	ug/L			05/18/20 22:32	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/18/20 22:32	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/18/20 22:32	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/18/20 22:32	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			05/18/20 22:32	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/18/20 22:32	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/18/20 22:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*05/18/20 22:32*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*05/18/20 22:32*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/11/20 14:28	05/12/20 15:26	2

Client Sample ID: 41939-003

Date Collected: 05/05/20 14:15
Date Received: 05/07/20 09:20

Lab Sample ID: 160-37978-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/18/20 22:55	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37978-1
SDG: 41939

Client Sample ID: 41939-003
Date Collected: 05/05/20 14:15
Date Received: 05/07/20 09:20

Lab Sample ID: 160-37978-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 22:55	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/18/20 22:55	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 22:55	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 22:55	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/18/20 22:55	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/18/20 22:55	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/18/20 22:55	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/18/20 22:55	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/18/20 22:55	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/18/20 22:55	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/18/20 22:55	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/18/20 22:55	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/18/20 22:55	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/18/20 22:55	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/18/20 22:55	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/18/20 22:55	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/18/20 22:55	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/18/20 22:55	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/18/20 22:55	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/18/20 22:55	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/18/20 22:55	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/18/20 22:55	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/18/20 22:55	1
Benzene	0.50	U	0.50	0.26	ug/L			05/18/20 22:55	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/18/20 22:55	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/18/20 22:55	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/18/20 22:55	1
Bromoform	0.50	U	0.50	0.32	ug/L			05/18/20 22:55	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/18/20 22:55	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/18/20 22:55	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/18/20 22:55	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/18/20 22:55	1
Chloroform	**0.28**	**J**	0.50	0.24	ug/L			05/18/20 22:55	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/18/20 22:55	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/18/20 22:55	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/18/20 22:55	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/18/20 22:55	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/18/20 22:55	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/18/20 22:55	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/18/20 22:55	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/18/20 22:55	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/18/20 22:55	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/18/20 22:55	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/18/20 22:55	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/18/20 22:55	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/18/20 22:55	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/18/20 22:55	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/18/20 22:55	1
o-Xylene	0.50	U	0.50	0.43	ug/L			05/18/20 22:55	1

Client Sample ID: 41939-003

Date Collected: 05/05/20 14:15
Date Received: 05/07/20 09:20

Lab Sample ID: 160-37978-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/18/20 22:55	1
Styrene	0.50	U	0.50	0.35	ug/L			05/18/20 22:55	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/18/20 22:55	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			05/18/20 22:55	1
Toluene	0.50	U	0.50	0.24	ug/L			05/18/20 22:55	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/18/20 22:55	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/18/20 22:55	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/18/20 22:55	1
Trichlorofluoromethane	**0.94**		0.50	0.26	ug/L			05/18/20 22:55	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/18/20 22:55	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/18/20 22:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*		*05/18/20 22:55*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*05/18/20 22:55*	*1*

Client Sample ID: 41939-004

Date Collected: 05/05/20 14:20
Date Received: 05/07/20 09:20

Lab Sample ID: 160-37978-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/18/20 23:17	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 23:17	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/18/20 23:17	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 23:17	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 23:17	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/18/20 23:17	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/18/20 23:17	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/18/20 23:17	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/18/20 23:17	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/18/20 23:17	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/18/20 23:17	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/18/20 23:17	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/18/20 23:17	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/18/20 23:17	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/18/20 23:17	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/18/20 23:17	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/18/20 23:17	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/18/20 23:17	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/18/20 23:17	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/18/20 23:17	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/18/20 23:17	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/18/20 23:17	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/18/20 23:17	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/18/20 23:17	1
Benzene	0.50	U	0.50	0.26	ug/L			05/18/20 23:17	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/18/20 23:17	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/18/20 23:17	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/18/20 23:17	1

Client Sample ID: 41939-004

Date Collected: 05/05/20 14:20
Date Received: 05/07/20 09:20

Lab Sample ID: 160-37978-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.32	ug/L			05/18/20 23:17	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/18/20 23:17	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/18/20 23:17	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/18/20 23:17	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/18/20 23:17	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/18/20 23:17	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/18/20 23:17	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/18/20 23:17	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/18/20 23:17	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/18/20 23:17	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/18/20 23:17	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/18/20 23:17	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/18/20 23:17	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/18/20 23:17	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/18/20 23:17	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/18/20 23:17	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/18/20 23:17	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/18/20 23:17	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/18/20 23:17	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/18/20 23:17	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/18/20 23:17	1
o-Xylene	0.50	U	0.50	0.43	ug/L			05/18/20 23:17	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/18/20 23:17	1
Styrene	0.50	U	0.50	0.35	ug/L			05/18/20 23:17	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/18/20 23:17	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			05/18/20 23:17	1
Toluene	0.50	U	0.50	0.24	ug/L			05/18/20 23:17	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/18/20 23:17	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/18/20 23:17	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/18/20 23:17	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			05/18/20 23:17	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/18/20 23:17	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/18/20 23:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*		*05/18/20 23:17*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*05/18/20 23:17*	*1*

Client Sample ID: 41939-005

Date Collected: 05/05/20 13:00
Date Received: 05/07/20 09:20

Lab Sample ID: 160-37978-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/18/20 23:40	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 23:40	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/18/20 23:40	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 23:40	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 23:40	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/18/20 23:40	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37978-1
SDG: 41939

Client Sample ID: 41939-005
Date Collected: 05/05/20 13:00
Date Received: 05/07/20 09:20

Lab Sample ID: 160-37978-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/18/20 23:40	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/18/20 23:40	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/18/20 23:40	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/18/20 23:40	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/18/20 23:40	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/18/20 23:40	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/18/20 23:40	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/18/20 23:40	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/18/20 23:40	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/18/20 23:40	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/18/20 23:40	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/18/20 23:40	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/18/20 23:40	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/18/20 23:40	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/18/20 23:40	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/18/20 23:40	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/18/20 23:40	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/18/20 23:40	1
Benzene	0.50	U	0.50	0.26	ug/L			05/18/20 23:40	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/18/20 23:40	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/18/20 23:40	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/18/20 23:40	1
Bromoform	0.50	U	0.50	0.32	ug/L			05/18/20 23:40	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/18/20 23:40	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/18/20 23:40	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/18/20 23:40	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/18/20 23:40	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/18/20 23:40	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/18/20 23:40	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/18/20 23:40	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/18/20 23:40	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/18/20 23:40	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/18/20 23:40	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/18/20 23:40	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/18/20 23:40	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/18/20 23:40	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/18/20 23:40	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/18/20 23:40	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/18/20 23:40	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/18/20 23:40	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/18/20 23:40	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/18/20 23:40	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/18/20 23:40	1
o-Xylene	0.50	U	0.50	0.43	ug/L			05/18/20 23:40	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/18/20 23:40	1
Styrene	0.50	U	0.50	0.35	ug/L			05/18/20 23:40	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/18/20 23:40	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			05/18/20 23:40	1
Toluene	0.50	U	0.50	0.24	ug/L			05/18/20 23:40	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37978-1
SDG: 41939

Client Sample ID: 41939-005
Date Collected: 05/05/20 13:00
Date Received: 05/07/20 09:20

Lab Sample ID: 160-37978-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/18/20 23:40	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/18/20 23:40	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/18/20 23:40	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			05/18/20 23:40	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/18/20 23:40	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/18/20 23:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*05/18/20 23:40*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*05/18/20 23:40*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-470693/7
Matrix: Water
Analysis Batch: 470693

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/18/20 19:09	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 19:09	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/18/20 19:09	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 19:09	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/18/20 19:09	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/18/20 19:09	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/18/20 19:09	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/18/20 19:09	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/18/20 19:09	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/18/20 19:09	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/18/20 19:09	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/18/20 19:09	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/18/20 19:09	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/18/20 19:09	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/18/20 19:09	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/18/20 19:09	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/18/20 19:09	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/18/20 19:09	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/18/20 19:09	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/18/20 19:09	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/18/20 19:09	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/18/20 19:09	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/18/20 19:09	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/18/20 19:09	1
Benzene	0.50	U	0.50	0.26	ug/L			05/18/20 19:09	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/18/20 19:09	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/18/20 19:09	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/18/20 19:09	1
Bromoform	0.50	U	0.50	0.32	ug/L			05/18/20 19:09	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/18/20 19:09	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/18/20 19:09	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/18/20 19:09	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/18/20 19:09	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/18/20 19:09	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/18/20 19:09	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/18/20 19:09	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/18/20 19:09	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/18/20 19:09	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/18/20 19:09	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/18/20 19:09	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/18/20 19:09	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/18/20 19:09	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/18/20 19:09	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/18/20 19:09	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/18/20 19:09	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/18/20 19:09	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/18/20 19:09	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/18/20 19:09	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-470693/7
Matrix: Water
Analysis Batch: 470693

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/18/20 19:09	1
o-Xylene	0.50	U	0.50	0.43	ug/L			05/18/20 19:09	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/18/20 19:09	1
Styrene	0.50	U	0.50	0.35	ug/L			05/18/20 19:09	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/18/20 19:09	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			05/18/20 19:09	1
Toluene	0.50	U	0.50	0.24	ug/L			05/18/20 19:09	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/18/20 19:09	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/18/20 19:09	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/18/20 19:09	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			05/18/20 19:09	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/18/20 19:09	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/18/20 19:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*104*		*70 - 130*		*05/18/20 19:09*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*05/18/20 19:09*	*1*

Lab Sample ID: LCS 160-470693/4
Matrix: Water
Analysis Batch: 470693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	11.5		ug/L		115	70 - 130
1,1,1-Trichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1,2,2-Tetrachloroethane	10.0	11.6		ug/L		116	70 - 130
1,1,2-Trichloroethane	10.0	10.9		ug/L		109	70 - 130
1,1-Dichloroethane	10.0	11.2		ug/L		112	70 - 130
1,1-Dichloroethene	10.0	11.5		ug/L		115	70 - 130
1,1-Dichloropropene	10.0	11.5		ug/L		115	70 - 130
1,2,3-Trichlorobenzene	10.0	11.8		ug/L		118	70 - 130
1,2,3-Trichloropropane	10.0	11.3		ug/L		113	70 - 130
1,2,4-Trichlorobenzene	10.0	11.3		ug/L		113	70 - 130
1,2,4-Trimethylbenzene	10.0	11.8		ug/L		118	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	10.3		ug/L		103	70 - 130
1,2-Dibromoethane	10.0	11.3		ug/L		113	70 - 130
1,2-Dichlorobenzene	10.0	11.1		ug/L		111	70 - 130
1,2-Dichloroethane	10.0	11.0		ug/L		110	70 - 130
1,2-Dichloropropane	10.0	11.3		ug/L		113	70 - 130
1,3,5-Trimethylbenzene	10.0	10.5		ug/L		105	70 - 130
1,3-Dichlorobenzene	10.0	11.1		ug/L		111	70 - 130
1,3-Dichloropropane	10.0	10.8		ug/L		108	70 - 130
1,4-Dichlorobenzene	10.0	11.0		ug/L		110	70 - 130
2,2-Dichloropropane	10.0	10.0		ug/L		100	70 - 130
2-Chlorotoluene	10.0	11.3		ug/L		113	70 - 130
4-Chlorotoluene	10.0	11.4		ug/L		114	70 - 130
4-Isopropyltoluene	10.0	10.6		ug/L		106	70 - 130
Benzene	10.0	11.1		ug/L		111	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-470693/4
Matrix: Water
Analysis Batch: 470693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	11.2		ug/L		112	70 - 130
Bromochloromethane	10.0	11.0		ug/L		110	70 - 130
Bromodichloromethane	10.0	11.3		ug/L		113	70 - 130
Bromoform	10.0	10.2		ug/L		102	70 - 130
Bromomethane	10.0	10.5		ug/L		105	70 - 130
Carbon tetrachloride	10.0	9.99		ug/L		100	70 - 130
Chlorobenzene	10.0	10.7		ug/L		107	70 - 130
Chloroethane	10.0	10.9		ug/L		109	70 - 130
Chloroform	10.0	11.1		ug/L		111	70 - 130
Chloromethane	10.0	10.7		ug/L		107	70 - 130
cis-1,2-Dichloroethene	10.0	11.2		ug/L		112	70 - 130
cis-1,3-Dichloropropene	10.0	10.3		ug/L		103	70 - 130
Dibromochloromethane	10.0	10.4		ug/L		104	70 - 130
Dibromomethane	10.0	10.9		ug/L		109	70 - 130
Dichlorodifluoromethane	10.0	9.95		ug/L		99	70 - 130
Ethylbenzene	10.0	11.1		ug/L		111	70 - 130
Hexachlorobutadiene	10.0	11.0		ug/L		110	70 - 130
Isopropylbenzene	10.0	11.9		ug/L		119	70 - 130
Methylene Chloride	10.0	10.9		ug/L		109	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	11.5		ug/L		115	70 - 130
m-Xylene & p-Xylene	10.0	11.3		ug/L		113	70 - 130
Naphthalene	10.0	12.4		ug/L		124	70 - 130
n-Butylbenzene	10.0	10.4		ug/L		104	70 - 130
N-Propylbenzene	10.0	11.6		ug/L		116	70 - 130
o-Xylene	10.0	11.4		ug/L		114	70 - 130
sec-Butylbenzene	10.0	11.9		ug/L		119	70 - 130
Styrene	10.0	10.3		ug/L		103	70 - 130
tert-Butylbenzene	10.0	11.9		ug/L		119	70 - 130
Tetrachloroethene	10.0	11.2		ug/L		112	70 - 130
Toluene	10.0	10.9		ug/L		109	70 - 130
trans-1,2-Dichloroethene	10.0	11.4		ug/L		114	70 - 130
trans-1,3-Dichloropropene	10.0	10.4		ug/L		104	70 - 130
Trichloroethene	10.0	11.4		ug/L		114	70 - 130
Trichlorofluoromethane	10.0	10.9		ug/L		109	70 - 130
Vinyl chloride	10.0	10.7		ug/L		107	70 - 130
Xylenes, Total	20.0	22.7		ug/L		114	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: LCSD 160-470693/5
Matrix: Water
Analysis Batch: 470693

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	11.5		ug/L		115	70 - 130	1	20
1,1,1-Trichloroethane	10.0	10.0		ug/L		100	70 - 130	1	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-470693/5
Matrix: Water
Analysis Batch: 470693

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	10.0	11.3		ug/L		113	70 - 130	3	20
1,1,2-Trichloroethane	10.0	11.0		ug/L		110	70 - 130	2	20
1,1-Dichloroethane	10.0	11.1		ug/L		111	70 - 130	1	20
1,1-Dichloroethene	10.0	11.2		ug/L		112	70 - 130	3	20
1,1-Dichloropropene	10.0	11.5		ug/L		115	70 - 130	0	20
1,2,3-Trichlorobenzene	10.0	11.7		ug/L		117	70 - 130	0	20
1,2,3-Trichloropropane	10.0	11.5		ug/L		115	70 - 130	2	20
1,2,4-Trichlorobenzene	10.0	11.2		ug/L		112	70 - 130	1	20
1,2,4-Trimethylbenzene	10.0	11.4		ug/L		114	70 - 130	4	20
1,2-Dibromo-3-Chloropropane	10.0	10.5		ug/L		105	70 - 130	2	20
1,2-Dibromoethane	10.0	11.5		ug/L		115	70 - 130	2	20
1,2-Dichlorobenzene	10.0	10.8		ug/L		108	70 - 130	3	20
1,2-Dichloroethane	10.0	11.1		ug/L		111	70 - 130	1	20
1,2-Dichloropropane	10.0	11.1		ug/L		111	70 - 130	1	20
1,3,5-Trimethylbenzene	10.0	10.1		ug/L		101	70 - 130	3	20
1,3-Dichlorobenzene	10.0	10.8		ug/L		108	70 - 130	3	20
1,3-Dichloropropane	10.0	11.1		ug/L		111	70 - 130	2	20
1,4-Dichlorobenzene	10.0	10.6		ug/L		106	70 - 130	4	20
2,2-Dichloropropane	10.0	9.92		ug/L		99	70 - 130	1	20
2-Chlorotoluene	10.0	10.9		ug/L		109	70 - 130	4	20
4-Chlorotoluene	10.0	11.1		ug/L		111	70 - 130	3	20
4-Isopropyltoluene	10.0	10.2		ug/L		102	70 - 130	4	20
Benzene	10.0	11.0		ug/L		110	70 - 130	1	20
Bromobenzene	10.0	10.9		ug/L		109	70 - 130	3	20
Bromochloromethane	10.0	11.3		ug/L		113	70 - 130	2	20
Bromodichloromethane	10.0	11.3		ug/L		113	70 - 130	0	20
Bromoform	10.0	9.97		ug/L		100	70 - 130	3	20
Bromomethane	10.0	10.3		ug/L		103	70 - 130	2	20
Carbon tetrachloride	10.0	9.79		ug/L		98	70 - 130	2	20
Chlorobenzene	10.0	10.9		ug/L		109	70 - 130	1	20
Chloroethane	10.0	10.4		ug/L		104	70 - 130	4	20
Chloroform	10.0	10.9		ug/L		109	70 - 130	2	20
Chloromethane	10.0	10.2		ug/L		102	70 - 130	5	20
cis-1,2-Dichloroethene	10.0	11.1		ug/L		111	70 - 130	1	20
cis-1,3-Dichloropropene	10.0	10.0		ug/L		100	70 - 130	3	20
Dibromochloromethane	10.0	10.7		ug/L		107	70 - 130	3	20
Dibromomethane	10.0	11.3		ug/L		113	70 - 130	3	20
Dichlorodifluoromethane	10.0	9.94		ug/L		99	70 - 130	0	20
Ethylbenzene	10.0	11.1		ug/L		111	70 - 130	0	20
Hexachlorobutadiene	10.0	11.0		ug/L		110	70 - 130	1	20
Isopropylbenzene	10.0	11.5		ug/L		115	70 - 130	3	20
Methylene Chloride	10.0	10.8		ug/L		108	70 - 130	1	20
Methyl-t-Butyl Ether (MTBE)	10.0	11.6		ug/L		116	70 - 130	1	20
m-Xylene & p-Xylene	10.0	11.3		ug/L		113	70 - 130	0	20
Naphthalene	10.0	12.5		ug/L		125	70 - 130	0	20
n-Butylbenzene	10.0	10.0		ug/L		100	70 - 130	3	20
N-Propylbenzene	10.0	11.3		ug/L		113	70 - 130	3	20
o-Xylene	10.0	11.5		ug/L		115	70 - 130	1	20
sec-Butylbenzene	10.0	11.5		ug/L		115	70 - 130	3	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-470693/5
Matrix: Water
Analysis Batch: 470693

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Styrene			10.0	10.4		ug/L		104	70 - 130	0	20
tert-Butylbenzene			10.0	11.5		ug/L		115	70 - 130	3	20
Tetrachloroethene			10.0	11.4		ug/L		114	70 - 130	2	20
Toluene			10.0	11.0		ug/L		110	70 - 130	1	20
trans-1,2-Dichloroethene			10.0	11.0		ug/L		110	70 - 130	3	20
trans-1,3-Dichloropropene			10.0	10.7		ug/L		107	70 - 130	3	20
Trichloroethene			10.0	11.4		ug/L		114	70 - 130	0	20
Trichlorofluoromethane			10.0	10.4		ug/L		104	70 - 130	4	20
Vinyl chloride			10.0	10.6		ug/L		106	70 - 130	1	20
Xylenes, Total			20.0	22.8		ug/L		114	70 - 130	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: 160-37978-1 MS
Matrix: Water
Analysis Batch: 470693

Client Sample ID: 41939-001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.50	U	10.0	12.3		ug/L		123	73 - 123
1,1,1-Trichloroethane	0.46	J	10.0	10.6		ug/L		102	76 - 122
1,1,2,2-Tetrachloroethane	0.50	U	10.0	11.7		ug/L		117	77 - 118
1,1,2-Trichloroethane	0.50	U	10.0	11.4		ug/L		114	79 - 116
1,1-Dichloroethane	0.50	U	10.0	12.0		ug/L		120	81 - 120
1,1-Dichloroethene	0.50	U	10.0	11.9		ug/L		119	68 - 116
1,1-Dichloropropene	0.50	U	10.0	11.9		ug/L		119	74 - 124
1,2,3-Trichlorobenzene	0.59	U	10.0	11.9		ug/L		119	57 - 128
1,2,3-Trichloropropane	0.50	U	10.0	11.0		ug/L		110	72 - 122
1,2,4-Trichlorobenzene	0.55	U	10.0	11.7		ug/L		117	54 - 150
1,2,4-Trimethylbenzene	0.50	U	10.0	12.4		ug/L		124	70 - 125
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	10.0		ug/L		100	58 - 130
1,2-Dibromoethane	0.50	U	10.0	11.6		ug/L		116	76 - 118
1,2-Dichlorobenzene	0.50	U	10.0	11.5		ug/L		115	76 - 120
1,2-Dichloroethane	0.50	U	10.0	11.0		ug/L		110	78 - 123
1,2-Dichloropropane	0.50	U	10.0	11.6		ug/L		116	80 - 119
1,3,5-Trimethylbenzene	0.50	U	10.0	11.1		ug/L		111	76 - 126
1,3-Dichlorobenzene	0.50	U	10.0	11.6		ug/L		116	76 - 120
1,3-Dichloropropane	0.50	U	10.0	11.4		ug/L		114	79 - 116
1,4-Dichlorobenzene	0.50	U	10.0	11.3		ug/L		113	75 - 117
2,2-Dichloropropane	0.50	U	10.0	9.98		ug/L		100	76 - 120
2-Chlorotoluene	0.50	U	10.0	11.9		ug/L		119	79 - 125
4-Chlorotoluene	0.50	U	10.0	11.9		ug/L		119	76 - 136
4-Isopropyltoluene	0.50	U	10.0	11.1		ug/L		111	78 - 132
Benzene	0.50	U	10.0	11.8		ug/L		118	77 - 124
Bromobenzene	0.50	U	10.0	11.5		ug/L		115	77 - 115
Bromochloromethane	0.50	U	10.0	11.3		ug/L		113	73 - 118
Bromodichloromethane	0.50	U	10.0	11.9		ug/L		119	73 - 118

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-37978-1 MS
Matrix: Water
Analysis Batch: 470693

Client Sample ID: 41939-001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromoform	0.50	U	10.0	9.83		ug/L		98	70 - 118
Bromomethane	0.57	U	10.0	10.4		ug/L		104	46 - 147
Carbon tetrachloride	0.50	U	10.0	10.2		ug/L		102	70 - 128
Chlorobenzene	0.50	U	10.0	11.5		ug/L		115	76 - 124
Chloroethane	0.50	U	10.0	10.8		ug/L		108	66 - 129
Chloroform	0.83		10.0	12.5		ug/L		117	77 - 122
Chloromethane	0.50	U	10.0	10.8		ug/L		108	68 - 132
cis-1,2-Dichloroethene	0.50	U	10.0	11.7		ug/L		117	71 - 117
cis-1,3-Dichloropropene	0.50	U	10.0	10.2		ug/L		102	76 - 128
Dibromochloromethane	0.50	U	10.0	10.6		ug/L		106	73 - 114
Dibromomethane	0.50	U	10.0	11.1		ug/L		111	77 - 118
Dichlorodifluoromethane	0.66	U	10.0	10.2		ug/L		102	61 - 134
Ethylbenzene	0.50	U	10.0	12.0		ug/L		120	80 - 122
Hexachlorobutadiene	0.50	U	10.0	11.9		ug/L		119	57 - 144
Isopropylbenzene	0.50	U	10.0	12.5		ug/L		125	85 - 148
Methylene Chloride	0.50	U	10.0	11.4		ug/L		114	65 - 131
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	11.2		ug/L		112	75 - 122
m-Xylene & p-Xylene	1.0	U	10.0	12.1		ug/L		121	70 - 130
Naphthalene	0.67	U	10.0	11.9		ug/L		119	56 - 143
n-Butylbenzene	0.50	U	10.0	10.5		ug/L		105	74 - 128
N-Propylbenzene	0.50	U	10.0	12.1		ug/L		121	80 - 132
o-Xylene	0.50	U	10.0	12.4		ug/L		124	70 - 130
sec-Butylbenzene	0.50	U	10.0	12.5		ug/L		125	78 - 128
Styrene	0.50	U	10.0	10.8		ug/L		108	68 - 125
tert-Butylbenzene	0.50	U	10.0	12.5		ug/L		125	75 - 131
Tetrachloroethene	5.5		10.0	16.9		ug/L		114	71 - 124
Toluene	0.50	U	10.0	11.9		ug/L		119	76 - 127
trans-1,2-Dichloroethene	0.50	U	10.0	11.8		ug/L		118	72 - 117
trans-1,3-Dichloropropene	0.50	U	10.0	10.7		ug/L		107	85 - 135
Trichloroethene	0.50	U	10.0	11.8		ug/L		118	71 - 118
Trichlorofluoromethane	1.5		10.0	11.3		ug/L		98	56 - 127
Vinyl chloride	0.50	U	10.0	10.8		ug/L		108	58 - 114
Xylenes, Total	3.0	U	20.0	24.5		ug/L		123	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 160-37978-1 MSD
Matrix: Water
Analysis Batch: 470693

Client Sample ID: 41939-001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.50	U	10.0	12.6		ug/L		126	73 - 123	3	20
1,1,1-Trichloroethane	0.46	J	10.0	11.0		ug/L		105	76 - 122	3	20
1,1,2,2-Tetrachloroethane	0.50	U	10.0	12.7		ug/L		127	77 - 118	8	20
1,1,2-Trichloroethane	0.50	U	10.0	12.0		ug/L		120	79 - 116	5	20
1,1-Dichloroethane	0.50	U	10.0	12.1		ug/L		121	81 - 120	1	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-37978-1 MSD
Matrix: Water
Analysis Batch: 470693

Client Sample ID: 41939-001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	0.50	U	10.0	12.3		ug/L		123	68 - 116	4	20
1,1-Dichloropropene	0.50	U	10.0	12.1		ug/L		121	74 - 124	2	20
1,2,3-Trichlorobenzene	0.59	U	10.0	12.9		ug/L		129	57 - 128	8	20
1,2,3-Trichloropropane	0.50	U	10.0	12.9		ug/L		129	72 - 122	15	20
1,2,4-Trichlorobenzene	0.55	U	10.0	12.4		ug/L		124	54 - 150	6	20
1,2,4-Trimethylbenzene	0.50	U	10.0	12.8		ug/L		128	70 - 125	3	20
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	11.5		ug/L		115	58 - 130	14	20
1,2-Dibromoethane	0.50	U	10.0	12.5		ug/L		125	76 - 118	8	20
1,2-Dichlorobenzene	0.50	U	10.0	11.9		ug/L		119	76 - 120	4	20
1,2-Dichloroethane	0.50	U	10.0	11.7		ug/L		117	78 - 123	6	20
1,2-Dichloropropane	0.50	U	10.0	11.7		ug/L		117	80 - 119	1	20
1,3,5-Trimethylbenzene	0.50	U	10.0	11.4		ug/L		114	76 - 126	3	20
1,3-Dichlorobenzene	0.50	U	10.0	12.2		ug/L		122	76 - 120	5	20
1,3-Dichloropropane	0.50	U	10.0	12.0		ug/L		120	79 - 116	5	20
1,4-Dichlorobenzene	0.50	U	10.0	11.9		ug/L		119	75 - 117	5	20
2,2-Dichloropropane	0.50	U	10.0	10.2		ug/L		102	76 - 120	2	20
2-Chlorotoluene	0.50	U	10.0	12.3		ug/L		123	79 - 125	3	20
4-Chlorotoluene	0.50	U	10.0	12.3		ug/L		123	76 - 136	4	20
4-Isopropyltoluene	0.50	U	10.0	11.5		ug/L		115	78 - 132	3	20
Benzene	0.50	U	10.0	11.9		ug/L		119	77 - 124	1	20
Bromobenzene	0.50	U	10.0	11.9		ug/L		119	77 - 115	4	20
Bromochloromethane	0.50	U	10.0	11.9		ug/L		119	73 - 118	6	20
Bromodichloromethane	0.50	U	10.0	12.3		ug/L		123	73 - 118	3	20
Bromoform	0.50	U	10.0	11.0		ug/L		110	70 - 118	11	20
Bromomethane	0.57	U	10.0	11.0		ug/L		110	46 - 147	6	20
Carbon tetrachloride	0.50	U	10.0	10.6		ug/L		106	70 - 128	4	20
Chlorobenzene	0.50	U	10.0	11.6		ug/L		116	76 - 124	1	20
Chloroethane	0.50	U	10.0	11.2		ug/L		112	66 - 129	4	20
Chloroform	0.83		10.0	12.7		ug/L		118	77 - 122	1	20
Chloromethane	0.50	U	10.0	11.3		ug/L		113	68 - 132	4	20
cis-1,2-Dichloroethene	0.50	U	10.0	12.0		ug/L		120	71 - 117	3	20
cis-1,3-Dichloropropene	0.50	U	10.0	10.3		ug/L		103	76 - 128	1	20
Dibromochloromethane	0.50	U	10.0	11.2		ug/L		112	73 - 114	5	20
Dibromomethane	0.50	U	10.0	11.9		ug/L		119	77 - 118	7	20
Dichlorodifluoromethane	0.66	U	10.0	11.0		ug/L		110	61 - 134	8	20
Ethylbenzene	0.50	U	10.0	12.0		ug/L		120	80 - 122	0	20
Hexachlorobutadiene	0.50	U	10.0	12.4		ug/L		124	57 - 144	4	20
Isopropylbenzene	0.50	U	10.0	12.9		ug/L		129	85 - 148	3	20
Methylene Chloride	0.50	U	10.0	12.0		ug/L		120	65 - 131	5	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	12.2		ug/L		122	75 - 122	8	20
m-Xylene & p-Xylene	1.0	U	10.0	12.2		ug/L		122	70 - 130	1	20
Naphthalene	0.67	U	10.0	13.4		ug/L		134	56 - 143	12	20
n-Butylbenzene	0.50	U	10.0	11.0		ug/L		110	74 - 128	5	20
N-Propylbenzene	0.50	U	10.0	12.7		ug/L		127	80 - 132	4	20
o-Xylene	0.50	U	10.0	12.5		ug/L		125	70 - 130	1	20
sec-Butylbenzene	0.50	U	10.0	12.9		ug/L		129	78 - 128	3	20
Styrene	0.50	U	10.0	10.9		ug/L		109	68 - 125	1	20
tert-Butylbenzene	0.50	U	10.0	12.9		ug/L		129	75 - 131	3	20
Tetrachloroethene	5.5		10.0	17.6		ug/L		121	71 - 124	4	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-37978-1 MSD
Matrix: Water
Analysis Batch: 470693

Client Sample ID: 41939-001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene	0.50	U	10.0	12.0		ug/L		120	76 - 127	1	20
trans-1,2-Dichloroethene	0.50	U	10.0	12.0		ug/L		120	72 - 117	2	20
trans-1,3-Dichloropropene	0.50	U	10.0	11.2		ug/L		112	85 - 135	5	20
Trichloroethene	0.50	U	10.0	11.8		ug/L		118	71 - 118	0	20
Trichlorofluoromethane	1.5		10.0	12.0		ug/L		105	56 - 127	6	20
Vinyl chloride	0.50	U	10.0	11.5		ug/L		115	58 - 114	6	20
Xylenes, Total	3.0	U	20.0	24.7		ug/L		124	78 - 128	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-470013/1-A
Matrix: Water
Analysis Batch: 470280

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 470013

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/11/20 14:28	05/12/20 14:14	2

Lab Sample ID: LCS 160-470013/2-A
Matrix: Water
Analysis Batch: 470280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 470013

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	200		ug/L		100	82 - 116		

Lab Sample ID: 160-37931-C-1-B MS ^10
Matrix: Water
Analysis Batch: 470280

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 470013

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	10	U	200	189		ug/L		94	82 - 116		

Lab Sample ID: 160-37931-C-1-C MSD ^10
Matrix: Water
Analysis Batch: 470280

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 470013

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	10	U	200	192		ug/L		96	82 - 116	2	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37978-1
SDG: 41939

GC/MS VOA

Analysis Batch: 470693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37978-1	41939-001	Total/NA	Water	524.2	
160-37978-2	41939-002	Total/NA	Water	524.2	
160-37978-3	41939-003	Total/NA	Water	524.2	
160-37978-4	41939-004	Total/NA	Water	524.2	
160-37978-5	41939-005	Total/NA	Water	524.2	
MB 160-470693/7	Method Blank	Total/NA	Water	524.2	
LCS 160-470693/4	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-470693/5	Lab Control Sample Dup	Total/NA	Water	524.2	
160-37978-1 MS	41939-001	Total/NA	Water	524.2	
160-37978-1 MSD	41939-001	Total/NA	Water	524.2	

Metals

Prep Batch: 470013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37978-2	41939-002	Total/NA	Water	3010A	
MB 160-470013/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-470013/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-37931-C-1-B MS ^10	Matrix Spike	Dissolved	Water	3010A	
160-37931-C-1-C MSD ^10	Matrix Spike Duplicate	Dissolved	Water	3010A	

Analysis Batch: 470280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-37978-2	41939-002	Total/NA	Water	6020A	470013
MB 160-470013/1-A	Method Blank	Total/NA	Water	6020A	470013
LCS 160-470013/2-A	Lab Control Sample	Total/NA	Water	6020A	470013
160-37931-C-1-B MS ^10	Matrix Spike	Dissolved	Water	6020A	470013
160-37931-C-1-C MSD ^10	Matrix Spike Duplicate	Dissolved	Water	6020A	470013

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-37978-1
SDG: 41939

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		DCZ	BFB										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
160-37978-1	41939-001	103	102										
160-37978-1 MS	41939-001	101	101										
160-37978-1 MSD	41939-001	102	102										
160-37978-2	41939-002	103	103										
160-37978-3	41939-003	105	104										
160-37978-4	41939-004	102	101										
160-37978-5	41939-005	103	102										
LCS 160-470693/4	Lab Control Sample	102	102										
LCSD 160-470693/5	Lab Control Sample Dup	101	100										
MB 160-470693/7	Method Blank	104	103										

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
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Laboratory Job ID: 160-38141-1
Laboratory Sample Delivery Group: 41973
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
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Attn: Larry Singh

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6/8/2020 4:44:45 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-38141-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-38141-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 5/22/2020 8:27 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.2º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41973-001 (160-38141-1) and 41973-002 (160-38141-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 05/27/2020.

Job ID: 160-38141-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-471309:
The continuing calibration verification (CCV) recovered outside acceptance criteria, low biased, for Iodomethane, Bromomethane, and N-Propylbenzene. A reporting limit (RL) standard was analyzed, and the target analytes were detected. Since the associated samples were non-detect for the analytes, the data was reported: 41973-001 (160-38141-1), 41973-002 (160-38141-2), (160-38137-A-10), (160-38137-A-10 MS), and (160-38137-A-10 MSD).

The LCS/LCSD recovered outside acceptance criteria for N-Propylbenzene. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data was reported: 41973-001 (160-38141-1), 41973-002 (160-38141-2), (160-38137-A-10), (160-38137-A-10 MS), and (160-38137-A-10 MSD).

The MS/MSD recovered outside acceptance criteria for N-Propylbenzene. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data was reported: 41973-001 (160-38141-1), 41973-002 (160-38141-2), (160-38137-A-10), (160-38137-A-10 MS), and (160-38137-A-10 MSD).

The method blank contained n-Butylbenzene above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis were not performed: 41973-001 (160-38141-1), 41973-002 (160-38141-2), (160-38137-A-10), (160-38137-A-10 MS), and (160-38137-A-10 MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP-MS)
Sample 41973-002 (160-38141-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 05/27/2020 and analyzed on 06/01/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

Preparation Batch 160-471331, Analytical Batch 160-471670:
Due to linear range check (LRC) failures, the linear range for Thallium has been lowered to the concentration of the highest calibration standard (40 ppb): The LCS/MS/MSD were above the LRC, but were within acceptable limits: (LCS 160-471331/2-A), (160-38163-A-3-B MS), and (160-38163-A-3-C MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41973

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No. 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No. 22486/23396 Dept. ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
E. Kramer	Sampler: J Milan	Phone: 314-298-8566
B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD Use TB-1 from COC 41972

Type UID	Smp	Coll	Sample Information: Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information: Name/Description	Cont. Vol/Units	Cont. Type	# of Cont	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	5/19/20	1130	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	1135	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	1135	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
~~003~~	~~E~~	~~G~~	~~095-153~~	~~0~~			W	RTW-2 Influent	40 ML	SC	3	HCL					X					
~~004~~	~~E~~	~~G~~	~~095-154~~	~~0~~			W	~~RTW-2 Effluent~~	~~40 ML~~	SC	3	HCL					X					
005	E	G	TB-1	0			W	Trip Blank	40 ML	SC	3	HCL					X					

160-38141 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milan 5/21/20 1300	Print FED EX	Print
Signature	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print Leonel Mercieyes 5/22/2020	Print
Signature	Signature 0827	Signature

Contractor Lab Sample Disposal: ☑ Disposal by Lab ☐ Return To Client ☐ Archive For ____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required: ☐ Rush (1 Day) ☑ 14 Days ☐ 30 Days ☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-38141-1
SDG Number: 41973

Login Number: 38141
List Number: 1
Creator: Awalt, Jayna K

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38141-1
SDG: 41973

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38141-1
SDG: 41973

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38141-1
SDG: 41973

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-38141-1	41973-001	Water	05/19/20 11:30	05/22/20 08:27	
160-38141-2	41973-002	Water	05/19/20 11:35	05/22/20 08:27	

Client Sample ID: 41973-001

Date Collected: 05/19/20 11:30
Date Received: 05/22/20 08:27

Lab Sample ID: 160-38141-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/27/20 20:37	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/27/20 20:37	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/27/20 20:37	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/27/20 20:37	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/27/20 20:37	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/27/20 20:37	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/27/20 20:37	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/27/20 20:37	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/27/20 20:37	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/27/20 20:37	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/27/20 20:37	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/27/20 20:37	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/27/20 20:37	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/27/20 20:37	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/27/20 20:37	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/27/20 20:37	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/27/20 20:37	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/27/20 20:37	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/27/20 20:37	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/27/20 20:37	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/27/20 20:37	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/27/20 20:37	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/27/20 20:37	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/27/20 20:37	1
Benzene	0.50	U	0.50	0.26	ug/L			05/27/20 20:37	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/27/20 20:37	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/27/20 20:37	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/27/20 20:37	1
Bromoform	0.50	U	0.50	0.32	ug/L			05/27/20 20:37	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/27/20 20:37	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/27/20 20:37	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/27/20 20:37	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/27/20 20:37	1
Chloroform	**0.80**		0.50	0.24	ug/L			05/27/20 20:37	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/27/20 20:37	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/27/20 20:37	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/27/20 20:37	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/27/20 20:37	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/27/20 20:37	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/27/20 20:37	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/27/20 20:37	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/27/20 20:37	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/27/20 20:37	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/27/20 20:37	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/27/20 20:37	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/27/20 20:37	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/27/20 20:37	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/27/20 20:37	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/27/20 20:37	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38141-1
SDG: 41973

Client Sample ID: 41973-001

Lab Sample ID: 160-38141-1

Date Collected: 05/19/20 11:30
Matrix: Water
Date Received: 05/22/20 08:27

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			05/27/20 20:37	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/27/20 20:37	1
Styrene	0.50	U	0.50	0.35	ug/L			05/27/20 20:37	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/27/20 20:37	1
Tetrachloroethene	**4.8**		0.50	0.31	ug/L			05/27/20 20:37	1
Toluene	0.50	U	0.50	0.24	ug/L			05/27/20 20:37	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/27/20 20:37	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/27/20 20:37	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/27/20 20:37	1
Trichlorofluoromethane	**0.78**		0.50	0.26	ug/L			05/27/20 20:37	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/27/20 20:37	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/27/20 20:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*		*05/27/20 20:37*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*05/27/20 20:37*	*1*

Client Sample ID: 41973-002

Lab Sample ID: 160-38141-2

Date Collected: 05/19/20 11:35
Matrix: Water
Date Received: 05/22/20 08:27

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/27/20 21:03	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/27/20 21:03	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/27/20 21:03	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/27/20 21:03	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/27/20 21:03	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/27/20 21:03	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/27/20 21:03	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/27/20 21:03	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/27/20 21:03	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/27/20 21:03	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/27/20 21:03	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/27/20 21:03	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/27/20 21:03	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/27/20 21:03	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/27/20 21:03	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/27/20 21:03	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/27/20 21:03	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/27/20 21:03	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/27/20 21:03	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/27/20 21:03	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/27/20 21:03	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/27/20 21:03	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/27/20 21:03	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/27/20 21:03	1
Benzene	0.50	U	0.50	0.26	ug/L			05/27/20 21:03	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/27/20 21:03	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/27/20 21:03	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38141-1
SDG: 41973

Client Sample ID: 41973-002
Date Collected: 05/19/20 11:35
Date Received: 05/22/20 08:27

Lab Sample ID: 160-38141-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/27/20 21:03	1
Bromoform	0.50	U	0.50	0.32	ug/L			05/27/20 21:03	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/27/20 21:03	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/27/20 21:03	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/27/20 21:03	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/27/20 21:03	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/27/20 21:03	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/27/20 21:03	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/27/20 21:03	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/27/20 21:03	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/27/20 21:03	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/27/20 21:03	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/27/20 21:03	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/27/20 21:03	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/27/20 21:03	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/27/20 21:03	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/27/20 21:03	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/27/20 21:03	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/27/20 21:03	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/27/20 21:03	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			05/27/20 21:03	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/27/20 21:03	1
o-Xylene	0.50	U	0.50	0.43	ug/L			05/27/20 21:03	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/27/20 21:03	1
Styrene	0.50	U	0.50	0.35	ug/L			05/27/20 21:03	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/27/20 21:03	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			05/27/20 21:03	1
Toluene	0.50	U	0.50	0.24	ug/L			05/27/20 21:03	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/27/20 21:03	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/27/20 21:03	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/27/20 21:03	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			05/27/20 21:03	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/27/20 21:03	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/27/20 21:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*		*05/27/20 21:03*	*1*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*		*05/27/20 21:03*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/27/20 13:37	06/01/20 19:28	2

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-471309/7
Matrix: Water
Analysis Batch: 471309

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			05/27/20 12:56	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/27/20 12:56	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			05/27/20 12:56	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			05/27/20 12:56	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			05/27/20 12:56	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			05/27/20 12:56	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			05/27/20 12:56	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			05/27/20 12:56	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			05/27/20 12:56	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			05/27/20 12:56	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			05/27/20 12:56	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			05/27/20 12:56	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			05/27/20 12:56	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			05/27/20 12:56	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			05/27/20 12:56	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			05/27/20 12:56	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			05/27/20 12:56	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			05/27/20 12:56	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			05/27/20 12:56	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			05/27/20 12:56	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			05/27/20 12:56	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			05/27/20 12:56	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			05/27/20 12:56	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			05/27/20 12:56	1
Benzene	0.50	U	0.50	0.26	ug/L			05/27/20 12:56	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			05/27/20 12:56	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			05/27/20 12:56	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			05/27/20 12:56	1
Bromoform	0.50	U	0.50	0.32	ug/L			05/27/20 12:56	1
Bromomethane	0.57	U	0.57	0.57	ug/L			05/27/20 12:56	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			05/27/20 12:56	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			05/27/20 12:56	1
Chloroethane	0.50	U	0.50	0.32	ug/L			05/27/20 12:56	1
Chloroform	0.50	U	0.50	0.24	ug/L			05/27/20 12:56	1
Chloromethane	0.50	U	0.50	0.32	ug/L			05/27/20 12:56	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			05/27/20 12:56	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			05/27/20 12:56	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			05/27/20 12:56	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			05/27/20 12:56	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			05/27/20 12:56	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			05/27/20 12:56	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			05/27/20 12:56	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			05/27/20 12:56	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			05/27/20 12:56	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			05/27/20 12:56	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			05/27/20 12:56	1
Naphthalene	0.67	U	0.67	0.57	ug/L			05/27/20 12:56	1
n-Butylbenzene	0.610		0.50	0.42	ug/L			05/27/20 12:56	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-471309/7
Matrix: Water
Analysis Batch: 471309

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			05/27/20 12:56	1
o-Xylene	0.50	U	0.50	0.43	ug/L			05/27/20 12:56	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			05/27/20 12:56	1
Styrene	0.50	U	0.50	0.35	ug/L			05/27/20 12:56	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			05/27/20 12:56	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			05/27/20 12:56	1
Toluene	0.50	U	0.50	0.24	ug/L			05/27/20 12:56	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			05/27/20 12:56	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			05/27/20 12:56	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			05/27/20 12:56	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			05/27/20 12:56	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/27/20 12:56	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			05/27/20 12:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*104*		*70 - 130*		*05/27/20 12:56*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*05/27/20 12:56*	*1*

Lab Sample ID: LCS 160-471309/4
Matrix: Water
Analysis Batch: 471309

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.7		ug/L		107	70 - 130
1,1,1-Trichloroethane	10.0	10.8		ug/L		108	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.2		ug/L		102	70 - 130
1,1,2-Trichloroethane	10.0	9.95		ug/L		100	70 - 130
1,1-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethene	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloropropene	10.0	10.8		ug/L		108	70 - 130
1,2,3-Trichlorobenzene	10.0	11.4		ug/L		114	70 - 130
1,2,3-Trichloropropane	10.0	10.0		ug/L		100	70 - 130
1,2,4-Trichlorobenzene	10.0	11.7		ug/L		117	70 - 130
1,2,4-Trimethylbenzene	10.0	11.6		ug/L		116	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	10.4		ug/L		104	70 - 130
1,2-Dibromoethane	10.0	10.3		ug/L		103	70 - 130
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130
1,2-Dichloroethane	10.0	10.2		ug/L		102	70 - 130
1,2-Dichloropropane	10.0	10.0		ug/L		100	70 - 130
1,3,5-Trimethylbenzene	10.0	11.4		ug/L		114	70 - 130
1,3-Dichlorobenzene	10.0	10.5		ug/L		105	70 - 130
1,3-Dichloropropane	10.0	10.0		ug/L		100	70 - 130
1,4-Dichlorobenzene	10.0	10.5		ug/L		105	70 - 130
2,2-Dichloropropane	10.0	9.01		ug/L		90	70 - 130
2-Chlorotoluene	10.0	10.5		ug/L		105	70 - 130
4-Chlorotoluene	10.0	10.8		ug/L		108	70 - 130
4-Isopropyltoluene	10.0	12.2		ug/L		122	70 - 130
Benzene	10.0	10.1		ug/L		101	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-471309/4
Matrix: Water
Analysis Batch: 471309

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.0		ug/L		100	70 - 130
Bromochloromethane	10.0	9.12		ug/L		91	70 - 130
Bromodichloromethane	10.0	10.5		ug/L		105	70 - 130
Bromoform	10.0	10.5		ug/L		105	70 - 130
Bromomethane	10.0	8.59		ug/L		86	70 - 130
Carbon tetrachloride	10.0	11.2		ug/L		112	70 - 130
Chlorobenzene	10.0	10.3		ug/L		103	70 - 130
Chloroethane	10.0	8.70		ug/L		87	70 - 130
Chloroform	10.0	10.6		ug/L		106	70 - 130
Chloromethane	10.0	8.89		ug/L		89	70 - 130
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	70 - 130
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	70 - 130
Dibromochloromethane	10.0	10.6		ug/L		106	70 - 130
Dibromomethane	10.0	9.73		ug/L		97	70 - 130
Dichlorodifluoromethane	10.0	8.54		ug/L		85	70 - 130
Ethylbenzene	10.0	10.6		ug/L		106	70 - 130
Hexachlorobutadiene	10.0	11.5		ug/L		115	70 - 130
Isopropylbenzene	10.0	11.1		ug/L		111	70 - 130
Methylene Chloride	10.0	9.62		ug/L		96	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.1		ug/L		101	70 - 130
m-Xylene & p-Xylene	10.0	10.6		ug/L		106	70 - 130
Naphthalene	10.0	10.7		ug/L		107	70 - 130
n-Butylbenzene	10.0	10.2		ug/L		102	70 - 130
N-Propylbenzene	10.0	6.87		ug/L		69	70 - 130
o-Xylene	10.0	10.8		ug/L		108	70 - 130
sec-Butylbenzene	10.0	11.7		ug/L		117	70 - 130
Styrene	10.0	11.1		ug/L		111	70 - 130
tert-Butylbenzene	10.0	11.4		ug/L		114	70 - 130
Tetrachloroethene	10.0	10.6		ug/L		106	70 - 130
Toluene	10.0	9.97		ug/L		100	70 - 130
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 130
trans-1,3-Dichloropropene	10.0	10.8		ug/L		108	70 - 130
Trichloroethene	10.0	10.5		ug/L		105	70 - 130
Trichlorofluoromethane	10.0	9.65		ug/L		96	70 - 130
Vinyl chloride	10.0	8.73		ug/L		87	70 - 130
Xylenes, Total	20.0	21.4		ug/L		107	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 160-471309/5
Matrix: Water
Analysis Batch: 471309

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.3		ug/L		103	70 - 130	4	20
1,1,1-Trichloroethane	10.0	10.4		ug/L		104	70 - 130	4	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-471309/5
Matrix: Water
Analysis Batch: 471309

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	10.0	9.60		ug/L		96	70 - 130	6	20
1,1,2-Trichloroethane	10.0	9.57		ug/L		96	70 - 130	4	20
1,1-Dichloroethane	10.0	9.68		ug/L		97	70 - 130	4	20
1,1-Dichloroethene	10.0	9.77		ug/L		98	70 - 130	3	20
1,1-Dichloropropene	10.0	10.2		ug/L		102	70 - 130	5	20
1,2,3-Trichlorobenzene	10.0	10.6		ug/L		106	70 - 130	7	20
1,2,3-Trichloropropane	10.0	9.47		ug/L		95	70 - 130	6	20
1,2,4-Trichlorobenzene	10.0	11.2		ug/L		112	70 - 130	5	20
1,2,4-Trimethylbenzene	10.0	11.2		ug/L		112	70 - 130	4	20
1,2-Dibromo-3-Chloropropane	10.0	9.74		ug/L		97	70 - 130	7	20
1,2-Dibromoethane	10.0	10.0		ug/L		100	70 - 130	3	20
1,2-Dichlorobenzene	10.0	9.94		ug/L		99	70 - 130	4	20
1,2-Dichloroethane	10.0	9.71		ug/L		97	70 - 130	5	20
1,2-Dichloropropane	10.0	9.81		ug/L		98	70 - 130	2	20
1,3,5-Trimethylbenzene	10.0	11.1		ug/L		111	70 - 130	3	20
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130	3	20
1,3-Dichloropropane	10.0	9.68		ug/L		97	70 - 130	4	20
1,4-Dichlorobenzene	10.0	10.1		ug/L		101	70 - 130	4	20
2,2-Dichloropropane	10.0	8.46		ug/L		85	70 - 130	6	20
2-Chlorotoluene	10.0	10.2		ug/L		102	70 - 130	3	20
4-Chlorotoluene	10.0	10.5		ug/L		105	70 - 130	3	20
4-Isopropyltoluene	10.0	11.8		ug/L		118	70 - 130	3	20
Benzene	10.0	9.75		ug/L		98	70 - 130	4	20
Bromobenzene	10.0	9.49		ug/L		95	70 - 130	5	20
Bromochloromethane	10.0	8.60		ug/L		86	70 - 130	6	20
Bromodichloromethane	10.0	10.1		ug/L		101	70 - 130	5	20
Bromoform	10.0	10.0		ug/L		100	70 - 130	4	20
Bromomethane	10.0	8.85		ug/L		88	70 - 130	3	20
Carbon tetrachloride	10.0	10.6		ug/L		106	70 - 130	5	20
Chlorobenzene	10.0	9.92		ug/L		99	70 - 130	4	20
Chloroethane	10.0	8.69		ug/L		87	70 - 130	0	20
Chloroform	10.0	10.1		ug/L		101	70 - 130	5	20
Chloromethane	10.0	8.79		ug/L		88	70 - 130	1	20
cis-1,2-Dichloroethene	10.0	9.77		ug/L		98	70 - 130	4	20
cis-1,3-Dichloropropene	10.0	10.3		ug/L		103	70 - 130	3	20
Dibromochloromethane	10.0	10.2		ug/L		102	70 - 130	4	20
Dibromomethane	10.0	9.18		ug/L		92	70 - 130	6	20
Dichlorodifluoromethane	10.0	8.46		ug/L		85	70 - 130	1	20
Ethylbenzene	10.0	10.3		ug/L		103	70 - 130	3	20
Hexachlorobutadiene	10.0	11.0		ug/L		110	70 - 130	4	20
Isopropylbenzene	10.0	10.6		ug/L		106	70 - 130	4	20
Methylene Chloride	10.0	9.30		ug/L		93	70 - 130	3	20
Methyl-t-Butyl Ether (MTBE)	10.0	9.65		ug/L		96	70 - 130	5	20
m-Xylene & p-Xylene	10.0	10.3		ug/L		103	70 - 130	3	20
Naphthalene	10.0	9.91		ug/L		99	70 - 130	8	20
n-Butylbenzene	10.0	9.85		ug/L		98	70 - 130	4	20
N-Propylbenzene	10.0	0.50	U	ug/L		0	70 - 130	200	20
o-Xylene	10.0	10.6		ug/L		106	70 - 130	2	20
sec-Butylbenzene	10.0	11.1		ug/L		111	70 - 130	5	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-471309/5
Matrix: Water
Analysis Batch: 471309

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Styrene			10.0	10.7		ug/L		107	70 - 130	3	20
tert-Butylbenzene			10.0	11.0		ug/L		110	70 - 130	4	20
Tetrachloroethene			10.0	10.3		ug/L		103	70 - 130	3	20
Toluene			10.0	9.65		ug/L		97	70 - 130	3	20
trans-1,2-Dichloroethene			10.0	9.85		ug/L		99	70 - 130	4	20
trans-1,3-Dichloropropene			10.0	10.2		ug/L		102	70 - 130	5	20
Trichloroethene			10.0	9.97		ug/L		100	70 - 130	5	20
Trichlorofluoromethane			10.0	9.36		ug/L		94	70 - 130	3	20
Vinyl chloride			10.0	8.74		ug/L		87	70 - 130	0	20
Xylenes, Total			20.0	20.9		ug/L		105	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: 160-38137-A-10 MS
Matrix: Water
Analysis Batch: 471309

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.50	U	10.0	10.7		ug/L		107	73 - 123
1,1,1-Trichloroethane	0.50	U	10.0	11.0		ug/L		110	76 - 122
1,1,2,2-Tetrachloroethane	0.50	U	10.0	10.6		ug/L		106	77 - 118
1,1,2-Trichloroethane	0.50	U	10.0	10.1		ug/L		101	79 - 116
1,1-Dichloroethane	0.50	U	10.0	10.4		ug/L		104	81 - 120
1,1-Dichloroethene	0.50	U	10.0	9.75		ug/L		97	68 - 116
1,1-Dichloropropene	0.50	U	10.0	10.5		ug/L		105	74 - 124
1,2,3-Trichlorobenzene	0.59	U	10.0	11.3		ug/L		113	57 - 128
1,2,3-Trichloropropane	0.50	U	10.0	10.7		ug/L		107	72 - 122
1,2,4-Trichlorobenzene	0.55	U	10.0	11.3		ug/L		113	54 - 150
1,2,4-Trimethylbenzene	0.50	U	10.0	11.6		ug/L		116	70 - 125
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	10.5		ug/L		105	58 - 130
1,2-Dibromoethane	0.50	U	10.0	10.5		ug/L		105	76 - 118
1,2-Dichlorobenzene	0.50	U	10.0	10.5		ug/L		105	76 - 120
1,2-Dichloroethane	0.50	U	10.0	10.9		ug/L		109	78 - 123
1,2-Dichloropropane	0.50	U	10.0	10.3		ug/L		103	80 - 119
1,3,5-Trimethylbenzene	0.50	U	10.0	11.1		ug/L		111	76 - 126
1,3-Dichlorobenzene	0.50	U	10.0	10.5		ug/L		105	76 - 120
1,3-Dichloropropane	0.50	U	10.0	10.0		ug/L		100	79 - 116
1,4-Dichlorobenzene	0.50	U	10.0	10.6		ug/L		106	75 - 117
2,2-Dichloropropane	0.50	U	10.0	9.78		ug/L		98	76 - 120
2-Chlorotoluene	0.50	U	10.0	10.4		ug/L		104	79 - 125
4-Chlorotoluene	0.50	U	10.0	10.6		ug/L		106	76 - 136
4-Isopropyltoluene	0.50	U	10.0	11.8		ug/L		118	78 - 132
Benzene	0.50	U	10.0	10.2		ug/L		102	77 - 124
Bromobenzene	0.50	U	10.0	10.1		ug/L		101	77 - 115
Bromochloromethane	0.50	U	10.0	10.0		ug/L		100	73 - 118
Bromodichloromethane	0.50	U	10.0	10.8		ug/L		108	73 - 118

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38137-A-10 MS
Matrix: Water
Analysis Batch: 471309

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromoform	0.50	U	10.0	10.5		ug/L		105	70 - 118
Bromomethane	0.57	U	10.0	7.83		ug/L		78	46 - 147
Carbon tetrachloride	0.50	U	10.0	11.1		ug/L		111	70 - 128
Chlorobenzene	0.50	U	10.0	10.1		ug/L		101	76 - 124
Chloroethane	0.50	U	10.0	8.18		ug/L		82	66 - 129
Chloroform	0.50	U	10.0	11.0		ug/L		110	77 - 122
Chloromethane	0.50	U	10.0	7.93		ug/L		79	68 - 132
cis-1,2-Dichloroethene	0.50	U	10.0	10.0		ug/L		100	71 - 117
cis-1,3-Dichloropropene	0.50	U	10.0	10.2		ug/L		102	76 - 128
Dibromochloromethane	0.50	U	10.0	10.5		ug/L		105	73 - 114
Dibromomethane	0.50	U	10.0	10.3		ug/L		103	77 - 118
Dichlorodifluoromethane	0.66	U	10.0	8.18		ug/L		82	61 - 134
Ethylbenzene	0.50	U	10.0	10.3		ug/L		103	80 - 122
Hexachlorobutadiene	0.50	U	10.0	10.7		ug/L		107	57 - 144
Isopropylbenzene	0.50	U	10.0	10.7		ug/L		107	85 - 148
Methylene Chloride	0.50	U	10.0	9.55		ug/L		95	65 - 131
Methyl-t-Butyl Ether (MTBE)	0.79		10.0	11.5		ug/L		107	75 - 122
m-Xylene & p-Xylene	1.0	U	10.0	10.2		ug/L		102	70 - 130
Naphthalene	0.67	U	10.0	10.1		ug/L		101	56 - 143
n-Butylbenzene	0.50	U	10.0	9.76		ug/L		98	74 - 128
N-Propylbenzene	0.50	U	10.0	6.79		ug/L		68	80 - 132
o-Xylene	0.50	U	10.0	10.6		ug/L		106	70 - 130
sec-Butylbenzene	0.50	U	10.0	11.2		ug/L		112	78 - 128
Styrene	0.50	U	10.0	10.7		ug/L		107	68 - 125
tert-Butylbenzene	0.50	U	10.0	11.2		ug/L		112	75 - 131
Tetrachloroethene	0.50	U	10.0	10.3		ug/L		103	71 - 124
Toluene	0.50	U	10.0	9.61		ug/L		96	76 - 127
trans-1,2-Dichloroethene	0.50	U	10.0	9.74		ug/L		97	72 - 117
trans-1,3-Dichloropropene	0.50	U	10.0	10.4		ug/L		104	85 - 135
Trichloroethene	0.50	U	10.0	10.5		ug/L		105	71 - 118
Trichlorofluoromethane	0.50	U	10.0	9.56		ug/L		96	56 - 127
Vinyl chloride	0.50	U	10.0	7.42		ug/L		74	58 - 114
Xylenes, Total	3.0	U	20.0	20.8		ug/L		104	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: 160-38137-A-10 MSD
Matrix: Water
Analysis Batch: 471309

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.50	U	10.0	10.6		ug/L		106	73 - 123	1	20
1,1,1-Trichloroethane	0.50	U	10.0	10.7		ug/L		107	76 - 122	3	20
1,1,2,2-Tetrachloroethane	0.50	U	10.0	10.9		ug/L		109	77 - 118	2	20
1,1,2-Trichloroethane	0.50	U	10.0	10.4		ug/L		104	79 - 116	3	20
1,1-Dichloroethane	0.50	U	10.0	10.3		ug/L		103	81 - 120	1	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38137-A-10 MSD
Matrix: Water
Analysis Batch: 471309

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	0.50	U	10.0	9.63		ug/L		96	68 - 116	1	20
1,1-Dichloropropene	0.50	U	10.0	10.2		ug/L		102	74 - 124	3	20
1,2,3-Trichlorobenzene	0.59	U	10.0	11.1		ug/L		111	57 - 128	1	20
1,2,3-Trichloropropane	0.50	U	10.0	10.7		ug/L		107	72 - 122	1	20
1,2,4-Trichlorobenzene	0.55	U	10.0	11.2		ug/L		112	54 - 150	1	20
1,2,4-Trimethylbenzene	0.50	U	10.0	10.8		ug/L		108	70 - 125	8	20
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	11.0		ug/L		110	58 - 130	4	20
1,2-Dibromoethane	0.50	U	10.0	10.7		ug/L		107	76 - 118	1	20
1,2-Dichlorobenzene	0.50	U	10.0	10.3		ug/L		103	76 - 120	2	20
1,2-Dichloroethane	0.50	U	10.0	10.6		ug/L		106	78 - 123	3	20
1,2-Dichloropropane	0.50	U	10.0	10.1		ug/L		101	80 - 119	1	20
1,3,5-Trimethylbenzene	0.50	U	10.0	10.5		ug/L		105	76 - 126	6	20
1,3-Dichlorobenzene	0.50	U	10.0	10.1		ug/L		101	76 - 120	4	20
1,3-Dichloropropane	0.50	U	10.0	10.5		ug/L		105	79 - 116	4	20
1,4-Dichlorobenzene	0.50	U	10.0	10.1		ug/L		101	75 - 117	5	20
2,2-Dichloropropane	0.50	U	10.0	9.50		ug/L		95	76 - 120	3	20
2-Chlorotoluene	0.50	U	10.0	9.81		ug/L		98	79 - 125	5	20
4-Chlorotoluene	0.50	U	10.0	10.0		ug/L		100	76 - 136	6	20
4-Isopropyltoluene	0.50	U	10.0	10.9		ug/L		109	78 - 132	8	20
Benzene	0.50	U	10.0	9.90		ug/L		99	77 - 124	3	20
Bromobenzene	0.50	U	10.0	9.74		ug/L		97	77 - 115	3	20
Bromochloromethane	0.50	U	10.0	9.87		ug/L		99	73 - 118	1	20
Bromodichloromethane	0.50	U	10.0	10.6		ug/L		106	73 - 118	2	20
Bromoform	0.50	U	10.0	10.6		ug/L		106	70 - 118	1	20
Bromomethane	0.57	U	10.0	8.76		ug/L		88	46 - 147	11	20
Carbon tetrachloride	0.50	U	10.0	10.9		ug/L		109	70 - 128	2	20
Chlorobenzene	0.50	U	10.0	9.88		ug/L		99	76 - 124	2	20
Chloroethane	0.50	U	10.0	9.03		ug/L		90	66 - 129	10	20
Chloroform	0.50	U	10.0	10.8		ug/L		108	77 - 122	2	20
Chloromethane	0.50	U	10.0	8.94		ug/L		89	68 - 132	12	20
cis-1,2-Dichloroethene	0.50	U	10.0	9.92		ug/L		99	71 - 117	1	20
cis-1,3-Dichloropropene	0.50	U	10.0	10.1		ug/L		101	76 - 128	1	20
Dibromochloromethane	0.50	U	10.0	10.7		ug/L		107	73 - 114	2	20
Dibromomethane	0.50	U	10.0	10.2		ug/L		102	77 - 118	1	20
Dichlorodifluoromethane	0.66	U	10.0	8.88		ug/L		89	61 - 134	8	20
Ethylbenzene	0.50	U	10.0	9.89		ug/L		99	80 - 122	4	20
Hexachlorobutadiene	0.50	U	10.0	9.98		ug/L		100	57 - 144	7	20
Isopropylbenzene	0.50	U	10.0	10.2		ug/L		102	85 - 148	5	20
Methylene Chloride	0.50	U	10.0	9.62		ug/L		96	65 - 131	1	20
Methyl-t-Butyl Ether (MTBE)	0.79		10.0	11.8		ug/L		110	75 - 122	2	20
m-Xylene & p-Xylene	1.0	U	10.0	9.82		ug/L		98	70 - 130	4	20
Naphthalene	0.67	U	10.0	10.8		ug/L		108	56 - 143	6	20
n-Butylbenzene	0.50	U	10.0	9.01		ug/L		90	74 - 128	8	20
N-Propylbenzene	0.50	U	10.0	6.43		ug/L		64	80 - 132	5	20
o-Xylene	0.50	U	10.0	10.2		ug/L		102	70 - 130	4	20
sec-Butylbenzene	0.50	U	10.0	10.4		ug/L		104	78 - 128	8	20
Styrene	0.50	U	10.0	10.3		ug/L		103	68 - 125	3	20
tert-Butylbenzene	0.50	U	10.0	10.4		ug/L		104	75 - 131	8	20
Tetrachloroethene	0.50	U	10.0	9.93		ug/L		99	71 - 124	3	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38137-A-10 MSD
Matrix: Water
Analysis Batch: 471309

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene	0.50	U	10.0	9.61		ug/L		96	76 - 127	0	20
trans-1,2-Dichloroethene	0.50	U	10.0	9.66		ug/L		97	72 - 117	1	20
trans-1,3-Dichloropropene	0.50	U	10.0	10.8		ug/L		108	85 - 135	3	20
Trichloroethene	0.50	U	10.0	10.1		ug/L		101	71 - 118	4	20
Trichlorofluoromethane	0.50	U	10.0	9.88		ug/L		99	56 - 127	3	20
Vinyl chloride	0.50	U	10.0	8.77		ug/L		88	58 - 114	17	20
Xylenes, Total	3.0	U	20.0	20.0		ug/L		100	78 - 128	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-471331/1-A
Matrix: Water
Analysis Batch: 471670

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 471331

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/27/20 13:37	06/01/20 16:46	2

Lab Sample ID: LCS 160-471331/2-A
Matrix: Water
Analysis Batch: 471670

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 471331

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	213		ug/L		107	82 - 116		

Lab Sample ID: 160-38163-A-3-B MS
Matrix: Water
Analysis Batch: 471670

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 471331

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	212		ug/L		106	82 - 116		

Lab Sample ID: 160-38163-A-3-C MSD
Matrix: Water
Analysis Batch: 471670

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 471331

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	211		ug/L		106	82 - 116	0	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38141-1
SDG: 41973

GC/MS VOA

Analysis Batch: 471309

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38141-1	41973-001	Total/NA	Water	524.2	
160-38141-2	41973-002	Total/NA	Water	524.2	
MB 160-471309/7	Method Blank	Total/NA	Water	524.2	
LCS 160-471309/4	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-471309/5	Lab Control Sample Dup	Total/NA	Water	524.2	
160-38137-A-10 MS	Matrix Spike	Total/NA	Water	524.2	
160-38137-A-10 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Metals

Prep Batch: 471331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38141-2	41973-002	Total/NA	Water	3010A	
MB 160-471331/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-471331/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-38163-A-3-B MS	Matrix Spike	Total/NA	Water	3010A	
160-38163-A-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 471670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38141-2	41973-002	Total/NA	Water	6020A	471331
MB 160-471331/1-A	Method Blank	Total/NA	Water	6020A	471331
LCS 160-471331/2-A	Lab Control Sample	Total/NA	Water	6020A	471331
160-38163-A-3-B MS	Matrix Spike	Total/NA	Water	6020A	471331
160-38163-A-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	471331

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38141-1
SDG: 41973

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-38137-A-10 MS	Matrix Spike	101	95
160-38137-A-10 MSD	Matrix Spike Duplicate	102	95
160-38141-1	41973-001	109	106
160-38141-2	41973-002	108	105
LCS 160-471309/4	Lab Control Sample	99	98
LCSD 160-471309/5	Lab Control Sample Dup	98	97
MB 160-471309/7	Method Blank	104	106

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-38283-1
Laboratory Sample Delivery Group: 41995
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
6/19/2020 5:32:24 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-38283-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-38283-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 6/5/2020 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.6º C and 2.5º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 41995-001 (160-38283-1), 41995-002 (160-38283-2) and 41995-003 (160-38283-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 06/15/2020.

Job ID: 160-38283-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-473287:
The continuing calibration verification (CCV) recovered above the upper control limit for Chloroethane. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data was reported: 41995-001 (160-38283-1), 41995-002 (160-38283-2), 41995-003 (160-38283-3), (160-38280-B-1), (160-38280-B-1 MS), and (160-38280-B-1 MSD).

The continuing calibration verification (CCV) recovered outside acceptance criteria, low biased, for Isobutyl alcohol and Cyclohexane. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data was reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 41995-002 (160-38283-2) was analyzed for metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 06/15/2020 and analyzed on 06/17/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 41995

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext: 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
E. Kramer	Sampler: J. Milligan	Phone: 314-298-8566
2. B. Howe		Email/Fax:
Project Name:	**Project Manager:**	**Field Engineer:**
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	6/2/20	1430	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1435	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1435	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0		1300	W	Trip Blank	40 ML	SC	3	HCL					X							

160-38283 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print: Jim Milligan 6/4/20 1400	Print: FED EX	Print:
Signature:	Signature:	Signature:
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print:	Print: LEONEL A. MAZARIEGOS 6/5/2020 0900	Print:
Signature: FED EX	Signature:	Signature:

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-38283-1
SDG Number: 41995

Login Number: 38283
List Number: 1
Creator: Vania, Ivan H

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38283-1
SDG: 41995

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38283-1
SDG: 41995

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38283-1
SDG: 41995

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-38283-1	41995-001	Water	06/02/20 14:30	06/05/20 09:00	
160-38283-2	41995-002	Water	06/02/20 14:35	06/05/20 09:00	
160-38283-3	41995-003	Water	06/02/20 13:00	06/05/20 09:00	

Client Sample ID: 41995-001

Date Collected: 06/02/20 14:30
Date Received: 06/05/20 09:00

Lab Sample ID: 160-38283-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			06/15/20 15:33	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			06/15/20 15:33	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			06/15/20 15:33	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			06/15/20 15:33	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			06/15/20 15:33	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			06/15/20 15:33	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			06/15/20 15:33	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			06/15/20 15:33	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			06/15/20 15:33	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			06/15/20 15:33	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			06/15/20 15:33	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			06/15/20 15:33	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			06/15/20 15:33	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			06/15/20 15:33	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			06/15/20 15:33	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			06/15/20 15:33	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			06/15/20 15:33	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			06/15/20 15:33	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			06/15/20 15:33	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			06/15/20 15:33	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			06/15/20 15:33	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			06/15/20 15:33	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			06/15/20 15:33	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			06/15/20 15:33	1
Benzene	0.50	U	0.50	0.26	ug/L			06/15/20 15:33	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			06/15/20 15:33	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			06/15/20 15:33	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			06/15/20 15:33	1
Bromoform	0.50	U	0.50	0.32	ug/L			06/15/20 15:33	1
Bromomethane	0.57	U	0.57	0.57	ug/L			06/15/20 15:33	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			06/15/20 15:33	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			06/15/20 15:33	1
Chloroethane	0.50	U	0.50	0.32	ug/L			06/15/20 15:33	1
Chloroform	**0.80**		0.50	0.24	ug/L			06/15/20 15:33	1
Chloromethane	0.50	U	0.50	0.32	ug/L			06/15/20 15:33	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			06/15/20 15:33	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			06/15/20 15:33	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			06/15/20 15:33	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			06/15/20 15:33	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			06/15/20 15:33	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			06/15/20 15:33	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			06/15/20 15:33	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			06/15/20 15:33	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			06/15/20 15:33	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			06/15/20 15:33	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			06/15/20 15:33	1
Naphthalene	0.67	U	0.67	0.57	ug/L			06/15/20 15:33	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			06/15/20 15:33	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			06/15/20 15:33	1

Client Sample ID: 41995-001

Date Collected: 06/02/20 14:30
Date Received: 06/05/20 09:00

Lab Sample ID: 160-38283-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			06/15/20 15:33	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			06/15/20 15:33	1
Styrene	0.50	U	0.50	0.35	ug/L			06/15/20 15:33	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			06/15/20 15:33	1
Tetrachloroethene	**4.9**		0.50	0.31	ug/L			06/15/20 15:33	1
Toluene	0.50	U	0.50	0.24	ug/L			06/15/20 15:33	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			06/15/20 15:33	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			06/15/20 15:33	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			06/15/20 15:33	1
Trichlorofluoromethane	**0.95**		0.50	0.26	ug/L			06/15/20 15:33	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			06/15/20 15:33	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			06/15/20 15:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*104*		*70 - 130*		*06/15/20 15:33*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*06/15/20 15:33*	*1*

Client Sample ID: 41995-002

Date Collected: 06/02/20 14:35
Date Received: 06/05/20 09:00

Lab Sample ID: 160-38283-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			06/15/20 15:56	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			06/15/20 15:56	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			06/15/20 15:56	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			06/15/20 15:56	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			06/15/20 15:56	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			06/15/20 15:56	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			06/15/20 15:56	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			06/15/20 15:56	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			06/15/20 15:56	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			06/15/20 15:56	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			06/15/20 15:56	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			06/15/20 15:56	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			06/15/20 15:56	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			06/15/20 15:56	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			06/15/20 15:56	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			06/15/20 15:56	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			06/15/20 15:56	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			06/15/20 15:56	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			06/15/20 15:56	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			06/15/20 15:56	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			06/15/20 15:56	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			06/15/20 15:56	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			06/15/20 15:56	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			06/15/20 15:56	1
Benzene	0.50	U	0.50	0.26	ug/L			06/15/20 15:56	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			06/15/20 15:56	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			06/15/20 15:56	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38283-1
SDG: 41995

Client Sample ID: 41995-002

Date Collected: 06/02/20 14:35
Date Received: 06/05/20 09:00

Lab Sample ID: 160-38283-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			06/15/20 15:56	1
Bromoform	0.50	U	0.50	0.32	ug/L			06/15/20 15:56	1
Bromomethane	0.57	U	0.57	0.57	ug/L			06/15/20 15:56	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			06/15/20 15:56	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			06/15/20 15:56	1
Chloroethane	0.50	U	0.50	0.32	ug/L			06/15/20 15:56	1
Chloroform	0.50	U	0.50	0.24	ug/L			06/15/20 15:56	1
Chloromethane	0.50	U	0.50	0.32	ug/L			06/15/20 15:56	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			06/15/20 15:56	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			06/15/20 15:56	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			06/15/20 15:56	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			06/15/20 15:56	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			06/15/20 15:56	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			06/15/20 15:56	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			06/15/20 15:56	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			06/15/20 15:56	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			06/15/20 15:56	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			06/15/20 15:56	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			06/15/20 15:56	1
Naphthalene	0.67	U	0.67	0.57	ug/L			06/15/20 15:56	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			06/15/20 15:56	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			06/15/20 15:56	1
o-Xylene	0.50	U	0.50	0.43	ug/L			06/15/20 15:56	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			06/15/20 15:56	1
Styrene	0.50	U	0.50	0.35	ug/L			06/15/20 15:56	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			06/15/20 15:56	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			06/15/20 15:56	1
Toluene	0.50	U	0.50	0.24	ug/L			06/15/20 15:56	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			06/15/20 15:56	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			06/15/20 15:56	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			06/15/20 15:56	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			06/15/20 15:56	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			06/15/20 15:56	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			06/15/20 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*06/15/20 15:56*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*06/15/20 15:56*	*1*

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	5.0	U	5.0	0.90	ug/L		06/15/20 09:57	06/17/20 18:29	2

Client Sample ID: 41995-003

Date Collected: 06/02/20 13:00
Date Received: 06/05/20 09:00

Lab Sample ID: 160-38283-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			06/15/20 16:18	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38283-1
SDG: 41995

Client Sample ID: 41995-003
Date Collected: 06/02/20 13:00
Date Received: 06/05/20 09:00

Lab Sample ID: 160-38283-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			06/15/20 16:18	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			06/15/20 16:18	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			06/15/20 16:18	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			06/15/20 16:18	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			06/15/20 16:18	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			06/15/20 16:18	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			06/15/20 16:18	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			06/15/20 16:18	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			06/15/20 16:18	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			06/15/20 16:18	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			06/15/20 16:18	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			06/15/20 16:18	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			06/15/20 16:18	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			06/15/20 16:18	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			06/15/20 16:18	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			06/15/20 16:18	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			06/15/20 16:18	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			06/15/20 16:18	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			06/15/20 16:18	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			06/15/20 16:18	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			06/15/20 16:18	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			06/15/20 16:18	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			06/15/20 16:18	1
Benzene	0.50	U	0.50	0.26	ug/L			06/15/20 16:18	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			06/15/20 16:18	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			06/15/20 16:18	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			06/15/20 16:18	1
Bromoform	0.50	U	0.50	0.32	ug/L			06/15/20 16:18	1
Bromomethane	0.57	U	0.57	0.57	ug/L			06/15/20 16:18	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			06/15/20 16:18	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			06/15/20 16:18	1
Chloroethane	0.50	U	0.50	0.32	ug/L			06/15/20 16:18	1
Chloroform	0.50	U	0.50	0.24	ug/L			06/15/20 16:18	1
Chloromethane	0.50	U	0.50	0.32	ug/L			06/15/20 16:18	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			06/15/20 16:18	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			06/15/20 16:18	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			06/15/20 16:18	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			06/15/20 16:18	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			06/15/20 16:18	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			06/15/20 16:18	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			06/15/20 16:18	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			06/15/20 16:18	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			06/15/20 16:18	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			06/15/20 16:18	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			06/15/20 16:18	1
Naphthalene	0.67	U	0.67	0.57	ug/L			06/15/20 16:18	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			06/15/20 16:18	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			06/15/20 16:18	1
o-Xylene	0.50	U	0.50	0.43	ug/L			06/15/20 16:18	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38283-1
SDG: 41995

Client Sample ID: 41995-003
Date Collected: 06/02/20 13:00
Date Received: 06/05/20 09:00

Lab Sample ID: 160-38283-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			06/15/20 16:18	1
Styrene	0.50	U	0.50	0.35	ug/L			06/15/20 16:18	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			06/15/20 16:18	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			06/15/20 16:18	1
Toluene	0.50	U	0.50	0.24	ug/L			06/15/20 16:18	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			06/15/20 16:18	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			06/15/20 16:18	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			06/15/20 16:18	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			06/15/20 16:18	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			06/15/20 16:18	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			06/15/20 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*		*06/15/20 16:18*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*06/15/20 16:18*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-473287/7
Matrix: Water
Analysis Batch: 473287

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			06/15/20 11:24	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			06/15/20 11:24	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			06/15/20 11:24	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			06/15/20 11:24	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			06/15/20 11:24	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			06/15/20 11:24	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			06/15/20 11:24	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			06/15/20 11:24	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			06/15/20 11:24	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			06/15/20 11:24	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			06/15/20 11:24	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			06/15/20 11:24	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			06/15/20 11:24	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			06/15/20 11:24	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			06/15/20 11:24	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			06/15/20 11:24	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			06/15/20 11:24	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			06/15/20 11:24	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			06/15/20 11:24	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			06/15/20 11:24	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			06/15/20 11:24	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			06/15/20 11:24	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			06/15/20 11:24	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			06/15/20 11:24	1
Benzene	0.50	U	0.50	0.26	ug/L			06/15/20 11:24	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			06/15/20 11:24	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			06/15/20 11:24	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			06/15/20 11:24	1
Bromoform	0.50	U	0.50	0.32	ug/L			06/15/20 11:24	1
Bromomethane	0.57	U	0.57	0.57	ug/L			06/15/20 11:24	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			06/15/20 11:24	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			06/15/20 11:24	1
Chloroethane	0.50	U	0.50	0.32	ug/L			06/15/20 11:24	1
Chloroform	0.50	U	0.50	0.24	ug/L			06/15/20 11:24	1
Chloromethane	0.50	U	0.50	0.32	ug/L			06/15/20 11:24	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			06/15/20 11:24	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			06/15/20 11:24	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			06/15/20 11:24	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			06/15/20 11:24	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			06/15/20 11:24	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			06/15/20 11:24	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			06/15/20 11:24	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			06/15/20 11:24	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			06/15/20 11:24	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			06/15/20 11:24	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			06/15/20 11:24	1
Naphthalene	0.67	U	0.67	0.57	ug/L			06/15/20 11:24	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			06/15/20 11:24	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-473287/7
Matrix: Water
Analysis Batch: 473287

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			06/15/20 11:24	1
o-Xylene	0.50	U	0.50	0.43	ug/L			06/15/20 11:24	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			06/15/20 11:24	1
Styrene	0.50	U	0.50	0.35	ug/L			06/15/20 11:24	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			06/15/20 11:24	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			06/15/20 11:24	1
Toluene	0.50	U	0.50	0.24	ug/L			06/15/20 11:24	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			06/15/20 11:24	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			06/15/20 11:24	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			06/15/20 11:24	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			06/15/20 11:24	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			06/15/20 11:24	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			06/15/20 11:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*06/15/20 11:24*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*06/15/20 11:24*	*1*

Lab Sample ID: LCS 160-473287/4
Matrix: Water
Analysis Batch: 473287

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.6		ug/L		106	70 - 130
1,1,1-Trichloroethane	10.0	11.2		ug/L		112	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.95		ug/L		99	70 - 130
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethane	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloroethene	10.0	11.2		ug/L		112	70 - 130
1,1-Dichloropropene	10.0	11.2		ug/L		112	70 - 130
1,2,3-Trichlorobenzene	10.0	10.8		ug/L		108	70 - 130
1,2,3-Trichloropropane	10.0	9.65		ug/L		96	70 - 130
1,2,4-Trichlorobenzene	10.0	11.0		ug/L		110	70 - 130
1,2,4-Trimethylbenzene	10.0	10.8		ug/L		108	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	8.79		ug/L		88	70 - 130
1,2-Dibromoethane	10.0	10.3		ug/L		103	70 - 130
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130
1,2-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,2-Dichloropropane	10.0	10.1		ug/L		101	70 - 130
1,3,5-Trimethylbenzene	10.0	11.1		ug/L		111	70 - 130
1,3-Dichlorobenzene	10.0	10.5		ug/L		105	70 - 130
1,3-Dichloropropane	10.0	10.1		ug/L		101	70 - 130
1,4-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
2,2-Dichloropropane	10.0	11.8		ug/L		118	70 - 130
2-Chlorotoluene	10.0	10.7		ug/L		107	70 - 130
4-Chlorotoluene	10.0	10.6		ug/L		106	70 - 130
4-Isopropyltoluene	10.0	11.3		ug/L		113	70 - 130
Benzene	10.0	10.4		ug/L		104	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-473287/4
Matrix: Water
Analysis Batch: 473287

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.2		ug/L		102	70 - 130
Bromochloromethane	10.0	10.3		ug/L		103	70 - 130
Bromodichloromethane	10.0	10.3		ug/L		103	70 - 130
Bromoform	10.0	10.6		ug/L		106	70 - 130
Bromomethane	10.0	10.5		ug/L		105	70 - 130
Carbon tetrachloride	10.0	12.1		ug/L		121	70 - 130
Chlorobenzene	10.0	10.4		ug/L		104	70 - 130
Chloroethane	10.0	12.1		ug/L		121	70 - 130
Chloroform	10.0	10.5		ug/L		105	70 - 130
Chloromethane	10.0	10.6		ug/L		106	70 - 130
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	70 - 130
cis-1,3-Dichloropropene	10.0	10.2		ug/L		102	70 - 130
Dibromochloromethane	10.0	10.4		ug/L		104	70 - 130
Dibromomethane	10.0	10.3		ug/L		103	70 - 130
Dichlorodifluoromethane	10.0	9.57		ug/L		96	70 - 130
Ethylbenzene	10.0	10.9		ug/L		109	70 - 130
Hexachlorobutadiene	10.0	11.4		ug/L		114	70 - 130
Isopropylbenzene	10.0	11.3		ug/L		113	70 - 130
Methylene Chloride	10.0	10.5		ug/L		105	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.0		ug/L		100	70 - 130
m-Xylene & p-Xylene	10.0	11.0		ug/L		110	70 - 130
Naphthalene	10.0	10.2		ug/L		102	70 - 130
n-Butylbenzene	10.0	11.2		ug/L		112	70 - 130
N-Propylbenzene	10.0	11.3		ug/L		113	70 - 130
o-Xylene	10.0	10.8		ug/L		108	70 - 130
sec-Butylbenzene	10.0	11.3		ug/L		113	70 - 130
Styrene	10.0	10.7		ug/L		107	70 - 130
tert-Butylbenzene	10.0	11.0		ug/L		110	70 - 130
Tetrachloroethene	10.0	11.2		ug/L		112	70 - 130
Toluene	10.0	10.5		ug/L		105	70 - 130
trans-1,2-Dichloroethene	10.0	11.0		ug/L		110	70 - 130
trans-1,3-Dichloropropene	10.0	10.3		ug/L		103	70 - 130
Trichloroethene	10.0	10.9		ug/L		109	70 - 130
Trichlorofluoromethane	10.0	11.7		ug/L		117	70 - 130
Vinyl chloride	10.0	11.9		ug/L		119	70 - 130
Xylenes, Total	20.0	21.8		ug/L		109	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 160-473287/5
Matrix: Water
Analysis Batch: 473287

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.2		ug/L		102	70 - 130	4	20
1,1,1-Trichloroethane	10.0	11.1		ug/L		111	70 - 130	1	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-473287/5
Matrix: Water
Analysis Batch: 473287

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	10.0	9.52		ug/L		95	70 - 130	4	20
1,1,2-Trichloroethane	10.0	9.87		ug/L		99	70 - 130	2	20
1,1-Dichloroethane	10.0	10.3		ug/L		103	70 - 130	2	20
1,1-Dichloroethene	10.0	10.8		ug/L		108	70 - 130	4	20
1,1-Dichloropropene	10.0	10.8		ug/L		108	70 - 130	4	20
1,2,3-Trichlorobenzene	10.0	10.6		ug/L		106	70 - 130	2	20
1,2,3-Trichloropropane	10.0	9.28		ug/L		93	70 - 130	4	20
1,2,4-Trichlorobenzene	10.0	10.7		ug/L		107	70 - 130	3	20
1,2,4-Trimethylbenzene	10.0	10.6		ug/L		106	70 - 130	1	20
1,2-Dibromo-3-Chloropropane	10.0	8.92		ug/L		89	70 - 130	1	20
1,2-Dibromoethane	10.0	9.99		ug/L		100	70 - 130	3	20
1,2-Dichlorobenzene	10.0	10.1		ug/L		101	70 - 130	2	20
1,2-Dichloroethane	10.0	9.84		ug/L		98	70 - 130	2	20
1,2-Dichloropropane	10.0	9.94		ug/L		99	70 - 130	2	20
1,3,5-Trimethylbenzene	10.0	10.8		ug/L		108	70 - 130	3	20
1,3-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130	2	20
1,3-Dichloropropane	10.0	9.87		ug/L		99	70 - 130	2	20
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130	2	20
2,2-Dichloropropane	10.0	11.8		ug/L		118	70 - 130	0	20
2-Chlorotoluene	10.0	10.4		ug/L		104	70 - 130	2	20
4-Chlorotoluene	10.0	10.4		ug/L		104	70 - 130	2	20
4-Isopropyltoluene	10.0	11.1		ug/L		111	70 - 130	2	20
Benzene	10.0	10.3		ug/L		103	70 - 130	1	20
Bromobenzene	10.0	10.1		ug/L		101	70 - 130	1	20
Bromochloromethane	10.0	9.92		ug/L		99	70 - 130	4	20
Bromodichloromethane	10.0	9.87		ug/L		99	70 - 130	5	20
Bromoform	10.0	10.4		ug/L		104	70 - 130	2	20
Bromomethane	10.0	10.1		ug/L		101	70 - 130	4	20
Carbon tetrachloride	10.0	11.7		ug/L		117	70 - 130	3	20
Chlorobenzene	10.0	10.2		ug/L		102	70 - 130	2	20
Chloroethane	10.0	11.8		ug/L		118	70 - 130	3	20
Chloroform	10.0	10.3		ug/L		103	70 - 130	1	20
Chloromethane	10.0	9.90		ug/L		99	70 - 130	6	20
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	70 - 130	3	20
cis-1,3-Dichloropropene	10.0	10.1		ug/L		101	70 - 130	1	20
Dibromochloromethane	10.0	10.3		ug/L		103	70 - 130	1	20
Dibromomethane	10.0	10.1		ug/L		101	70 - 130	2	20
Dichlorodifluoromethane	10.0	9.11		ug/L		91	70 - 130	5	20
Ethylbenzene	10.0	10.5		ug/L		105	70 - 130	3	20
Hexachlorobutadiene	10.0	10.8		ug/L		108	70 - 130	5	20
Isopropylbenzene	10.0	11.0		ug/L		110	70 - 130	3	20
Methylene Chloride	10.0	10.0		ug/L		100	70 - 130	5	20
Methyl-t-Butyl Ether (MTBE)	10.0	9.87		ug/L		99	70 - 130	2	20
m-Xylene & p-Xylene	10.0	10.7		ug/L		107	70 - 130	3	20
Naphthalene	10.0	9.83		ug/L		98	70 - 130	4	20
n-Butylbenzene	10.0	10.9		ug/L		109	70 - 130	3	20
N-Propylbenzene	10.0	10.9		ug/L		109	70 - 130	3	20
o-Xylene	10.0	10.5		ug/L		105	70 - 130	3	20
sec-Butylbenzene	10.0	10.9		ug/L		109	70 - 130	3	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-473287/5
Matrix: Water
Analysis Batch: 473287

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Styrene			10.0	10.5		ug/L		105	70 - 130	3	20
tert-Butylbenzene			10.0	10.8		ug/L		108	70 - 130	2	20
Tetrachloroethene			10.0	10.9		ug/L		109	70 - 130	2	20
Toluene			10.0	10.2		ug/L		102	70 - 130	3	20
trans-1,2-Dichloroethene			10.0	10.7		ug/L		107	70 - 130	3	20
trans-1,3-Dichloropropene			10.0	10.2		ug/L		102	70 - 130	1	20
Trichloroethene			10.0	10.7		ug/L		107	70 - 130	2	20
Trichlorofluoromethane			10.0	11.5		ug/L		115	70 - 130	2	20
Vinyl chloride			10.0	11.6		ug/L		116	70 - 130	3	20
Xylenes, Total			20.0	21.2		ug/L		106	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 160-38280-B-1 MS
Matrix: Water
Analysis Batch: 473287

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.50	U	10.0	10.3		ug/L		103	73 - 123
1,1,1-Trichloroethane	0.92		10.0	12.1		ug/L		111	76 - 122
1,1,2,2-Tetrachloroethane	0.50	U	10.0	9.24		ug/L		92	77 - 118
1,1,2-Trichloroethane	0.50	U	10.0	9.63		ug/L		96	79 - 116
1,1-Dichloroethane	0.50	U	10.0	10.5		ug/L		105	81 - 120
1,1-Dichloroethene	0.40	J	10.0	10.9		ug/L		105	68 - 116
1,1-Dichloropropene	0.50	U	10.0	10.9		ug/L		109	74 - 124
1,2,3-Trichlorobenzene	0.59	U	10.0	10.8		ug/L		108	57 - 128
1,2,3-Trichloropropane	0.50	U	10.0	8.60		ug/L		86	72 - 122
1,2,4-Trichlorobenzene	0.55	U	10.0	10.7		ug/L		107	54 - 150
1,2,4-Trimethylbenzene	0.50	U	10.0	10.7		ug/L		107	70 - 125
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	7.78		ug/L		78	58 - 130
1,2-Dibromoethane	0.50	U	10.0	9.69		ug/L		97	76 - 118
1,2-Dichlorobenzene	0.50	U	10.0	10.1		ug/L		101	76 - 120
1,2-Dichloroethane	0.50	U	10.0	9.80		ug/L		98	78 - 123
1,2-Dichloropropane	0.50	U	10.0	10.2		ug/L		102	80 - 119
1,3,5-Trimethylbenzene	0.50	U	10.0	10.9		ug/L		109	76 - 126
1,3-Dichlorobenzene	0.50	U	10.0	10.3		ug/L		103	76 - 120
1,3-Dichloropropane	0.50	U	10.0	9.61		ug/L		96	79 - 116
1,4-Dichlorobenzene	0.50	U	10.0	10.2		ug/L		102	75 - 117
2,2-Dichloropropane	0.50	U	10.0	11.3		ug/L		113	76 - 120
2-Chlorotoluene	0.50	U	10.0	10.4		ug/L		104	79 - 125
4-Chlorotoluene	0.50	U	10.0	10.3		ug/L		103	76 - 136
4-Isopropyltoluene	0.50	U	10.0	11.1		ug/L		111	78 - 132
Benzene	0.50	U	10.0	10.5		ug/L		105	77 - 124
Bromobenzene	0.50	U	10.0	10.0		ug/L		100	77 - 115
Bromochloromethane	0.50	U	10.0	10.1		ug/L		101	73 - 118
Bromodichloromethane	0.50	U	10.0	10.1		ug/L		101	73 - 118

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38280-B-1 MS
Matrix: Water
Analysis Batch: 473287

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromoform	0.50	U	10.0	9.64		ug/L		96	70 - 118
Bromomethane	0.57	U	10.0	10.1		ug/L		101	46 - 147
Carbon tetrachloride	1.1		10.0	12.7		ug/L		116	70 - 128
Chlorobenzene	0.50	U	10.0	10.2		ug/L		102	76 - 124
Chloroethane	0.50	U	10.0	11.6		ug/L		116	66 - 129
Chloroform	0.35	J	10.0	11.0		ug/L		107	77 - 122
Chloromethane	0.50	U	10.0	9.83		ug/L		98	68 - 132
cis-1,2-Dichloroethene	0.50	U	10.0	10.4		ug/L		104	71 - 117
cis-1,3-Dichloropropene	0.50	U	10.0	9.94		ug/L		99	76 - 128
Dibromochloromethane	0.50	U	10.0	10.1		ug/L		101	73 - 114
Dibromomethane	0.50	U	10.0	9.80		ug/L		98	77 - 118
Dichlorodifluoromethane	0.66	U	10.0	8.51		ug/L		85	61 - 134
Ethylbenzene	0.50	U	10.0	10.6		ug/L		106	80 - 122
Hexachlorobutadiene	0.50	U	10.0	11.5		ug/L		115	57 - 144
Isopropylbenzene	0.50	U	10.0	10.9		ug/L		109	85 - 148
Methylene Chloride	0.50	U	10.0	10.3		ug/L		103	65 - 131
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	9.56		ug/L		96	75 - 122
m-Xylene & p-Xylene	1.0	U	10.0	10.7		ug/L		107	70 - 130
Naphthalene	0.67	U	10.0	9.30		ug/L		93	56 - 143
n-Butylbenzene	0.50	U	10.0	10.8		ug/L		108	74 - 128
N-Propylbenzene	0.50	U	10.0	10.9		ug/L		109	80 - 132
o-Xylene	0.50	U	10.0	10.6		ug/L		106	70 - 130
sec-Butylbenzene	0.50	U	10.0	10.9		ug/L		109	78 - 128
Styrene	0.50	U	10.0	10.5		ug/L		105	68 - 125
tert-Butylbenzene	0.50	U	10.0	10.8		ug/L		108	75 - 131
Tetrachloroethene	12		10.0	21.4		ug/L		98	71 - 124
Toluene	0.50	U	10.0	10.3		ug/L		103	76 - 127
trans-1,2-Dichloroethene	0.50	U	10.0	10.7		ug/L		107	72 - 117
trans-1,3-Dichloropropene	0.50	U	10.0	9.78		ug/L		98	85 - 135
Trichloroethene	0.68		10.0	11.4		ug/L		107	71 - 118
Trichlorofluoromethane	0.50	U	10.0	11.2		ug/L		112	56 - 127
Vinyl chloride	0.50	U	10.0	11.0		ug/L		110	58 - 114
Xylenes, Total	3.0	U	20.0	21.3		ug/L		107	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 160-38280-B-1 MSD
Matrix: Water
Analysis Batch: 473287

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.50	U	10.0	10.1		ug/L		101	73 - 123	2	20
1,1,1-Trichloroethane	0.92		10.0	11.6		ug/L		106	76 - 122	4	20
1,1,2,2-Tetrachloroethane	0.50	U	10.0	9.58		ug/L		96	77 - 118	4	20
1,1,2-Trichloroethane	0.50	U	10.0	9.62		ug/L		96	79 - 116	0	20
1,1-Dichloroethane	0.50	U	10.0	10.4		ug/L		104	81 - 120	1	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38280-B-1 MSD
Matrix: Water
Analysis Batch: 473287

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	0.40	J	10.0	10.8		ug/L		104	68 - 116	1	20
1,1-Dichloropropene	0.50	U	10.0	10.7		ug/L		107	74 - 124	2	20
1,2,3-Trichlorobenzene	0.59	U	10.0	11.0		ug/L		110	57 - 128	3	20
1,2,3-Trichloropropane	0.50	U	10.0	9.02		ug/L		90	72 - 122	5	20
1,2,4-Trichlorobenzene	0.55	U	10.0	10.9		ug/L		109	54 - 150	3	20
1,2,4-Trimethylbenzene	0.50	U	10.0	10.5		ug/L		105	70 - 125	2	20
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	8.49		ug/L		85	58 - 130	9	20
1,2-Dibromoethane	0.50	U	10.0	9.95		ug/L		99	76 - 118	3	20
1,2-Dichlorobenzene	0.50	U	10.0	10.0		ug/L		100	76 - 120	0	20
1,2-Dichloroethane	0.50	U	10.0	9.77		ug/L		98	78 - 123	0	20
1,2-Dichloropropane	0.50	U	10.0	9.79		ug/L		98	80 - 119	4	20
1,3,5-Trimethylbenzene	0.50	U	10.0	10.6		ug/L		106	76 - 126	3	20
1,3-Dichlorobenzene	0.50	U	10.0	10.2		ug/L		102	76 - 120	1	20
1,3-Dichloropropane	0.50	U	10.0	9.90		ug/L		99	79 - 116	3	20
1,4-Dichlorobenzene	0.50	U	10.0	10.2		ug/L		102	75 - 117	0	20
2,2-Dichloropropane	0.50	U	10.0	11.1		ug/L		111	76 - 120	1	20
2-Chlorotoluene	0.50	U	10.0	10.3		ug/L		103	79 - 125	1	20
4-Chlorotoluene	0.50	U	10.0	10.2		ug/L		102	76 - 136	1	20
4-Isopropyltoluene	0.50	U	10.0	10.9		ug/L		109	78 - 132	2	20
Benzene	0.50	U	10.0	10.1		ug/L		101	77 - 124	4	20
Bromobenzene	0.50	U	10.0	9.96		ug/L		100	77 - 115	1	20
Bromochloromethane	0.50	U	10.0	10.2		ug/L		102	73 - 118	2	20
Bromodichloromethane	0.50	U	10.0	10.1		ug/L		101	73 - 118	0	20
Bromoform	0.50	U	10.0	9.86		ug/L		99	70 - 118	2	20
Bromomethane	0.57	U	10.0	10.1		ug/L		101	46 - 147	0	20
Carbon tetrachloride	1.1		10.0	12.2		ug/L		111	70 - 128	4	20
Chlorobenzene	0.50	U	10.0	10.1		ug/L		101	76 - 124	1	20
Chloroethane	0.50	U	10.0	11.5		ug/L		115	66 - 129	1	20
Chloroform	0.35	J	10.0	10.4		ug/L		100	77 - 122	6	20
Chloromethane	0.50	U	10.0	9.84		ug/L		98	68 - 132	0	20
cis-1,2-Dichloroethene	0.50	U	10.0	10.2		ug/L		102	71 - 117	2	20
cis-1,3-Dichloropropene	0.50	U	10.0	9.84		ug/L		98	76 - 128	1	20
Dibromochloromethane	0.50	U	10.0	10.1		ug/L		101	73 - 114	0	20
Dibromomethane	0.50	U	10.0	10.1		ug/L		101	77 - 118	3	20
Dichlorodifluoromethane	0.66	U	10.0	8.95		ug/L		90	61 - 134	5	20
Ethylbenzene	0.50	U	10.0	10.3		ug/L		103	80 - 122	2	20
Hexachlorobutadiene	0.50	U	10.0	11.3		ug/L		113	57 - 144	2	20
Isopropylbenzene	0.50	U	10.0	10.8		ug/L		108	85 - 148	2	20
Methylene Chloride	0.50	U	10.0	10.0		ug/L		100	65 - 131	3	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	9.93		ug/L		99	75 - 122	4	20
m-Xylene & p-Xylene	1.0	U	10.0	10.6		ug/L		106	70 - 130	1	20
Naphthalene	0.67	U	10.0	9.97		ug/L		100	56 - 143	7	20
n-Butylbenzene	0.50	U	10.0	10.6		ug/L		106	74 - 128	1	20
N-Propylbenzene	0.50	U	10.0	10.7		ug/L		107	80 - 132	1	20
o-Xylene	0.50	U	10.0	10.5		ug/L		105	70 - 130	1	20
sec-Butylbenzene	0.50	U	10.0	10.8		ug/L		108	78 - 128	1	20
Styrene	0.50	U	10.0	10.5		ug/L		105	68 - 125	0	20
tert-Butylbenzene	0.50	U	10.0	10.6		ug/L		106	75 - 131	2	20
Tetrachloroethene	12		10.0	19.6		ug/L		79	71 - 124	9	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38280-B-1 MSD
Matrix: Water
Analysis Batch: 473287

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene	0.50	U	10.0	10.1		ug/L		101	76 - 127	2	20
trans-1,2-Dichloroethene	0.50	U	10.0	10.3		ug/L		103	72 - 117	3	20
trans-1,3-Dichloropropene	0.50	U	10.0	9.92		ug/L		99	85 - 135	1	20
Trichloroethene	0.68		10.0	11.0		ug/L		103	71 - 118	4	20
Trichlorofluoromethane	0.50	U	10.0	11.2		ug/L		112	56 - 127	0	20
Vinyl chloride	0.50	U	10.0	11.1		ug/L		111	58 - 114	1	20
Xylenes, Total	3.0	U	20.0	21.1		ug/L		106	78 - 128	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-473292/1-A
Matrix: Water
Analysis Batch: 473781

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 473292

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	5.0	U	5.0	0.90	ug/L		06/15/20 09:57	06/17/20 17:42	2

Lab Sample ID: LCS 160-473292/4-A
Matrix: Water
Analysis Batch: 473781

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 473292

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	210		ug/L		105	80 - 120		

Lab Sample ID: 160-38283-2 MS
Matrix: Water
Analysis Batch: 473781

Client Sample ID: 41995-002
Prep Type: Total Recoverable
Prep Batch: 473292

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	5.0	U	200	207		ug/L		104	75 - 125		

Lab Sample ID: 160-38283-2 MSD
Matrix: Water
Analysis Batch: 473781

Client Sample ID: 41995-002
Prep Type: Total Recoverable
Prep Batch: 473292

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	5.0	U	200	207		ug/L		103	75 - 125	0	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38283-1
SDG: 41995

GC/MS VOA

Analysis Batch: 473287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38283-1	41995-001	Total/NA	Water	524.2	
160-38283-2	41995-002	Total/NA	Water	524.2	
160-38283-3	41995-003	Total/NA	Water	524.2	
MB 160-473287/7	Method Blank	Total/NA	Water	524.2	
LCS 160-473287/4	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-473287/5	Lab Control Sample Dup	Total/NA	Water	524.2	
160-38280-B-1 MS	Matrix Spike	Total/NA	Water	524.2	
160-38280-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Metals

Prep Batch: 473292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38283-2	41995-002	Total Recoverable	Water	3005A	
MB 160-473292/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 160-473292/4-A	Lab Control Sample	Total Recoverable	Water	3005A	
160-38283-2 MS	41995-002	Total Recoverable	Water	3005A	
160-38283-2 MSD	41995-002	Total Recoverable	Water	3005A	

Analysis Batch: 473781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38283-2	41995-002	Total Recoverable	Water	6020A	473292
MB 160-473292/1-A	Method Blank	Total Recoverable	Water	6020A	473292
LCS 160-473292/4-A	Lab Control Sample	Total Recoverable	Water	6020A	473292
160-38283-2 MS	41995-002	Total Recoverable	Water	6020A	473292
160-38283-2 MSD	41995-002	Total Recoverable	Water	6020A	473292

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38283-1
SDG: 41995

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	DCZ (70-130)	BFB (70-130)										
160-38280-B-1 MS	Matrix Spike	99	98										
160-38280-B-1 MSD	Matrix Spike Duplicate	100	97										
160-38283-1	41995-001	104	103										
160-38283-2	41995-002	99	99										
160-38283-3	41995-003	101	100										
LCS 160-473287/4	Lab Control Sample	99	98										
LCSD 160-473287/5	Lab Control Sample Dup	98	98										
MB 160-473287/7	Method Blank	99	99										

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4
BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-38462-1
Laboratory Sample Delivery Group: 42031
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
7/6/2020 4:46:50 PM

Ivan Vania, Project Manager II
(314)298-8566
ivan.vania@testamericainc.com

LINKS

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-38462-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-38462-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 6/22/2020 8:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.7º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42031-001 (160-38462-1), 42031-002 (160-38462-2) and 42031-003 (160-38462-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 07/01/2020.

Job ID: 160-38462-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-474973:
The continuing calibration verification (CCV) recovered above the upper control limit for n-Propylbenzene. The samples associated with this CCV were non-detect for the analyte; therefore, the data was reported: 42031-001 (160-38462-1), 42031-002 (160-38462-2), 42031-003 (160-38462-3), (160-38472-A-4), (160-38472-A-4 MS), and (160-38472-A-4 MSD).

The continuing calibration verification (CCV) recovered outside acceptance criteria, low biased, for 2-Chlorotoluene, Vinyl Acetate, and Bromomethane. A reporting limit (RL) standard was analyzed, and the target analytes were detected. Since the associated samples were non-detect for these analytes, the data was reported.

The laboratory control sample (LCS) recovered outside control limits for the following analytes: Vinyl Acetate and 2-Chlorotoluene. A low-level LCS (LLCS), spiked at the reporting limit (RL), was prepared with this batch. The affected target analytes were qualitatively identified in the LLCS; therefore, the LLCS demonstrates the analytical system had sufficient sensitivity to detect the compounds had they been present. Since the compounds were not detected in the samples, the data was reported and qualified.

Spike compounds were inadvertently omitted during the extraction process for the matrix spike/matrix spike duplicate (MS/MSD); therefore, matrix spike recoveries are unavailable for batch 160-474973. The associated laboratory control sample (LCS) met acceptance criteria.

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for recovered outside control limits for the following analytes: N-Propylbenzene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data was reported.

The method blank for 1,4-Dichlorobenzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed: 42031-001 (160-38462-1), 42031-002 (160-38462-2), 42031-003 (160-38462-3), (MB 160-474973/5), (160-38472-A-4), (160-38472-A-4 MS), and (160-38472-A-4 MSD).

1,2-Dichloroethane was detected in method blank SB 160-474973/25 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 42031-002 (160-38462-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 06/23/2020 and analyzed on 06/24/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method

Job ID: 160-38462-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-38462 Chain of Custody

Requires EDD ☑

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42031

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Mills	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	6/16/20	1350	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1355	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1355	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0		1300	W	Trip Blank	40 ML	SC	3	HCL					X							

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print J. Mills 6/19/20 1200	Print FED EX	Print
Signature	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print LEONEL A. MAZARIEGOS	Print
Signature	Signature 6/20/2020 0830	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☑ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☑ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-38462-1
SDG Number: 42031

Login Number: 38462
List Number: 1
Creator: Ridenhower, Rhonda E

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38462-1
SDG: 42031

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38462-1
SDG: 42031

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38462-1
SDG: 42031

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-38462-1	42031-001	Water	06/16/20 13:50	06/22/20 08:30	
160-38462-2	42031-002	Water	06/16/20 13:55	06/22/20 08:30	
160-38462-3	42031-003	Water	06/16/20 13:55	06/22/20 08:30	

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38462-1
SDG: 42031

Client Sample ID: 42031-001
Date Collected: 06/16/20 13:50
Date Received: 06/22/20 08:30

Lab Sample ID: 160-38462-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			07/01/20 05:59	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/01/20 05:59	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			07/01/20 05:59	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/01/20 05:59	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			07/01/20 05:59	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			07/01/20 05:59	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			07/01/20 05:59	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			07/01/20 05:59	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			07/01/20 05:59	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/01/20 05:59	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			07/01/20 05:59	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			07/01/20 05:59	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			07/01/20 05:59	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			07/01/20 05:59	1
1,2-Dichloroethane	**0.75**		0.50	0.23	ug/L			07/01/20 05:59	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			07/01/20 05:59	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			07/01/20 05:59	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			07/01/20 05:59	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			07/01/20 05:59	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			07/01/20 05:59	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			07/01/20 05:59	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			07/01/20 05:59	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			07/01/20 05:59	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/01/20 05:59	1
Benzene	0.50	U	0.50	0.26	ug/L			07/01/20 05:59	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			07/01/20 05:59	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			07/01/20 05:59	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			07/01/20 05:59	1
Bromoform	0.50	U	0.50	0.32	ug/L			07/01/20 05:59	1
Bromomethane	0.57	U	0.57	0.57	ug/L			07/01/20 05:59	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			07/01/20 05:59	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			07/01/20 05:59	1
Chloroethane	0.50	U	0.50	0.32	ug/L			07/01/20 05:59	1
Chloroform	**0.90**		0.50	0.24	ug/L			07/01/20 05:59	1
Chloromethane	0.50	U	0.50	0.32	ug/L			07/01/20 05:59	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			07/01/20 05:59	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			07/01/20 05:59	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/01/20 05:59	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			07/01/20 05:59	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			07/01/20 05:59	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			07/01/20 05:59	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			07/01/20 05:59	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			07/01/20 05:59	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/01/20 05:59	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			07/01/20 05:59	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			07/01/20 05:59	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/01/20 05:59	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/01/20 05:59	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			07/01/20 05:59	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38462-1
SDG: 42031

Client Sample ID: 42031-001

Date Collected: 06/16/20 13:50
Date Received: 06/22/20 08:30

Lab Sample ID: 160-38462-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			07/01/20 05:59	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/01/20 05:59	1
Styrene	0.50	U	0.50	0.35	ug/L			07/01/20 05:59	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/01/20 05:59	1
Tetrachloroethene	**2.7**		0.50	0.31	ug/L			07/01/20 05:59	1
Toluene	0.50	U	0.50	0.24	ug/L			07/01/20 05:59	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			07/01/20 05:59	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/01/20 05:59	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			07/01/20 05:59	1
Trichlorofluoromethane	**0.45**	**J**	0.50	0.26	ug/L			07/01/20 05:59	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/01/20 05:59	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			07/01/20 05:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*119*		*70 - 130*		*07/01/20 05:59*	*1*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*		*07/01/20 05:59*	*1*

Client Sample ID: 42031-002

Date Collected: 06/16/20 13:55
Date Received: 06/22/20 08:30

Lab Sample ID: 160-38462-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			07/01/20 06:25	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/01/20 06:25	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			07/01/20 06:25	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/01/20 06:25	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			07/01/20 06:25	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			07/01/20 06:25	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			07/01/20 06:25	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			07/01/20 06:25	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			07/01/20 06:25	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/01/20 06:25	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			07/01/20 06:25	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			07/01/20 06:25	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			07/01/20 06:25	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			07/01/20 06:25	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			07/01/20 06:25	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			07/01/20 06:25	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			07/01/20 06:25	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			07/01/20 06:25	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			07/01/20 06:25	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			07/01/20 06:25	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			07/01/20 06:25	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			07/01/20 06:25	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			07/01/20 06:25	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/01/20 06:25	1
Benzene	0.50	U	0.50	0.26	ug/L			07/01/20 06:25	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			07/01/20 06:25	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			07/01/20 06:25	1

Client Sample ID: 42031-002

Date Collected: 06/16/20 13:55
Date Received: 06/22/20 08:30

Lab Sample ID: 160-38462-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			07/01/20 06:25	1
Bromoform	0.50	U	0.50	0.32	ug/L			07/01/20 06:25	1
Bromomethane	0.57	U	0.57	0.57	ug/L			07/01/20 06:25	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			07/01/20 06:25	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			07/01/20 06:25	1
Chloroethane	0.50	U	0.50	0.32	ug/L			07/01/20 06:25	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/01/20 06:25	1
Chloromethane	0.50	U	0.50	0.32	ug/L			07/01/20 06:25	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			07/01/20 06:25	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			07/01/20 06:25	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/01/20 06:25	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			07/01/20 06:25	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			07/01/20 06:25	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			07/01/20 06:25	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			07/01/20 06:25	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			07/01/20 06:25	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/01/20 06:25	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			07/01/20 06:25	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			07/01/20 06:25	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/01/20 06:25	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/01/20 06:25	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			07/01/20 06:25	1
o-Xylene	0.50	U	0.50	0.43	ug/L			07/01/20 06:25	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/01/20 06:25	1
Styrene	0.50	U	0.50	0.35	ug/L			07/01/20 06:25	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/01/20 06:25	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			07/01/20 06:25	1
Toluene	0.50	U	0.50	0.24	ug/L			07/01/20 06:25	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			07/01/20 06:25	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/01/20 06:25	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			07/01/20 06:25	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			07/01/20 06:25	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/01/20 06:25	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			07/01/20 06:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*116*		*70 - 130*		*07/01/20 06:25*	*1*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*		*07/01/20 06:25*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		06/23/20 13:22	06/24/20 19:15	2

Client Sample ID: 42031-003

Date Collected: 06/16/20 13:55
Date Received: 06/22/20 08:30

Lab Sample ID: 160-38462-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			07/01/20 06:50	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38462-1
SDG: 42031

Client Sample ID: 42031-003
Date Collected: 06/16/20 13:55
Date Received: 06/22/20 08:30

Lab Sample ID: 160-38462-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/01/20 06:50	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			07/01/20 06:50	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/01/20 06:50	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			07/01/20 06:50	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			07/01/20 06:50	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			07/01/20 06:50	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			07/01/20 06:50	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			07/01/20 06:50	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/01/20 06:50	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			07/01/20 06:50	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			07/01/20 06:50	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			07/01/20 06:50	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			07/01/20 06:50	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			07/01/20 06:50	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			07/01/20 06:50	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			07/01/20 06:50	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			07/01/20 06:50	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			07/01/20 06:50	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			07/01/20 06:50	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			07/01/20 06:50	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			07/01/20 06:50	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			07/01/20 06:50	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/01/20 06:50	1
Benzene	0.50	U	0.50	0.26	ug/L			07/01/20 06:50	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			07/01/20 06:50	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			07/01/20 06:50	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			07/01/20 06:50	1
Bromoform	0.50	U	0.50	0.32	ug/L			07/01/20 06:50	1
Bromomethane	0.57	U	0.57	0.57	ug/L			07/01/20 06:50	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			07/01/20 06:50	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			07/01/20 06:50	1
Chloroethane	0.50	U	0.50	0.32	ug/L			07/01/20 06:50	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/01/20 06:50	1
Chloromethane	0.50	U	0.50	0.32	ug/L			07/01/20 06:50	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			07/01/20 06:50	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			07/01/20 06:50	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/01/20 06:50	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			07/01/20 06:50	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			07/01/20 06:50	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			07/01/20 06:50	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			07/01/20 06:50	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			07/01/20 06:50	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/01/20 06:50	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			07/01/20 06:50	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			07/01/20 06:50	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/01/20 06:50	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/01/20 06:50	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			07/01/20 06:50	1
o-Xylene	0.50	U	0.50	0.43	ug/L			07/01/20 06:50	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38462-1
SDG: 42031

Client Sample ID: 42031-003
Date Collected: 06/16/20 13:55
Date Received: 06/22/20 08:30

Lab Sample ID: 160-38462-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/01/20 06:50	1
Styrene	0.50	U	0.50	0.35	ug/L			07/01/20 06:50	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/01/20 06:50	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			07/01/20 06:50	1
Toluene	0.50	U	0.50	0.24	ug/L			07/01/20 06:50	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			07/01/20 06:50	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/01/20 06:50	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			07/01/20 06:50	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			07/01/20 06:50	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/01/20 06:50	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			07/01/20 06:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*07/01/20 06:50*	*1*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*		*07/01/20 06:50*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-474973/5
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			07/01/20 00:27	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/01/20 00:27	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			07/01/20 00:27	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/01/20 00:27	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			07/01/20 00:27	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			07/01/20 00:27	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			07/01/20 00:27	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			07/01/20 00:27	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			07/01/20 00:27	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/01/20 00:27	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			07/01/20 00:27	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			07/01/20 00:27	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			07/01/20 00:27	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			07/01/20 00:27	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			07/01/20 00:27	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			07/01/20 00:27	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			07/01/20 00:27	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			07/01/20 00:27	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			07/01/20 00:27	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			07/01/20 00:27	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			07/01/20 00:27	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			07/01/20 00:27	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			07/01/20 00:27	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/01/20 00:27	1
Benzene	0.50	U	0.50	0.26	ug/L			07/01/20 00:27	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			07/01/20 00:27	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			07/01/20 00:27	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			07/01/20 00:27	1
Bromoform	0.50	U	0.50	0.32	ug/L			07/01/20 00:27	1
Bromomethane	0.57	U	0.57	0.57	ug/L			07/01/20 00:27	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			07/01/20 00:27	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			07/01/20 00:27	1
Chloroethane	0.50	U	0.50	0.32	ug/L			07/01/20 00:27	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/01/20 00:27	1
Chloromethane	0.50	U	0.50	0.32	ug/L			07/01/20 00:27	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			07/01/20 00:27	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			07/01/20 00:27	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/01/20 00:27	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			07/01/20 00:27	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			07/01/20 00:27	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			07/01/20 00:27	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			07/01/20 00:27	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			07/01/20 00:27	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/01/20 00:27	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			07/01/20 00:27	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			07/01/20 00:27	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/01/20 00:27	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/01/20 00:27	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-474973/5
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			07/01/20 00:27	1
o-Xylene	0.50	U	0.50	0.43	ug/L			07/01/20 00:27	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/01/20 00:27	1
Styrene	0.50	U	0.50	0.35	ug/L			07/01/20 00:27	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/01/20 00:27	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			07/01/20 00:27	1
Toluene	0.50	U	0.50	0.24	ug/L			07/01/20 00:27	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			07/01/20 00:27	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/01/20 00:27	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			07/01/20 00:27	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			07/01/20 00:27	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/01/20 00:27	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			07/01/20 00:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*07/01/20 00:27*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*07/01/20 00:27*	*1*

Lab Sample ID: SB 160-474973/25
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	SB Result	SB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			07/01/20 08:58	1
1,1,1-Trichloroethane	1.0	U	1.0	0.25	ug/L			07/01/20 08:58	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.34	ug/L			07/01/20 08:58	1
1,1,2-Trichloroethane	1.0	U	1.0	0.25	ug/L			07/01/20 08:58	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			07/01/20 08:58	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			07/01/20 08:58	1
1,1-Dichloropropene	1.0	U	1.0	0.32	ug/L			07/01/20 08:58	1
1,2,3-Trichlorobenzene	1.0	U	1.0	0.48	ug/L			07/01/20 08:58	1
1,2,3-Trichloropropane	1.0	U	1.0	0.44	ug/L			07/01/20 08:58	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.54	ug/L			07/01/20 08:58	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.30	ug/L			07/01/20 08:58	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.49	ug/L			07/01/20 08:58	1
1,2-Dibromoethane	1.0	U	1.0	0.26	ug/L			07/01/20 08:58	1
1,2-Dichlorobenzene	1.0	U	1.0	0.42	ug/L			07/01/20 08:58	1
1,2-Dichloroethane	0.767	J	1.0	0.23	ug/L			07/01/20 08:58	1
1,2-Dichloropropane	1.0	U	1.0	0.20	ug/L			07/01/20 08:58	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.28	ug/L			07/01/20 08:58	1
1,3-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			07/01/20 08:58	1
1,3-Dichloropropane	1.0	U	1.0	0.15	ug/L			07/01/20 08:58	1
1,4-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			07/01/20 08:58	1
2,2-Dichloropropane	1.0	U	1.0	0.26	ug/L			07/01/20 08:58	1
2-Chlorotoluene	1.0	U	1.0	0.42	ug/L			07/01/20 08:58	1
4-Chlorotoluene	1.0	U	1.0	0.44	ug/L			07/01/20 08:58	1
4-Isopropyltoluene	1.0	U	1.0	0.34	ug/L			07/01/20 08:58	1
Benzene	1.0	U	1.0	0.26	ug/L			07/01/20 08:58	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: SB 160-474973/25
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	SB Result	SB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	1.0	U	1.0	0.26	ug/L			07/01/20 08:58	1
Bromochloromethane	1.0	U	1.0	0.21	ug/L			07/01/20 08:58	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			07/01/20 08:58	1
Bromoform	1.0	U	1.0	0.32	ug/L			07/01/20 08:58	1
Bromomethane	2.0	U	2.0	0.57	ug/L			07/01/20 08:58	1
Carbon tetrachloride	1.0	U	1.0	0.19	ug/L			07/01/20 08:58	1
Chlorobenzene	1.0	U	1.0	0.28	ug/L			07/01/20 08:58	1
Chloroethane	2.0	U	2.0	0.32	ug/L			07/01/20 08:58	1
Chloroform	1.0	U	1.0	0.24	ug/L			07/01/20 08:58	1
Chloromethane	2.0	U	2.0	0.32	ug/L			07/01/20 08:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.23	ug/L			07/01/20 08:58	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.24	ug/L			07/01/20 08:58	1
Dibromochloromethane	1.0	U	1.0	0.14	ug/L			07/01/20 08:58	1
Dibromomethane	1.0	U	1.0	0.31	ug/L			07/01/20 08:58	1
Dichlorodifluoromethane	2.0	U	2.0	0.66	ug/L			07/01/20 08:58	1
Ethylbenzene	1.0	U	1.0	0.34	ug/L			07/01/20 08:58	1
Hexachlorobutadiene	1.0	U	1.0	0.36	ug/L			07/01/20 08:58	1
Isopropylbenzene	1.0	U	1.0	0.46	ug/L			07/01/20 08:58	1
Methylene Chloride	1.0	U	1.0	0.27	ug/L			07/01/20 08:58	1
Methyl-t-Butyl Ether (MTBE)	2.0	U	2.0	0.31	ug/L			07/01/20 08:58	1
m-Xylene & p-Xylene	2.0	U	2.0	0.39	ug/L			07/01/20 08:58	1
Naphthalene	1.0	U	1.0	0.57	ug/L			07/01/20 08:58	1
n-Butylbenzene	1.0	U	1.0	0.42	ug/L			07/01/20 08:58	1
N-Propylbenzene	1.0	U	1.0	0.47	ug/L			07/01/20 08:58	1
o-Xylene	1.0	U	1.0	0.43	ug/L			07/01/20 08:58	1
sec-Butylbenzene	1.0	U	1.0	0.25	ug/L			07/01/20 08:58	1
Styrene	1.0	U	1.0	0.35	ug/L			07/01/20 08:58	1
tert-Butylbenzene	1.0	U	1.0	0.27	ug/L			07/01/20 08:58	1
Tetrachloroethene	1.0	U	1.0	0.31	ug/L			07/01/20 08:58	1
Toluene	1.0	U	1.0	0.24	ug/L			07/01/20 08:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.26	ug/L			07/01/20 08:58	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.27	ug/L			07/01/20 08:58	1
Trichloroethene	1.0	U	1.0	0.31	ug/L			07/01/20 08:58	1
Trichlorofluoromethane	1.0	U	1.0	0.26	ug/L			07/01/20 08:58	1
Vinyl chloride	2.0	U	2.0	0.19	ug/L			07/01/20 08:58	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			07/01/20 08:58	1

Surrogate	*SB %Recovery*	*SB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*117*		*70 - 130*		*07/01/20 08:58*	*1*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*		*07/01/20 08:58*	*1*

Lab Sample ID: LCS 160-474973/2
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1,1,2-Tetrachloroethane			10.0	9.88		ug/L		99	70 - 130		
1,1,1-Trichloroethane			10.0	10.7		ug/L		107	70 - 130		

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-474973/2
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	10.0	9.74		ug/L		97	70 - 130
1,1,2-Trichloroethane	10.0	10.9		ug/L		109	70 - 130
1,1-Dichloroethane	10.0	11.3		ug/L		113	70 - 130
1,1-Dichloroethene	10.0	8.95		ug/L		89	70 - 130
1,1-Dichloropropene	10.0	10.6		ug/L		106	70 - 130
1,2,3-Trichlorobenzene	10.0	11.4		ug/L		114	70 - 130
1,2,3-Trichloropropane	10.0	9.89		ug/L		99	70 - 130
1,2,4-Trichlorobenzene	10.0	11.5		ug/L		115	70 - 130
1,2,4-Trimethylbenzene	10.0	9.74		ug/L		97	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	10.1		ug/L		101	70 - 130
1,2-Dibromoethane	10.0	9.91		ug/L		99	70 - 130
1,2-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,2-Dichloroethane	10.0	10.7		ug/L		107	70 - 130
1,2-Dichloropropane	10.0	10.7		ug/L		107	70 - 130
1,3,5-Trimethylbenzene	10.0	9.99		ug/L		100	70 - 130
1,3-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,3-Dichloropropane	10.0	10.3		ug/L		103	70 - 130
1,4-Dichlorobenzene	10.0	10.5		ug/L		105	70 - 130
2,2-Dichloropropane	10.0	11.1		ug/L		111	70 - 130
2-Chlorotoluene	10.0	6.80		ug/L		68	70 - 130
4-Chlorotoluene	10.0	10.1		ug/L		101	70 - 130
4-Isopropyltoluene	10.0	9.90		ug/L		99	70 - 130
Benzene	10.0	10.9		ug/L		109	70 - 130
Bromobenzene	10.0	10.3		ug/L		103	70 - 130
Bromochloromethane	10.0	11.7		ug/L		117	70 - 130
Bromodichloromethane	10.0	9.88		ug/L		99	70 - 130
Bromoform	10.0	9.33		ug/L		93	70 - 130
Bromomethane	10.0	7.67		ug/L		77	70 - 130
Carbon tetrachloride	10.0	10.6		ug/L		106	70 - 130
Chlorobenzene	10.0	10.5		ug/L		105	70 - 130
Chloroethane	10.0	11.4		ug/L		114	70 - 130
Chloroform	10.0	10.4		ug/L		104	70 - 130
Chloromethane	10.0	10.5		ug/L		105	70 - 130
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	70 - 130
cis-1,3-Dichloropropene	10.0	9.54		ug/L		95	70 - 130
Dibromochloromethane	10.0	9.31		ug/L		93	70 - 130
Dibromomethane	10.0	10.7		ug/L		107	70 - 130
Dichlorodifluoromethane	10.0	10.8		ug/L		108	70 - 130
Ethylbenzene	10.0	10.6		ug/L		106	70 - 130
Hexachlorobutadiene	10.0	10.0		ug/L		100	70 - 130
Isopropylbenzene	10.0	10.5		ug/L		105	70 - 130
Methylene Chloride	10.0	10.6		ug/L		106	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.0		ug/L		100	70 - 130
m-Xylene & p-Xylene	10.0	9.97		ug/L		100	70 - 130
Naphthalene	10.0	11.2		ug/L		112	70 - 130
n-Butylbenzene	10.0	9.48		ug/L		95	70 - 130
N-Propylbenzene	10.0	15.7		ug/L		157	70 - 130
o-Xylene	10.0	10.1		ug/L		101	70 - 130
sec-Butylbenzene	10.0	10.4		ug/L		104	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-474973/2
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Styrene	10.0	10.2		ug/L		102	70 - 130
tert-Butylbenzene	10.0	9.81		ug/L		98	70 - 130
Tetrachloroethene	10.0	10.5		ug/L		105	70 - 130
Toluene	10.0	10.8		ug/L		108	70 - 130
trans-1,2-Dichloroethene	10.0	10.7		ug/L		107	70 - 130
trans-1,3-Dichloropropene	10.0	9.50		ug/L		95	70 - 130
Trichloroethene	10.0	11.3		ug/L		113	70 - 130
Trichlorofluoromethane	10.0	10.8		ug/L		108	70 - 130
Vinyl chloride	10.0	10.8		ug/L		108	70 - 130
Xylenes, Total	20.0	20.1		ug/L		100	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 160-474973/3
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.0		ug/L		100	70 - 130	2	20
1,1,1-Trichloroethane	10.0	10.4		ug/L		104	70 - 130	3	20
1,1,2,2-Tetrachloroethane	10.0	9.98		ug/L		100	70 - 130	2	20
1,1,2-Trichloroethane	10.0	10.8		ug/L		108	70 - 130	1	20
1,1-Dichloroethane	10.0	11.4		ug/L		114	70 - 130	0	20
1,1-Dichloroethene	10.0	8.82		ug/L		88	70 - 130	1	20
1,1-Dichloropropene	10.0	10.3		ug/L		103	70 - 130	3	20
1,2,3-Trichlorobenzene	10.0	11.0		ug/L		110	70 - 130	3	20
1,2,3-Trichloropropane	10.0	10.4		ug/L		104	70 - 130	5	20
1,2,4-Trichlorobenzene	10.0	10.9		ug/L		109	70 - 130	5	20
1,2,4-Trimethylbenzene	10.0	9.59		ug/L		96	70 - 130	1	20
1,2-Dibromo-3-Chloropropane	10.0	10.4		ug/L		104	70 - 130	2	20
1,2-Dibromoethane	10.0	9.72		ug/L		97	70 - 130	2	20
1,2-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130	0	20
1,2-Dichloroethane	10.0	10.6		ug/L		106	70 - 130	0	20
1,2-Dichloropropane	10.0	10.9		ug/L		109	70 - 130	2	20
1,3,5-Trimethylbenzene	10.0	9.76		ug/L		98	70 - 130	2	20
1,3-Dichlorobenzene	10.0	10.1		ug/L		101	70 - 130	2	20
1,3-Dichloropropane	10.0	10.3		ug/L		103	70 - 130	0	20
1,4-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130	1	20
2,2-Dichloropropane	10.0	10.7		ug/L		107	70 - 130	4	20
2-Chlorotoluene	10.0	6.77		ug/L		68	70 - 130	0	20
4-Chlorotoluene	10.0	9.77		ug/L		98	70 - 130	3	20
4-Isopropyltoluene	10.0	9.60		ug/L		96	70 - 130	3	20
Benzene	10.0	10.9		ug/L		109	70 - 130	0	20
Bromobenzene	10.0	10.4		ug/L		104	70 - 130	1	20
Bromochloromethane	10.0	12.4		ug/L		124	70 - 130	6	20
Bromodichloromethane	10.0	9.94		ug/L		99	70 - 130	1	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-474973/3
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromoform			10.0	9.66		ug/L		97	70 - 130	3	20
Bromomethane			10.0	7.53		ug/L		75	70 - 130	2	20
Carbon tetrachloride			10.0	10.3		ug/L		103	70 - 130	2	20
Chlorobenzene			10.0	10.5		ug/L		105	70 - 130	0	20
Chloroethane			10.0	10.9		ug/L		109	70 - 130	5	20
Chloroform			10.0	10.5		ug/L		105	70 - 130	1	20
Chloromethane			10.0	10.3		ug/L		103	70 - 130	2	20
cis-1,2-Dichloroethene			10.0	10.7		ug/L		107	70 - 130	2	20
cis-1,3-Dichloropropene			10.0	9.77		ug/L		98	70 - 130	2	20
Dibromochloromethane			10.0	9.72		ug/L		97	70 - 130	4	20
Dibromomethane			10.0	10.8		ug/L		108	70 - 130	1	20
Dichlorodifluoromethane			10.0	10.5		ug/L		105	70 - 130	3	20
Ethylbenzene			10.0	10.4		ug/L		104	70 - 130	2	20
Hexachlorobutadiene			10.0	9.44		ug/L		94	70 - 130	6	20
Isopropylbenzene			10.0	10.3		ug/L		103	70 - 130	3	20
Methylene Chloride			10.0	10.8		ug/L		108	70 - 130	2	20
Methyl-t-Butyl Ether (MTBE)			10.0	10.3		ug/L		103	70 - 130	3	20
m-Xylene & p-Xylene			10.0	9.88		ug/L		99	70 - 130	1	20
Naphthalene			10.0	10.9		ug/L		109	70 - 130	3	20
n-Butylbenzene			10.0	9.20		ug/L		92	70 - 130	3	20
N-Propylbenzene			10.0	15.3		ug/L		153	70 - 130	3	20
o-Xylene			10.0	10.0		ug/L		100	70 - 130	0	20
sec-Butylbenzene			10.0	9.93		ug/L		99	70 - 130	5	20
Styrene			10.0	10.3		ug/L		103	70 - 130	1	20
tert-Butylbenzene			10.0	9.47		ug/L		95	70 - 130	4	20
Tetrachloroethene			10.0	10.1		ug/L		101	70 - 130	4	20
Toluene			10.0	10.8		ug/L		108	70 - 130	0	20
trans-1,2-Dichloroethene			10.0	10.7		ug/L		107	70 - 130	0	20
trans-1,3-Dichloropropene			10.0	9.77		ug/L		98	70 - 130	3	20
Trichloroethene			10.0	11.4		ug/L		114	70 - 130	1	20
Trichlorofluoromethane			10.0	10.1		ug/L		101	70 - 130	6	20
Vinyl chloride			10.0	10.2		ug/L		102	70 - 130	6	20
Xylenes, Total			20.0	19.9		ug/L		99	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: 160-38472-A-4 MS
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.50	U	10.0	0.50	U	ug/L		0	73 - 123
1,1,1-Trichloroethane	0.50	U	10.0	0.50	U	ug/L		0	76 - 122
1,1,2,2-Tetrachloroethane	0.50	U	10.0	0.50	U	ug/L		0	77 - 118
1,1,2-Trichloroethane	0.50	U	10.0	0.50	U	ug/L		0	79 - 116
1,1-Dichloroethane	2.7		10.0	2.90		ug/L		2	81 - 120

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38462-1
SDG: 42031

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38472-A-4 MS
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	0.80		10.0	0.881		ug/L		0.8	68 - 116
1,1-Dichloropropene	0.50	U	10.0	0.50	U	ug/L		0	74 - 124
1,2,3-Trichlorobenzene	0.59	U	10.0	0.59	U	ug/L		0	57 - 128
1,2,3-Trichloropropane	0.50	U	10.0	0.50	U	ug/L		0	72 - 122
1,2,4-Trichlorobenzene	0.55	U	10.0	0.55	U	ug/L		0	54 - 150
1,2,4-Trimethylbenzene	0.50	U	10.0	0.50	U	ug/L		0	70 - 125
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	0.63	U	ug/L		0	58 - 130
1,2-Dibromoethane	0.50	U	10.0	0.50	U	ug/L		0	76 - 118
1,2-Dichlorobenzene	0.50	U	10.0	0.50	U	ug/L		0	76 - 120
1,2-Dichloroethane	0.50	U	10.0	0.50	U	ug/L		0	78 - 123
1,2-Dichloropropane	0.50	U	10.0	0.50	U	ug/L		0	80 - 119
1,3,5-Trimethylbenzene	0.50	U	10.0	0.50	U	ug/L		0	76 - 126
1,3-Dichlorobenzene	0.50	U	10.0	0.50	U	ug/L		0	76 - 120
1,3-Dichloropropane	0.50	U	10.0	0.50	U	ug/L		0	79 - 116
1,4-Dichlorobenzene	0.50	U	10.0	0.50	U	ug/L		0	75 - 117
2,2-Dichloropropane	0.50	U	10.0	0.50	U	ug/L		0	76 - 120
2-Chlorotoluene	0.50	U	10.0	0.50	U	ug/L		0	79 - 125
4-Chlorotoluene	0.50	U	10.0	0.50	U	ug/L		0	76 - 136
4-Isopropyltoluene	0.50	U	10.0	0.50	U	ug/L		0	78 - 132
Benzene	0.50	U	10.0	0.50	U	ug/L		0	77 - 124
Bromobenzene	0.50	U	10.0	0.50	U	ug/L		0	77 - 115
Bromochloromethane	0.50	U	10.0	0.50	U	ug/L		0	73 - 118
Bromodichloromethane	0.50	U	10.0	0.50	U	ug/L		0	73 - 118
Bromoform	0.50	U	10.0	0.50	U	ug/L		0	70 - 118
Bromomethane	0.57	U	10.0	0.57	U	ug/L		0	46 - 147
Carbon tetrachloride	0.50	U	10.0	0.50	U	ug/L		0	70 - 128
Chlorobenzene	0.50	U	10.0	0.50	U	ug/L		0	76 - 124
Chloroethane	0.50	U	10.0	0.50	U	ug/L		0	66 - 129
Chloroform	0.50	U	10.0	0.50	U	ug/L		0	77 - 122
Chloromethane	0.50	U	10.0	0.50	U	ug/L		0	68 - 132
cis-1,2-Dichloroethene	34		10.0	37.0		ug/L		31	71 - 117
cis-1,3-Dichloropropene	0.50	U	10.0	0.50	U	ug/L		0	76 - 128
Dibromochloromethane	0.50	U	10.0	0.50	U	ug/L		0	73 - 114
Dibromomethane	0.50	U	10.0	0.50	U	ug/L		0	77 - 118
Dichlorodifluoromethane	0.66	U	10.0	0.66	U	ug/L		0	61 - 134
Ethylbenzene	0.50	U	10.0	0.50	U	ug/L		0	80 - 122
Hexachlorobutadiene	0.50	U	10.0	0.50	U	ug/L		0	57 - 144
Isopropylbenzene	0.50	U	10.0	0.50	U	ug/L		0	85 - 148
Methylene Chloride	0.50	U	10.0	0.50	U	ug/L		0	65 - 131
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	0.50	U	ug/L		0	75 - 122
m-Xylene & p-Xylene	1.0	U	10.0	1.0	U	ug/L		0	70 - 130
Naphthalene	0.67	U	10.0	0.67	U	ug/L		0	56 - 143
n-Butylbenzene	0.50	U	10.0	0.50	U	ug/L		0	74 - 128
N-Propylbenzene	0.50	U	10.0	0.50	U	ug/L		0	80 - 132
o-Xylene	0.50	U	10.0	0.50	U	ug/L		0	70 - 130
sec-Butylbenzene	0.50	U	10.0	0.50	U	ug/L		0	78 - 128
Styrene	0.50	U	10.0	0.50	U	ug/L		0	68 - 125
tert-Butylbenzene	0.50	U	10.0	0.50	U	ug/L		0	75 - 131
Tetrachloroethene	0.50	U	10.0	0.50	U	ug/L		0	71 - 124

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38472-A-4 MS
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	0.50	U	10.0	0.50	U	ug/L		0	76 - 127
trans-1,2-Dichloroethene	0.50	U	10.0	0.50	U	ug/L		0	72 - 117
trans-1,3-Dichloropropene	0.50	U	10.0	0.50	U	ug/L		0	85 - 135
Trichloroethene	0.50	U	10.0	0.50	U	ug/L		0	71 - 118
Trichlorofluoromethane	0.50	U	10.0	0.50	U	ug/L		0	56 - 127
Vinyl chloride	0.50	U	10.0	0.50	U	ug/L		0	58 - 114
Xylenes, Total	3.0	U	20.0	3.0	U	ug/L		0	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: 160-38472-A-4 MSD
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.50	U	10.0	0.50	U	ug/L		0	73 - 123	NC	20
1,1,1-Trichloroethane	0.50	U	10.0	0.50	U	ug/L		0	76 - 122	NC	20
1,1,2,2-Tetrachloroethane	0.50	U	10.0	0.50	U	ug/L		0	77 - 118	NC	20
1,1,2-Trichloroethane	0.50	U	10.0	0.50	U	ug/L		0	79 - 116	NC	20
1,1-Dichloroethane	2.7		10.0	2.68		ug/L		-0.6	81 - 120	8	20
1,1-Dichloroethene	0.80		10.0	0.829		ug/L		0.3	68 - 116	6	20
1,1-Dichloropropene	0.50	U	10.0	0.50	U	ug/L		0	74 - 124	NC	20
1,2,3-Trichlorobenzene	0.59	U	10.0	0.59	U	ug/L		0	57 - 128	NC	20
1,2,3-Trichloropropane	0.50	U	10.0	0.50	U	ug/L		0	72 - 122	NC	20
1,2,4-Trichlorobenzene	0.55	U	10.0	0.55	U	ug/L		0	54 - 150	NC	20
1,2,4-Trimethylbenzene	0.50	U	10.0	0.50	U	ug/L		0	70 - 125	NC	20
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	0.63	U	ug/L		0	58 - 130	NC	20
1,2-Dibromoethane	0.50	U	10.0	0.50	U	ug/L		0	76 - 118	NC	20
1,2-Dichlorobenzene	0.50	U	10.0	0.50	U	ug/L		0	76 - 120	NC	20
1,2-Dichloroethane	0.50	U	10.0	0.50	U	ug/L		0	78 - 123	NC	20
1,2-Dichloropropane	0.50	U	10.0	0.50	U	ug/L		0	80 - 119	NC	20
1,3,5-Trimethylbenzene	0.50	U	10.0	0.50	U	ug/L		0	76 - 126	NC	20
1,3-Dichlorobenzene	0.50	U	10.0	0.50	U	ug/L		0	76 - 120	NC	20
1,3-Dichloropropane	0.50	U	10.0	0.50	U	ug/L		0	79 - 116	NC	20
1,4-Dichlorobenzene	0.50	U	10.0	0.50	U	ug/L		0	75 - 117	NC	20
2,2-Dichloropropane	0.50	U	10.0	0.50	U	ug/L		0	76 - 120	NC	20
2-Chlorotoluene	0.50	U	10.0	0.50	U	ug/L		0	79 - 125	NC	20
4-Chlorotoluene	0.50	U	10.0	0.50	U	ug/L		0	76 - 136	NC	20
4-Isopropyltoluene	0.50	U	10.0	0.50	U	ug/L		0	78 - 132	NC	20
Benzene	0.50	U	10.0	0.50	U	ug/L		0	77 - 124	NC	20
Bromobenzene	0.50	U	10.0	0.50	U	ug/L		0	77 - 115	NC	20
Bromochloromethane	0.50	U	10.0	0.50	U	ug/L		0	73 - 118	NC	20
Bromodichloromethane	0.50	U	10.0	0.50	U	ug/L		0	73 - 118	NC	20
Bromoform	0.50	U	10.0	0.50	U	ug/L		0	70 - 118	NC	20
Bromomethane	0.57	U	10.0	0.57	U	ug/L		0	46 - 147	NC	20
Carbon tetrachloride	0.50	U	10.0	0.50	U	ug/L		0	70 - 128	NC	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38472-A-4 MSD
Matrix: Water
Analysis Batch: 474973

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene	0.50	U	10.0	0.50	U	ug/L		0	76 - 124	NC	20
Chloroethane	0.50	U	10.0	0.50	U	ug/L		0	66 - 129	NC	20
Chloroform	0.50	U	10.0	0.50	U	ug/L		0	77 - 122	NC	20
Chloromethane	0.50	U	10.0	0.50	U	ug/L		0	68 - 132	NC	20
cis-1,2-Dichloroethene	34		10.0	33.5		ug/L		-4	71 - 117	10	20
cis-1,3-Dichloropropene	0.50	U	10.0	0.50	U	ug/L		0	76 - 128	NC	20
Dibromochloromethane	0.50	U	10.0	0.50	U	ug/L		0	73 - 114	NC	20
Dibromomethane	0.50	U	10.0	0.50	U	ug/L		0	77 - 118	NC	20
Dichlorodifluoromethane	0.66	U	10.0	0.66	U	ug/L		0	61 - 134	NC	20
Ethylbenzene	0.50	U	10.0	0.50	U	ug/L		0	80 - 122	NC	20
Hexachlorobutadiene	0.50	U	10.0	0.50	U	ug/L		0	57 - 144	NC	20
Isopropylbenzene	0.50	U	10.0	0.50	U	ug/L		0	85 - 148	NC	20
Methylene Chloride	0.50	U	10.0	0.50	U	ug/L		0	65 - 131	NC	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	0.50	U	ug/L		0	75 - 122	NC	20
m-Xylene & p-Xylene	1.0	U	10.0	1.0	U	ug/L		0	70 - 130	NC	20
Naphthalene	0.67	U	10.0	0.67	U	ug/L		0	56 - 143	NC	20
n-Butylbenzene	0.50	U	10.0	0.50	U	ug/L		0	74 - 128	NC	20
N-Propylbenzene	0.50	U	10.0	0.50	U	ug/L		0	80 - 132	NC	20
o-Xylene	0.50	U	10.0	0.50	U	ug/L		0	70 - 130	NC	20
sec-Butylbenzene	0.50	U	10.0	0.50	U	ug/L		0	78 - 128	NC	20
Styrene	0.50	U	10.0	0.50	U	ug/L		0	68 - 125	NC	20
tert-Butylbenzene	0.50	U	10.0	0.50	U	ug/L		0	75 - 131	NC	20
Tetrachloroethene	0.50	U	10.0	0.50	U	ug/L		0	71 - 124	NC	20
Toluene	0.50	U	10.0	0.50	U	ug/L		0	76 - 127	NC	20
trans-1,2-Dichloroethene	0.50	U	10.0	0.50	U	ug/L		0	72 - 117	NC	20
trans-1,3-Dichloropropene	0.50	U	10.0	0.50	U	ug/L		0	85 - 135	NC	20
Trichloroethene	0.50	U	10.0	0.50	U	ug/L		0	71 - 118	NC	20
Trichlorofluoromethane	0.50	U	10.0	0.50	U	ug/L		0	56 - 127	NC	20
Vinyl chloride	0.50	U	10.0	0.50	U	ug/L		0	58 - 114	NC	20
Xylenes, Total	3.0	U	20.0	3.0	U	ug/L		0	78 - 128	NC	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*107*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-474311/1-A ^2
Matrix: Water
Analysis Batch: 474469

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 474311

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		06/23/20 13:22	06/24/20 18:56	2

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 160-474311/2-A ^2
Matrix: Water
Analysis Batch: 474469

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 474311

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	200	199		ug/L		99	82 - 116

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38462-1
SDG: 42031

GC/MS VOA

Analysis Batch: 474973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38462-1	42031-001	Total/NA	Water	524.2	
160-38462-2	42031-002	Total/NA	Water	524.2	
160-38462-3	42031-003	Total/NA	Water	524.2	
MB 160-474973/5	Method Blank	Total/NA	Water	524.2	
SB 160-474973/25	Method Blank	Total/NA	Water	524.2	
LCS 160-474973/2	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-474973/3	Lab Control Sample Dup	Total/NA	Water	524.2	
160-38472-A-4 MS	Matrix Spike	Total/NA	Water	524.2	
160-38472-A-4 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Metals

Prep Batch: 474311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38462-2	42031-002	Total/NA	Water	3010A	
MB 160-474311/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-474311/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 474469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38462-2	42031-002	Total/NA	Water	6020A	474311
MB 160-474311/1-A ^2	Method Blank	Total/NA	Water	6020A	474311
LCS 160-474311/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	474311

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-38462-1
SDG: 42031

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		DCZ	BFB										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
160-38462-1	42031-001	119	117										
160-38462-2	42031-002	116	112										
160-38462-3	42031-003	111	108										
160-38472-A-4 MS	Matrix Spike	109	104										
160-38472-A-4 MSD	Matrix Spike Duplicate	107	103										
LCS 160-474973/2	Lab Control Sample	105	100										
LCSD 160-474973/3	Lab Control Sample Dup	103	100										
MB 160-474973/5	Method Blank	111	106										
SB 160-474973/25	Method Blank	117	117										

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-38695-1
Laboratory Sample Delivery Group: 42092
Client Project/Site: OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
7/29/2020 7:01:48 PM
Jayna Awalt, Project Manager II
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Designee for

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LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-38695-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: OU3 B96

Report Number: 160-38695-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 07/15/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was -0.2 C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42092-001 (160-38695-1), 42092-002 (160-38695-2), 42092-003 (160-38695-3), 42092-004 (160-38695-4), 42092-005 (160-38695-5) and 42092-006 (160-38695-6) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2.

Job ID: 160-38695-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The samples were analyzed on 07/22/2020 and 07/25/2020.

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not an HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

The continuing calibration verification (CCV) recovered above the upper control limit for Chlorobromomethane, and Chloroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: 42092-001 (160-38695-1), 42092-002 (160-38695-2), 42092-003 (160-38695-3), 42092-004 (160-38695-4), 42092-005 (160-38695-5), 42092-006 (160-38695-6), (CCV 160-476896/2), (160-38695-A-6 MS) and (160-38695-A-6 MSD).

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 160-476896 recovered outside control limits for the following analytes: Chlorobromomethane, 1,2-Dichlorobenzene, 1,2,3-Trichloropropane , sec-Butylbenzene, N-Propylbenzene , 1,1,2,2-Tetrachloroethane, Isopropylbenzene, 1,2-Dibromo-3-Chloropropane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 160-476896 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits except for 1,2,3-Trichloropropane, 1,1,2,2-Tetrachloroethane and 1,2-Dibromo-3-Chloropropane. (160-38695-A-6 MS) and (160-38695-A-6 MSD)
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 42092-002 (160-38695-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 07/16/2020 and analyzed on 07/20/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

The internal standard was outside QC limits in the CCVL. All analytes were within acceptable limits, showing that there was no bias. Original results will be reported. (CCVL 160-476820/49)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-38695 Chain of Custody

Requires EDD Y

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42092

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Milla	Phone: 314-298-8566
2		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type UID	Smp	Coll	Sample Information Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	7/10/20	1300	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1305	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1305	W	RTW-1 Effluent	250 ML	p	1	Hno3										X
003	E	G	095-153	0		1308	W	RTW-2 Influent	40 ML	SC	3	HCL					X					
004	E	G	095-155	0		1310	W	RTW-3 Influent	40 ML	SC	3	HCL					X					
005	E	G	095-157	0		1313	W	RTW-4 Influent	40 ML	SC	3	HCL					X					
006	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milla 7/14/20 1000	Print FED EX	Print
Signature	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print FED EX	Print LEONEL A. MAZARIEGOS	Print
Signature	Signature 7/15/2020 0903	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☑ Disposal by Lab
- ☐ Archive For _____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☑ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-38695-1
SDG Number: 42092

Login Number: 38695
List Number: 1
Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38695-1
SDG: 42092

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38695-1
SDG: 42092

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38695-1
SDG: 42092

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-38695-1	42092-001	Water	07/10/20 13:00	07/15/20 09:03	
160-38695-2	42092-002	Water	07/10/20 13:05	07/15/20 09:03	
160-38695-3	42092-003	Water	07/10/20 13:08	07/15/20 09:03	
160-38695-4	42092-004	Water	07/10/20 13:10	07/15/20 09:03	
160-38695-5	42092-005	Water	07/10/20 13:13	07/15/20 09:03	
160-38695-6	42092-006	Water	07/10/20 09:00	07/15/20 09:03	

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38695-1
SDG: 42092

Client Sample ID: 42092-001
Date Collected: 07/10/20 13:00
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			07/22/20 04:06	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 04:06	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			07/22/20 04:06	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 04:06	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 04:06	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			07/22/20 04:06	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			07/22/20 04:06	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			07/22/20 04:06	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			07/22/20 04:06	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/22/20 04:06	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			07/22/20 04:06	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			07/22/20 04:06	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			07/22/20 04:06	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			07/22/20 04:06	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			07/22/20 04:06	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			07/22/20 04:06	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			07/22/20 04:06	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			07/22/20 04:06	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			07/22/20 04:06	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			07/22/20 04:06	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			07/22/20 04:06	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			07/22/20 04:06	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			07/22/20 04:06	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/22/20 04:06	1
Benzene	0.50	U	0.50	0.26	ug/L			07/22/20 04:06	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			07/22/20 04:06	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			07/22/20 04:06	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			07/22/20 04:06	1
Bromoform	0.50	U	0.50	0.32	ug/L			07/22/20 04:06	1
Bromomethane	0.57	U	0.57	0.57	ug/L			07/22/20 04:06	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			07/22/20 04:06	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			07/22/20 04:06	1
Chloroethane	0.50	U	0.50	0.32	ug/L			07/22/20 04:06	1
Chloroform	**0.76**		0.50	0.24	ug/L			07/22/20 04:06	1
Chloromethane	0.50	U	0.50	0.32	ug/L			07/25/20 02:06	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			07/22/20 04:06	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			07/22/20 04:06	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/22/20 04:06	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			07/22/20 04:06	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			07/22/20 04:06	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			07/22/20 04:06	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			07/22/20 04:06	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			07/22/20 04:06	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/22/20 04:06	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			07/22/20 04:06	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			07/22/20 04:06	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/22/20 04:06	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/22/20 04:06	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			07/22/20 04:06	1

Client Sample ID: 42092-001

Date Collected: 07/10/20 13:00
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			07/22/20 04:06	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/22/20 04:06	1
Styrene	0.50	U	0.50	0.35	ug/L			07/22/20 04:06	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/22/20 04:06	1
Tetrachloroethene	**3.6**		0.50	0.31	ug/L			07/22/20 04:06	1
Toluene	0.50	U	0.50	0.24	ug/L			07/22/20 04:06	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			07/22/20 04:06	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/22/20 04:06	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 04:06	1
Trichlorofluoromethane	**0.46**	**J**	0.50	0.26	ug/L			07/22/20 04:06	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/22/20 04:06	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			07/22/20 04:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*107*		*70 - 130*		*07/22/20 04:06*	*1*
1,2-Dichlorobenzene-d4	*104*		*70 - 130*		*07/25/20 02:06*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*07/22/20 04:06*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*07/25/20 02:06*	*1*

Client Sample ID: 42092-002

Date Collected: 07/10/20 13:05
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			07/22/20 04:32	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 04:32	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			07/22/20 04:32	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 04:32	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 04:32	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			07/22/20 04:32	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			07/22/20 04:32	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			07/22/20 04:32	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			07/22/20 04:32	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/22/20 04:32	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			07/22/20 04:32	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			07/22/20 04:32	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			07/22/20 04:32	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			07/22/20 04:32	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			07/22/20 04:32	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			07/22/20 04:32	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			07/22/20 04:32	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			07/22/20 04:32	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			07/22/20 04:32	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			07/22/20 04:32	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			07/22/20 04:32	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			07/22/20 04:32	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			07/22/20 04:32	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/22/20 04:32	1
Benzene	0.50	U	0.50	0.26	ug/L			07/22/20 04:32	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38695-1
SDG: 42092

Client Sample ID: 42092-002
Date Collected: 07/10/20 13:05
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	0.50	U	0.50	0.26	ug/L			07/22/20 04:32	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			07/22/20 04:32	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			07/22/20 04:32	1
Bromoform	0.50	U	0.50	0.32	ug/L			07/22/20 04:32	1
Bromomethane	0.57	U	0.57	0.57	ug/L			07/22/20 04:32	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			07/22/20 04:32	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			07/22/20 04:32	1
Chloroethane	0.50	U	0.50	0.32	ug/L			07/22/20 04:32	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/22/20 04:32	1
Chloromethane	0.50	U	0.50	0.32	ug/L			07/25/20 02:33	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			07/22/20 04:32	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			07/22/20 04:32	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/22/20 04:32	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			07/22/20 04:32	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			07/22/20 04:32	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			07/22/20 04:32	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			07/22/20 04:32	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			07/22/20 04:32	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/22/20 04:32	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			07/22/20 04:32	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			07/22/20 04:32	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/22/20 04:32	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/22/20 04:32	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			07/22/20 04:32	1
o-Xylene	0.50	U	0.50	0.43	ug/L			07/22/20 04:32	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/22/20 04:32	1
Styrene	0.50	U	0.50	0.35	ug/L			07/22/20 04:32	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/22/20 04:32	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 04:32	1
Toluene	0.50	U	0.50	0.24	ug/L			07/22/20 04:32	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			07/22/20 04:32	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/22/20 04:32	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 04:32	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			07/22/20 04:32	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/22/20 04:32	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			07/22/20 04:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*07/22/20 04:32*	*1*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*07/25/20 02:33*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*07/22/20 04:32*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*07/25/20 02:33*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		07/16/20 14:02	07/20/20 17:35	2

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38695-1
SDG: 42092

Client Sample ID: 42092-003
Date Collected: 07/10/20 13:08
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			07/22/20 04:58	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 04:58	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			07/22/20 04:58	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 04:58	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 04:58	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			07/22/20 04:58	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			07/22/20 04:58	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			07/22/20 04:58	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			07/22/20 04:58	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/22/20 04:58	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			07/22/20 04:58	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			07/22/20 04:58	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			07/22/20 04:58	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			07/22/20 04:58	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			07/22/20 04:58	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			07/22/20 04:58	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			07/22/20 04:58	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			07/22/20 04:58	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			07/22/20 04:58	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			07/22/20 04:58	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			07/22/20 04:58	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			07/22/20 04:58	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			07/22/20 04:58	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/22/20 04:58	1
Benzene	0.50	U	0.50	0.26	ug/L			07/22/20 04:58	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			07/22/20 04:58	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			07/22/20 04:58	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			07/22/20 04:58	1
Bromoform	0.50	U	0.50	0.32	ug/L			07/22/20 04:58	1
Bromomethane	0.57	U	0.57	0.57	ug/L			07/22/20 04:58	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			07/22/20 04:58	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			07/22/20 04:58	1
Chloroethane	0.50	U	0.50	0.32	ug/L			07/22/20 04:58	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/22/20 04:58	1
Chloromethane	0.50	U	0.50	0.32	ug/L			07/25/20 02:59	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			07/22/20 04:58	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			07/22/20 04:58	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/22/20 04:58	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			07/22/20 04:58	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			07/22/20 04:58	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			07/22/20 04:58	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			07/22/20 04:58	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			07/22/20 04:58	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/22/20 04:58	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			07/22/20 04:58	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			07/22/20 04:58	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/22/20 04:58	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/22/20 04:58	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			07/22/20 04:58	1

Client Sample ID: 42092-003

Date Collected: 07/10/20 13:08
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			07/22/20 04:58	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/22/20 04:58	1
Styrene	0.50	U	0.50	0.35	ug/L			07/22/20 04:58	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/22/20 04:58	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 04:58	1
Toluene	0.50	U	0.50	0.24	ug/L			07/22/20 04:58	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			07/22/20 04:58	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/22/20 04:58	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 04:58	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			07/22/20 04:58	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/22/20 04:58	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			07/22/20 04:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*07/22/20 04:58*	*1*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*		*07/25/20 02:59*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*07/22/20 04:58*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*07/25/20 02:59*	*1*

Client Sample ID: 42092-004

Date Collected: 07/10/20 13:10
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			07/22/20 05:24	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 05:24	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			07/22/20 05:24	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 05:24	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 05:24	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			07/22/20 05:24	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			07/22/20 05:24	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			07/22/20 05:24	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			07/22/20 05:24	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/22/20 05:24	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			07/22/20 05:24	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			07/22/20 05:24	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			07/22/20 05:24	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			07/22/20 05:24	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			07/22/20 05:24	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			07/22/20 05:24	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			07/22/20 05:24	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			07/22/20 05:24	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			07/22/20 05:24	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			07/22/20 05:24	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			07/22/20 05:24	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			07/22/20 05:24	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			07/22/20 05:24	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/22/20 05:24	1
Benzene	0.50	U	0.50	0.26	ug/L			07/22/20 05:24	1

Client Sample ID: 42092-004

Date Collected: 07/10/20 13:10
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	0.50	U	0.50	0.26	ug/L			07/22/20 05:24	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			07/22/20 05:24	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			07/22/20 05:24	1
Bromoform	0.50	U	0.50	0.32	ug/L			07/22/20 05:24	1
Bromomethane	0.57	U	0.57	0.57	ug/L			07/22/20 05:24	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			07/22/20 05:24	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			07/22/20 05:24	1
Chloroethane	0.50	U	0.50	0.32	ug/L			07/22/20 05:24	1
Chloroform	**0.53**		0.50	0.24	ug/L			07/22/20 05:24	1
Chloromethane	0.50	U	0.50	0.32	ug/L			07/25/20 03:25	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			07/22/20 05:24	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			07/22/20 05:24	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/22/20 05:24	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			07/22/20 05:24	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			07/22/20 05:24	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			07/22/20 05:24	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			07/22/20 05:24	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			07/22/20 05:24	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/22/20 05:24	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			07/22/20 05:24	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			07/22/20 05:24	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/22/20 05:24	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/22/20 05:24	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			07/22/20 05:24	1
o-Xylene	0.50	U	0.50	0.43	ug/L			07/22/20 05:24	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/22/20 05:24	1
Styrene	0.50	U	0.50	0.35	ug/L			07/22/20 05:24	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/22/20 05:24	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 05:24	1
Toluene	0.50	U	0.50	0.24	ug/L			07/22/20 05:24	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			07/22/20 05:24	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/22/20 05:24	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 05:24	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			07/22/20 05:24	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/22/20 05:24	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			07/22/20 05:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*112*		*70 - 130*		*07/22/20 05:24*	*1*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*07/25/20 03:25*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*07/22/20 05:24*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*07/25/20 03:25*	*1*

Client Sample ID: 42092-005

Date Collected: 07/10/20 13:13
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			07/22/20 05:50	1

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38695-1
SDG: 42092

Client Sample ID: 42092-005
Date Collected: 07/10/20 13:13
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 05:50	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			07/22/20 05:50	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 05:50	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 05:50	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			07/22/20 05:50	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			07/22/20 05:50	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			07/22/20 05:50	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			07/22/20 05:50	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/22/20 05:50	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			07/22/20 05:50	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			07/22/20 05:50	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			07/22/20 05:50	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			07/22/20 05:50	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			07/22/20 05:50	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			07/22/20 05:50	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			07/22/20 05:50	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			07/22/20 05:50	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			07/22/20 05:50	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			07/22/20 05:50	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			07/22/20 05:50	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			07/22/20 05:50	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			07/22/20 05:50	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/22/20 05:50	1
Benzene	0.50	U	0.50	0.26	ug/L			07/22/20 05:50	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			07/22/20 05:50	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			07/22/20 05:50	1
Bromodichloromethane	**0.47**	**J**	0.50	0.17	ug/L			07/22/20 05:50	1
Bromoform	0.50	U	0.50	0.32	ug/L			07/22/20 05:50	1
Bromomethane	0.57	U	0.57	0.57	ug/L			07/22/20 05:50	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			07/22/20 05:50	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			07/22/20 05:50	1
Chloroethane	0.50	U	0.50	0.32	ug/L			07/22/20 05:50	1
Chloroform	**1.2**		0.50	0.24	ug/L			07/22/20 05:50	1
Chloromethane	0.50	U	0.50	0.32	ug/L			07/25/20 03:51	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			07/22/20 05:50	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			07/22/20 05:50	1
Dibromochloromethane	**0.44**	**J**	0.50	0.14	ug/L			07/22/20 05:50	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			07/22/20 05:50	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			07/22/20 05:50	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			07/22/20 05:50	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			07/22/20 05:50	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			07/22/20 05:50	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/22/20 05:50	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			07/22/20 05:50	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			07/22/20 05:50	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/22/20 05:50	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/22/20 05:50	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			07/22/20 05:50	1
o-Xylene	0.50	U	0.50	0.43	ug/L			07/22/20 05:50	1

Client Sample ID: 42092-005

Date Collected: 07/10/20 13:13
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/22/20 05:50	1
Styrene	0.50	U	0.50	0.35	ug/L			07/22/20 05:50	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/22/20 05:50	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 05:50	1
Toluene	0.50	U	0.50	0.24	ug/L			07/22/20 05:50	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			07/22/20 05:50	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/22/20 05:50	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 05:50	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			07/22/20 05:50	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/22/20 05:50	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			07/22/20 05:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*		*07/22/20 05:50*	*1*
1,2-Dichlorobenzene-d4	*104*		*70 - 130*		*07/25/20 03:51*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*07/22/20 05:50*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*07/25/20 03:51*	*1*

Client Sample ID: 42092-006

Date Collected: 07/10/20 09:00
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-6

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			07/22/20 06:16	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 06:16	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			07/22/20 06:16	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 06:16	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 06:16	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			07/22/20 06:16	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			07/22/20 06:16	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			07/22/20 06:16	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			07/22/20 06:16	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/22/20 06:16	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			07/22/20 06:16	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			07/22/20 06:16	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			07/22/20 06:16	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			07/22/20 06:16	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			07/22/20 06:16	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			07/22/20 06:16	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			07/22/20 06:16	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			07/22/20 06:16	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			07/22/20 06:16	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			07/22/20 06:16	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			07/22/20 06:16	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			07/22/20 06:16	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			07/22/20 06:16	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/22/20 06:16	1
Benzene	0.50	U	0.50	0.26	ug/L			07/22/20 06:16	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			07/22/20 06:16	1

Client Sample ID: 42092-006

Date Collected: 07/10/20 09:00
Date Received: 07/15/20 09:03

Lab Sample ID: 160-38695-6

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromochloromethane	0.50	U	0.50	0.21	ug/L			07/22/20 06:16	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			07/22/20 06:16	1
Bromoform	0.50	U	0.50	0.32	ug/L			07/22/20 06:16	1
Bromomethane	0.57	U	0.57	0.57	ug/L			07/22/20 06:16	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			07/22/20 06:16	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			07/22/20 06:16	1
Chloroethane	0.50	U	0.50	0.32	ug/L			07/22/20 06:16	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/22/20 06:16	1
Chloromethane	0.50	U	0.50	0.32	ug/L			07/25/20 04:17	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			07/22/20 06:16	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			07/22/20 06:16	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/22/20 06:16	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			07/22/20 06:16	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			07/22/20 06:16	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			07/22/20 06:16	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			07/22/20 06:16	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			07/22/20 06:16	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/22/20 06:16	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			07/22/20 06:16	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			07/22/20 06:16	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/22/20 06:16	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/22/20 06:16	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			07/22/20 06:16	1
o-Xylene	0.50	U	0.50	0.43	ug/L			07/22/20 06:16	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/22/20 06:16	1
Styrene	0.50	U	0.50	0.35	ug/L			07/22/20 06:16	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/22/20 06:16	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 06:16	1
Toluene	0.50	U	0.50	0.24	ug/L			07/22/20 06:16	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			07/22/20 06:16	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/22/20 06:16	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 06:16	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			07/22/20 06:16	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/22/20 06:16	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			07/22/20 06:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*112*		*70 - 130*		*07/22/20 06:16*	*1*
1,2-Dichlorobenzene-d4	*104*		*70 - 130*		*07/25/20 04:17*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*07/22/20 06:16*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*07/25/20 04:17*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-476896/6
Matrix: Water
Analysis Batch: 476896

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			07/22/20 00:12	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 00:12	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			07/22/20 00:12	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 00:12	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			07/22/20 00:12	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			07/22/20 00:12	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			07/22/20 00:12	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			07/22/20 00:12	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			07/22/20 00:12	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			07/22/20 00:12	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			07/22/20 00:12	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			07/22/20 00:12	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			07/22/20 00:12	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			07/22/20 00:12	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			07/22/20 00:12	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			07/22/20 00:12	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			07/22/20 00:12	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			07/22/20 00:12	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			07/22/20 00:12	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			07/22/20 00:12	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			07/22/20 00:12	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			07/22/20 00:12	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			07/22/20 00:12	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			07/22/20 00:12	1
Benzene	0.50	U	0.50	0.26	ug/L			07/22/20 00:12	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			07/22/20 00:12	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			07/22/20 00:12	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			07/22/20 00:12	1
Bromoform	0.50	U	0.50	0.32	ug/L			07/22/20 00:12	1
Bromomethane	0.57	U	0.57	0.57	ug/L			07/22/20 00:12	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			07/22/20 00:12	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			07/22/20 00:12	1
Chloroethane	0.50	U	0.50	0.32	ug/L			07/22/20 00:12	1
Chloroform	0.50	U	0.50	0.24	ug/L			07/22/20 00:12	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			07/22/20 00:12	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			07/22/20 00:12	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			07/22/20 00:12	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			07/22/20 00:12	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			07/22/20 00:12	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			07/22/20 00:12	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			07/22/20 00:12	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			07/22/20 00:12	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			07/22/20 00:12	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			07/22/20 00:12	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			07/22/20 00:12	1
Naphthalene	0.67	U	0.67	0.57	ug/L			07/22/20 00:12	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			07/22/20 00:12	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			07/22/20 00:12	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-476896/6
Matrix: Water
Analysis Batch: 476896

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			07/22/20 00:12	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			07/22/20 00:12	1
Styrene	0.50	U	0.50	0.35	ug/L			07/22/20 00:12	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			07/22/20 00:12	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 00:12	1
Toluene	0.50	U	0.50	0.24	ug/L			07/22/20 00:12	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			07/22/20 00:12	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			07/22/20 00:12	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			07/22/20 00:12	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			07/22/20 00:12	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/22/20 00:12	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			07/22/20 00:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*07/22/20 00:12*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*07/22/20 00:12*	*1*

Lab Sample ID: LCS 160-476896/3
Matrix: Water
Analysis Batch: 476896

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	11.2		ug/L		112	70 - 130
1,1,1-Trichloroethane	10.0	11.8		ug/L		118	70 - 130
1,1,2,2-Tetrachloroethane	10.0	13.1		ug/L		131	70 - 130
1,1,2-Trichloroethane	10.0	12.4		ug/L		124	70 - 130
1,1-Dichloroethane	10.0	11.3		ug/L		113	70 - 130
1,1-Dichloroethene	10.0	11.2		ug/L		112	70 - 130
1,1-Dichloropropene	10.0	11.2		ug/L		112	70 - 130
1,2,3-Trichlorobenzene	10.0	12.5		ug/L		125	70 - 130
1,2,3-Trichloropropane	10.0	13.9		ug/L		139	70 - 130
1,2,4-Trichlorobenzene	10.0	11.8		ug/L		118	70 - 130
1,2,4-Trimethylbenzene	10.0	12.5		ug/L		125	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	14.1		ug/L		141	70 - 130
1,2-Dibromoethane	10.0	11.7		ug/L		117	70 - 130
1,2-Dichlorobenzene	10.0	13.1		ug/L		131	70 - 130
1,2-Dichloroethane	10.0	12.2		ug/L		122	70 - 130
1,2-Dichloropropane	10.0	10.8		ug/L		108	70 - 130
1,3,5-Trimethylbenzene	10.0	12.7		ug/L		127	70 - 130
1,3-Dichlorobenzene	10.0	12.6		ug/L		126	70 - 130
1,3-Dichloropropane	10.0	11.6		ug/L		116	70 - 130
1,4-Dichlorobenzene	10.0	13.0		ug/L		130	70 - 130
2,2-Dichloropropane	10.0	9.26		ug/L		93	70 - 130
2-Chlorotoluene	10.0	12.9		ug/L		129	70 - 130
4-Chlorotoluene	10.0	12.4		ug/L		124	70 - 130
4-Isopropyltoluene	10.0	12.7		ug/L		127	70 - 130
Benzene	10.0	10.3		ug/L		103	70 - 130
Bromobenzene	10.0	12.9		ug/L		129	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-476896/3
Matrix: Water
Analysis Batch: 476896

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromochloromethane	10.0	14.7		ug/L		147	70 - 130
Bromodichloromethane	10.0	11.3		ug/L		113	70 - 130
Bromoform	10.0	12.6		ug/L		126	70 - 130
Bromomethane	10.0	10.8		ug/L		108	70 - 130
Carbon tetrachloride	10.0	12.1		ug/L		121	70 - 130
Chlorobenzene	10.0	11.8		ug/L		118	70 - 130
Chloroethane	10.0	9.62		ug/L		96	70 - 130
Chloroform	10.0	11.3		ug/L		113	70 - 130
cis-1,2-Dichloroethene	10.0	11.2		ug/L		112	70 - 130
cis-1,3-Dichloropropene	10.0	10.7		ug/L		107	70 - 130
Dibromochloromethane	10.0	11.1		ug/L		111	70 - 130
Dibromomethane	10.0	12.7		ug/L		127	70 - 130
Dichlorodifluoromethane	10.0	10.1		ug/L		101	70 - 130
Ethylbenzene	10.0	11.5		ug/L		115	70 - 130
Hexachlorobutadiene	10.0	12.0		ug/L		120	70 - 130
Isopropylbenzene	10.0	13.4		ug/L		134	70 - 130
Methylene Chloride	10.0	10.2		ug/L		102	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	11.4		ug/L		114	70 - 130
m-Xylene & p-Xylene	10.0	11.1		ug/L		111	70 - 130
Naphthalene	10.0	9.01		ug/L		90	70 - 130
n-Butylbenzene	10.0	11.5		ug/L		115	70 - 130
N-Propylbenzene	10.0	13.1		ug/L		131	70 - 130
o-Xylene	10.0	11.1		ug/L		111	70 - 130
sec-Butylbenzene	10.0	13.3		ug/L		133	70 - 130
Styrene	10.0	11.9		ug/L		119	70 - 130
tert-Butylbenzene	10.0	12.1		ug/L		121	70 - 130
Tetrachloroethene	10.0	11.6		ug/L		116	70 - 130
Toluene	10.0	11.5		ug/L		115	70 - 130
trans-1,2-Dichloroethene	10.0	10.8		ug/L		108	70 - 130
trans-1,3-Dichloropropene	10.0	11.0		ug/L		110	70 - 130
Trichloroethene	10.0	11.4		ug/L		114	70 - 130
Trichlorofluoromethane	10.0	9.94		ug/L		99	70 - 130
Vinyl chloride	10.0	9.27		ug/L		93	70 - 130
Xylenes, Total	20.0	22.2		ug/L		111	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: LCSD 160-476896/4
Matrix: Water
Analysis Batch: 476896

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.8		ug/L		108	70 - 130	4	20
1,1,1-Trichloroethane	10.0	11.4		ug/L		114	70 - 130	4	20
1,1,2,2-Tetrachloroethane	10.0	10.9		ug/L		109	70 - 130	18	20
1,1,2-Trichloroethane	10.0	11.6		ug/L		116	70 - 130	7	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-476896/4
Matrix: Water
Analysis Batch: 476896

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethane	10.0	11.4		ug/L		114	70 - 130	0	20
1,1-Dichloroethene	10.0	11.0		ug/L		110	70 - 130	2	20
1,1-Dichloropropene	10.0	10.7		ug/L		107	70 - 130	4	20
1,2,3-Trichlorobenzene	10.0	10.6		ug/L		106	70 - 130	16	20
1,2,3-Trichloropropane	10.0	11.6		ug/L		116	70 - 130	18	20
1,2,4-Trichlorobenzene	10.0	10.2		ug/L		102	70 - 130	14	20
1,2,4-Trimethylbenzene	10.0	10.8		ug/L		108	70 - 130	15	20
1,2-Dibromo-3-Chloropropane	10.0	12.5		ug/L		125	70 - 130	12	20
1,2-Dibromoethane	10.0	10.8		ug/L		108	70 - 130	8	20
1,2-Dichlorobenzene	10.0	11.4		ug/L		114	70 - 130	14	20
1,2-Dichloroethane	10.0	11.8		ug/L		118	70 - 130	3	20
1,2-Dichloropropane	10.0	10.8		ug/L		108	70 - 130	0	20
1,3,5-Trimethylbenzene	10.0	11.0		ug/L		110	70 - 130	15	20
1,3-Dichlorobenzene	10.0	11.0		ug/L		110	70 - 130	14	20
1,3-Dichloropropane	10.0	10.6		ug/L		106	70 - 130	8	20
1,4-Dichlorobenzene	10.0	11.9		ug/L		119	70 - 130	9	20
2,2-Dichloropropane	10.0	8.72		ug/L		87	70 - 130	6	20
2-Chlorotoluene	10.0	11.2		ug/L		112	70 - 130	14	20
4-Chlorotoluene	10.0	11.0		ug/L		110	70 - 130	12	20
4-Isopropyltoluene	10.0	10.9		ug/L		109	70 - 130	15	20
Benzene	10.0	10.0		ug/L		100	70 - 130	3	20
Bromobenzene	10.0	11.6		ug/L		116	70 - 130	11	20
Bromochloromethane	10.0	14.4		ug/L		144	70 - 130	2	20
Bromodichloromethane	10.0	10.8		ug/L		108	70 - 130	4	20
Bromoform	10.0	11.1		ug/L		111	70 - 130	13	20
Bromomethane	10.0	10.6		ug/L		106	70 - 130	1	20
Carbon tetrachloride	10.0	11.6		ug/L		116	70 - 130	5	20
Chlorobenzene	10.0	11.2		ug/L		112	70 - 130	5	20
Chloroethane	10.0	9.70		ug/L		97	70 - 130	1	20
Chloroform	10.0	11.0		ug/L		110	70 - 130	2	20
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	70 - 130	3	20
cis-1,3-Dichloropropene	10.0	10.2		ug/L		102	70 - 130	5	20
Dibromochloromethane	10.0	10.7		ug/L		107	70 - 130	4	20
Dibromomethane	10.0	12.1		ug/L		121	70 - 130	4	20
Dichlorodifluoromethane	10.0	9.84		ug/L		98	70 - 130	2	20
Ethylbenzene	10.0	10.7		ug/L		107	70 - 130	7	20
Hexachlorobutadiene	10.0	10.4		ug/L		104	70 - 130	15	20
Isopropylbenzene	10.0	11.5		ug/L		115	70 - 130	15	20
Methylene Chloride	10.0	10.1		ug/L		101	70 - 130	1	20
Methyl-t-Butyl Ether (MTBE)	10.0	11.1		ug/L		111	70 - 130	3	20
m-Xylene & p-Xylene	10.0	10.3		ug/L		103	70 - 130	8	20
Naphthalene	10.0	7.96		ug/L		80	70 - 130	12	20
n-Butylbenzene	10.0	9.42		ug/L		94	70 - 130	20	20
N-Propylbenzene	10.0	11.4		ug/L		114	70 - 130	14	20
o-Xylene	10.0	10.5		ug/L		105	70 - 130	6	20
sec-Butylbenzene	10.0	11.6		ug/L		116	70 - 130	13	20
Styrene	10.0	11.2		ug/L		112	70 - 130	6	20
tert-Butylbenzene	10.0	10.7		ug/L		107	70 - 130	13	20
Tetrachloroethene	10.0	10.4		ug/L		104	70 - 130	10	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-476896/4
Matrix: Water
Analysis Batch: 476896

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene			10.0	10.7		ug/L		107	70 - 130	7	20
trans-1,2-Dichloroethene			10.0	10.7		ug/L		107	70 - 130	1	20
trans-1,3-Dichloropropene			10.0	10.5		ug/L		105	70 - 130	4	20
Trichloroethene			10.0	11.2		ug/L		112	70 - 130	2	20
Trichlorofluoromethane			10.0	9.46		ug/L		95	70 - 130	5	20
Vinyl chloride			10.0	9.24		ug/L		92	70 - 130	0	20
Xylenes, Total			20.0	20.8		ug/L		104	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: 160-38695-6 MS
Matrix: Water
Analysis Batch: 476896

Client Sample ID: 42092-006
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.50	U	10.0	11.0		ug/L		110	73 - 123
1,1,1-Trichloroethane	0.50	U	10.0	11.5		ug/L		115	76 - 122
1,1,2,2-Tetrachloroethane	0.50	U	10.0	13.0		ug/L		130	77 - 118
1,1,2-Trichloroethane	0.50	U	10.0	11.3		ug/L		113	79 - 116
1,1-Dichloroethane	0.50	U	10.0	11.5		ug/L		115	81 - 120
1,1-Dichloroethene	0.50	U	10.0	10.7		ug/L		107	68 - 116
1,1-Dichloropropene	0.50	U	10.0	9.71		ug/L		97	74 - 124
1,2,3-Trichlorobenzene	0.59	U	10.0	9.14		ug/L		91	57 - 128
1,2,3-Trichloropropane	0.50	U	10.0	13.1		ug/L		131	72 - 122
1,2,4-Trichlorobenzene	0.55	U	10.0	8.52		ug/L		85	54 - 150
1,2,4-Trimethylbenzene	0.50	U	10.0	9.27		ug/L		93	70 - 125
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	12.0		ug/L		120	58 - 130
1,2-Dibromoethane	0.50	U	10.0	10.7		ug/L		107	76 - 118
1,2-Dichlorobenzene	0.50	U	10.0	11.2		ug/L		112	76 - 120
1,2-Dichloroethane	0.50	U	10.0	12.3		ug/L		123	78 - 123
1,2-Dichloropropane	0.50	U	10.0	11.0		ug/L		110	80 - 119
1,3,5-Trimethylbenzene	0.50	U	10.0	9.34		ug/L		93	76 - 126
1,3-Dichlorobenzene	0.50	U	10.0	10.0		ug/L		100	76 - 120
1,3-Dichloropropane	0.50	U	10.0	10.7		ug/L		107	79 - 116
1,4-Dichlorobenzene	0.50	U	10.0	10.6		ug/L		106	75 - 117
2,2-Dichloropropane	0.50	U	10.0	7.39		ug/L		74	76 - 120
2-Chlorotoluene	0.50	U	10.0	10.3		ug/L		103	79 - 125
4-Chlorotoluene	0.50	U	10.0	9.86		ug/L		99	76 - 136
4-Isopropyltoluene	0.50	U	10.0	8.02		ug/L		80	78 - 132
Benzene	0.50	U	10.0	10.2		ug/L		102	77 - 124
Bromobenzene	0.50	U	10.0	11.5		ug/L		115	77 - 115
Bromochloromethane	0.50	U	10.0	15.2		ug/L		152	73 - 118
Bromodichloromethane	0.50	U	10.0	11.5		ug/L		115	73 - 118
Bromoform	0.50	U	10.0	12.0		ug/L		120	70 - 118
Bromomethane	0.57	U	10.0	8.43		ug/L		84	46 - 147
Carbon tetrachloride	0.50	U	10.0	11.1		ug/L		111	70 - 128

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38695-6 MS
Matrix: Water
Analysis Batch: 476896

Client Sample ID: 42092-006
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorobenzene	0.50	U	10.0	10.6		ug/L		106	76 - 124
Chloroethane	0.50	U	10.0	9.36		ug/L		94	66 - 129
Chloroform	0.50	U	10.0	11.6		ug/L		116	77 - 122
cis-1,2-Dichloroethene	0.50	U	10.0	11.1		ug/L		111	71 - 117
cis-1,3-Dichloropropene	0.50	U	10.0	9.83		ug/L		98	76 - 128
Dibromochloromethane	0.50	U	10.0	10.8		ug/L		108	73 - 114
Dibromomethane	0.50	U	10.0	12.4		ug/L		124	77 - 118
Dichlorodifluoromethane	0.66	U	10.0	9.35		ug/L		94	61 - 134
Ethylbenzene	0.50	U	10.0	9.34		ug/L		93	80 - 122
Hexachlorobutadiene	0.50	U	10.0	6.77		ug/L		68	57 - 144
Isopropylbenzene	0.50	U	10.0	9.76		ug/L		98	85 - 148
Methylene Chloride	0.50	U	10.0	10.5		ug/L		105	65 - 131
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	11.1		ug/L		111	75 - 122
m-Xylene & p-Xylene	1.0	U	10.0	9.01		ug/L		90	70 - 130
Naphthalene	0.67	U	10.0	7.05		ug/L		70	56 - 143
n-Butylbenzene	0.50	U	10.0	6.52		ug/L		65	74 - 128
N-Propylbenzene	0.50	U	10.0	9.04		ug/L		90	80 - 132
o-Xylene	0.50	U	10.0	9.48		ug/L		95	70 - 130
sec-Butylbenzene	0.50	U	10.0	8.52		ug/L		85	78 - 128
Styrene	0.50	U	10.0	10.5		ug/L		105	68 - 125
tert-Butylbenzene	0.50	U	10.0	8.53		ug/L		85	75 - 131
Tetrachloroethene	0.50	U	10.0	8.60		ug/L		86	71 - 124
Toluene	0.50	U	10.0	10.1		ug/L		101	76 - 127
trans-1,2-Dichloroethene	0.50	U	10.0	10.4		ug/L		104	72 - 117
trans-1,3-Dichloropropene	0.50	U	10.0	10.1		ug/L		101	85 - 135
Trichloroethene	0.50	U	10.0	9.69		ug/L		97	71 - 118
Trichlorofluoromethane	0.50	U	10.0	9.29		ug/L		93	56 - 127
Vinyl chloride	0.50	U	10.0	8.47		ug/L		85	58 - 114
Xylenes, Total	3.0	U	20.0	18.5		ug/L		92	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: 160-38695-6 MSD
Matrix: Water
Analysis Batch: 476896

Client Sample ID: 42092-006
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.50	U	10.0	11.4		ug/L		114	73 - 123	4	20
1,1,1-Trichloroethane	0.50	U	10.0	11.5		ug/L		115	76 - 122	0	20
1,1,2,2-Tetrachloroethane	0.50	U	10.0	15.1		ug/L		151	77 - 118	15	20
1,1,2-Trichloroethane	0.50	U	10.0	13.0		ug/L		130	79 - 116	14	20
1,1-Dichloroethane	0.50	U	10.0	11.8		ug/L		118	81 - 120	2	20
1,1-Dichloroethene	0.50	U	10.0	10.6		ug/L		106	68 - 116	1	20
1,1-Dichloropropene	0.50	U	10.0	9.45		ug/L		94	74 - 124	3	20
1,2,3-Trichlorobenzene	0.59	U	10.0	10.2		ug/L		102	57 - 128	11	20
1,2,3-Trichloropropane	0.50	U	10.0	14.5		ug/L		145	72 - 122	10	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38695-6 MSD
Matrix: Water
Analysis Batch: 476896

Client Sample ID: 42092-006
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	0.55	U	10.0	9.16		ug/L		92	54 - 150	7	20
1,2,4-Trimethylbenzene	0.50	U	10.0	9.48		ug/L		95	70 - 125	2	20
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	14.9		ug/L		149	58 - 130	21	20
1,2-Dibromoethane	0.50	U	10.0	12.0		ug/L		120	76 - 118	11	20
1,2-Dichlorobenzene	0.50	U	10.0	11.7		ug/L		117	76 - 120	5	20
1,2-Dichloroethane	0.50	U	10.0	13.5		ug/L		135	78 - 123	9	20
1,2-Dichloropropane	0.50	U	10.0	11.6		ug/L		116	80 - 119	6	20
1,3,5-Trimethylbenzene	0.50	U	10.0	9.41		ug/L		94	76 - 126	1	20
1,3-Dichlorobenzene	0.50	U	10.0	10.6		ug/L		106	76 - 120	6	20
1,3-Dichloropropane	0.50	U	10.0	12.1		ug/L		121	79 - 116	12	20
1,4-Dichlorobenzene	0.50	U	10.0	11.2		ug/L		112	75 - 117	6	20
2,2-Dichloropropane	0.50	U	10.0	7.89		ug/L		79	76 - 120	6	20
2-Chlorotoluene	0.50	U	10.0	10.3		ug/L		103	79 - 125	0	20
4-Chlorotoluene	0.50	U	10.0	10.0		ug/L		100	76 - 136	2	20
4-Isopropyltoluene	0.50	U	10.0	8.27		ug/L		83	78 - 132	3	20
Benzene	0.50	U	10.0	10.2		ug/L		102	77 - 124	0	20
Bromobenzene	0.50	U	10.0	12.3		ug/L		123	77 - 115	6	20
Bromochloromethane	0.50	U	10.0	15.8		ug/L		158	73 - 118	4	20
Bromodichloromethane	0.50	U	10.0	11.9		ug/L		119	73 - 118	3	20
Bromoform	0.50	U	10.0	13.1		ug/L		131	70 - 118	9	20
Bromomethane	0.57	U	10.0	10.1		ug/L		101	46 - 147	18	20
Carbon tetrachloride	0.50	U	10.0	11.0		ug/L		110	70 - 128	1	20
Chlorobenzene	0.50	U	10.0	10.8		ug/L		108	76 - 124	2	20
Chloroethane	0.50	U	10.0	9.87		ug/L		99	66 - 129	5	20
Chloroform	0.50	U	10.0	11.6		ug/L		116	77 - 122	0	20
cis-1,2-Dichloroethene	0.50	U	10.0	11.4		ug/L		114	71 - 117	3	20
cis-1,3-Dichloropropene	0.50	U	10.0	9.82		ug/L		98	76 - 128	0	20
Dibromochloromethane	0.50	U	10.0	12.1		ug/L		121	73 - 114	12	20
Dibromomethane	0.50	U	10.0	13.0		ug/L		130	77 - 118	5	20
Dichlorodifluoromethane	0.66	U	10.0	10.2		ug/L		102	61 - 134	9	20
Ethylbenzene	0.50	U	10.0	9.28		ug/L		93	80 - 122	1	20
Hexachlorobutadiene	0.50	U	10.0	7.53		ug/L		75	57 - 144	11	20
Isopropylbenzene	0.50	U	10.0	9.99		ug/L		100	85 - 148	2	20
Methylene Chloride	0.50	U	10.0	11.0		ug/L		110	65 - 131	5	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	12.4		ug/L		124	75 - 122	11	20
m-Xylene & p-Xylene	1.0	U	10.0	8.99		ug/L		90	70 - 130	0	20
Naphthalene	0.67	U	10.0	8.22		ug/L		82	56 - 143	15	20
n-Butylbenzene	0.50	U	10.0	6.85		ug/L		68	74 - 128	5	20
N-Propylbenzene	0.50	U	10.0	9.25		ug/L		93	80 - 132	2	20
o-Xylene	0.50	U	10.0	9.67		ug/L		97	70 - 130	2	20
sec-Butylbenzene	0.50	U	10.0	8.86		ug/L		89	78 - 128	4	20
Styrene	0.50	U	10.0	10.6		ug/L		106	68 - 125	1	20
tert-Butylbenzene	0.50	U	10.0	8.68		ug/L		87	75 - 131	2	20
Tetrachloroethene	0.50	U	10.0	8.67		ug/L		87	71 - 124	1	20
Toluene	0.50	U	10.0	10.6		ug/L		106	76 - 127	5	20
trans-1,2-Dichloroethene	0.50	U	10.0	10.8		ug/L		108	72 - 117	3	20
trans-1,3-Dichloropropene	0.50	U	10.0	11.3		ug/L		113	85 - 135	11	20
Trichloroethene	0.50	U	10.0	9.55		ug/L		95	71 - 118	1	20
Trichlorofluoromethane	0.50	U	10.0	9.54		ug/L		95	56 - 127	3	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38695-6 MSD
Matrix: Water
Analysis Batch: 476896

Client Sample ID: 42092-006
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vinyl chloride	0.50	U	10.0	8.99		ug/L		90	58 - 114	6	20
Xylenes, Total	3.0	U	20.0	18.7		ug/L		93	78 - 128	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: MB 160-477423/7
Matrix: Water
Analysis Batch: 477423

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.50	U	0.50	0.32	ug/L			07/24/20 18:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*07/24/20 18:40*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*07/24/20 18:40*	*1*

Lab Sample ID: LCS 160-477423/4
Matrix: Water
Analysis Batch: 477423

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloromethane			10.0	8.87		ug/L		89	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 160-477423/5
Matrix: Water
Analysis Batch: 477423

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloromethane			10.0	8.68		ug/L		87	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: 160-38680-A-2 MS
Matrix: Water
Analysis Batch: 477423

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloromethane	2.5	U	50.0	45.1		ug/L		90	68 - 132		

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-38680-A-2 MS
Matrix: Water
Analysis Batch: 477423

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichlorobenzene-d4	101		70 - 130
4-Bromofluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 160-38680-A-2 MSD
Matrix: Water
Analysis Batch: 477423

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloromethane	2.5	U	50.0	46.9		ug/L		94	68 - 132	4	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichlorobenzene-d4	99		70 - 130
4-Bromofluorobenzene (Surr)	100		70 - 130

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-476557/1-A
Matrix: Water
Analysis Batch: 476820

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 476557

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		07/16/20 14:02	07/20/20 16:36	2

Lab Sample ID: LCS 160-476557/2-A
Matrix: Water
Analysis Batch: 476820

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 476557

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	205		ug/L		102	82 - 116		

QC Association Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38695-1
SDG: 42092

GC/MS VOA

Analysis Batch: 476896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38695-1	42092-001	Total/NA	Water	524.2	
160-38695-2	42092-002	Total/NA	Water	524.2	
160-38695-3	42092-003	Total/NA	Water	524.2	
160-38695-4	42092-004	Total/NA	Water	524.2	
160-38695-5	42092-005	Total/NA	Water	524.2	
160-38695-6	42092-006	Total/NA	Water	524.2	
MB 160-476896/6	Method Blank	Total/NA	Water	524.2	
LCS 160-476896/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-476896/4	Lab Control Sample Dup	Total/NA	Water	524.2	
160-38695-6 MS	42092-006	Total/NA	Water	524.2	
160-38695-6 MSD	42092-006	Total/NA	Water	524.2	

Analysis Batch: 477423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38695-1	42092-001	Total/NA	Water	524.2	
160-38695-2	42092-002	Total/NA	Water	524.2	
160-38695-3	42092-003	Total/NA	Water	524.2	
160-38695-4	42092-004	Total/NA	Water	524.2	
160-38695-5	42092-005	Total/NA	Water	524.2	
160-38695-6	42092-006	Total/NA	Water	524.2	
MB 160-477423/7	Method Blank	Total/NA	Water	524.2	
LCS 160-477423/4	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-477423/5	Lab Control Sample Dup	Total/NA	Water	524.2	
160-38680-A-2 MS	Matrix Spike	Total/NA	Water	524.2	
160-38680-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Metals

Prep Batch: 476557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38695-2	42092-002	Total/NA	Water	3010A	
MB 160-476557/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-476557/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 476820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-38695-2	42092-002	Total/NA	Water	6020A	476557
MB 160-476557/1-A	Method Blank	Total/NA	Water	6020A	476557
LCS 160-476557/2-A	Lab Control Sample	Total/NA	Water	6020A	476557

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: OU3 B96

Job ID: 160-38695-1
SDG: 42092

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-38680-A-2 MS	Matrix Spike	101	100
160-38680-A-2 MSD	Matrix Spike Duplicate	99	100
160-38695-1	42092-001	107	96
160-38695-1	42092-001	104	97
160-38695-2	42092-002	106	98
160-38695-2	42092-002	106	102
160-38695-3	42092-003	111	102
160-38695-3	42092-003	101	97
160-38695-4	42092-004	112	102
160-38695-4	42092-004	106	99
160-38695-5	42092-005	109	101
160-38695-5	42092-005	104	98
160-38695-6	42092-006	112	98
160-38695-6	42092-006	104	98
160-38695-6 MS	42092-006	108	103
160-38695-6 MSD	42092-006	108	103
LCS 160-476896/3	Lab Control Sample	108	105
LCS 160-477423/4	Lab Control Sample	98	98
LCSD 160-476896/4	Lab Control Sample Dup	105	100
LCSD 160-477423/5	Lab Control Sample Dup	98	97
MB 160-476896/6	Method Blank	103	96
MB 160-477423/7	Method Blank	99	97

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-39040-1
Laboratory Sample Delivery Group: 42220
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
8/24/2020 3:34:36 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-39040-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-39040-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 8/8/2020 9:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.5º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42220-001 (160-39040-1) and 42220-002 (160-39040-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 08/19/2020.

Job ID: 160-39040-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-479736:
The continuing calibration verification (CCV) recovered above the upper control limit for 1,2,3-Trichloropropane, 1,2,3-Trichlorobenzene, Naphthalene, and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data was reported: (CCV 160-479736/2).

The continuing calibration verification (CCV) recovered outside acceptance criteria, low biased, for 4-Chlorotoluene and 1,2-Dichloroethane. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data was reported: (LOQV 160-479736/5).

Analytical Batch 160-480250:
The continuing calibration verification (CCV) recovered above the upper control limit for Naphthalene, 1,2,4-Trichlorobenzene, and 1,2,3-Trichlorobenzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data was reported: (CCV 160-480250/2).

Analytical Batch 160-480250:
The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) recovered outside control limits for the following analytes: Naphthalene, 1,2,4-Trichlorobenzene, and 1,2,3-Trichlorobenzene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data was reported: (LCS 160-480250/3) and (LCSD 160-480250/4).

The method blank contained Naphthalene, 1,2,4-Trichlorobenzene, and 1,2,3-Trichlorobenzene above the reporting limit (RL). None of the samples associated with this method blank contained the target compounds; therefore, re-extraction and/or re-analysis of samples were not performed: (MB 160-480250/6).

The matrix spike / matrix spike duplicate (MS/MSD) recoveries were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits except for Naphthalene and 1,2,3-Trichlorobenzene: (160-39035-A-15 MS) and (160-39035-A-15 MSD).

The following samples were analyzed after a tune that did not meet method criteria for BFB. All other controls were within acceptable limits and thus did not indicate any bias except where otherwise noted and qualified. The samples were reanalyzed out of hold and the out of hold reanalysis confirms the in hold analysis: 42220-001 (160-39040-1) and 42220-002 (160-39040-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 42220-002 (160-39040-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 08/18/2020 and analyzed on 08/19/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples

Job ID: 160-39040-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

Analytical Batch 160-479960:
The ICSA was outside upper QC limits for Thallium. The concentrations in the sample is less than the reporting limit and do not require re-analysis: (ICSA 160-479960/26).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-39040 Chain of Custody

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42220

Requires EDD Y

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Miller	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD use TB-1 from CoC # 42215

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	8/6/20	1455	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0	8/6/20	1500	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0	8/6/20	1500	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0			W	Trip Blank	40 ML	SC	3	HCL					X							

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print: Jim Miller 8/7/20 1400	Print FE	Print
Signature	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FE	Print Jacob Boyd	Print
Signature	Signature 8/8/20 09:30	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☐ Archive For _____ Months
- ☒ Disposal by Lab

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☐ 7 Days
- ☒ 14 Days
- ☐ Other ( )
- ☐ 30 Days

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-39040-1
SDG Number: 42220

Login Number: 39040
List Number: 1
Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39040-1
SDG: 42220

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39040-1
SDG: 42220

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39040-1
SDG: 42220

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-39040-1	42220-001	Water	08/06/20 14:55	08/08/20 09:30	
160-39040-2	42220-002	Water	08/06/20 15:00	08/08/20 09:30	

Client Sample ID: 42220-001

Date Collected: 08/06/20 14:55
Date Received: 08/08/20 09:30

Lab Sample ID: 160-39040-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			08/19/20 11:29	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/19/20 11:29	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			08/19/20 11:29	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/19/20 11:29	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			08/19/20 11:29	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			08/19/20 11:29	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			08/19/20 11:29	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			08/19/20 11:29	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			08/19/20 11:29	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			08/19/20 11:29	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			08/19/20 11:29	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			08/19/20 11:29	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			08/19/20 11:29	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			08/19/20 11:29	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			08/19/20 11:29	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			08/19/20 11:29	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			08/19/20 11:29	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			08/19/20 11:29	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			08/19/20 11:29	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			08/19/20 11:29	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			08/19/20 11:29	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			08/19/20 11:29	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			08/19/20 11:29	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/19/20 11:29	1
Benzene	0.50	U	0.50	0.26	ug/L			08/19/20 11:29	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			08/19/20 11:29	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			08/19/20 11:29	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			08/19/20 11:29	1
Bromoform	0.50	U	0.50	0.32	ug/L			08/19/20 11:29	1
Bromomethane	0.57	U	0.57	0.57	ug/L			08/19/20 11:29	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			08/19/20 11:29	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			08/19/20 11:29	1
Chloroethane	0.50	U	0.50	0.32	ug/L			08/19/20 11:29	1
Chloroform	**0.98**		0.50	0.24	ug/L			08/19/20 11:29	1
Chloromethane	0.50	U	0.50	0.32	ug/L			08/19/20 11:29	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			08/19/20 11:29	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			08/19/20 11:29	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/19/20 11:29	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			08/19/20 11:29	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			08/19/20 11:29	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			08/19/20 11:29	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			08/19/20 11:29	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			08/19/20 11:29	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/19/20 11:29	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			08/19/20 11:29	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			08/19/20 11:29	1
Naphthalene	0.67	U	0.67	0.57	ug/L			08/19/20 11:29	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			08/19/20 11:29	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			08/19/20 11:29	1

Client Sample ID: 42220-001

Date Collected: 08/06/20 14:55
Date Received: 08/08/20 09:30

Lab Sample ID: 160-39040-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			08/19/20 11:29	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/19/20 11:29	1
Styrene	0.50	U	0.50	0.35	ug/L			08/19/20 11:29	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/19/20 11:29	1
Tetrachloroethene	**1.6**		0.50	0.31	ug/L			08/19/20 11:29	1
Toluene	0.50	U	0.50	0.24	ug/L			08/19/20 11:29	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			08/19/20 11:29	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/19/20 11:29	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			08/19/20 11:29	1
Trichlorofluoromethane	**0.48**	**J**	0.50	0.26	ug/L			08/19/20 11:29	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/19/20 11:29	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			08/19/20 11:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*118*		*70 - 130*		*08/19/20 11:29*	*1*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*		*08/19/20 11:29*	*1*

Client Sample ID: 42220-002

Date Collected: 08/06/20 15:00
Date Received: 08/08/20 09:30

Lab Sample ID: 160-39040-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			08/19/20 11:55	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/19/20 11:55	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			08/19/20 11:55	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/19/20 11:55	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			08/19/20 11:55	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			08/19/20 11:55	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			08/19/20 11:55	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			08/19/20 11:55	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			08/19/20 11:55	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			08/19/20 11:55	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			08/19/20 11:55	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			08/19/20 11:55	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			08/19/20 11:55	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			08/19/20 11:55	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			08/19/20 11:55	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			08/19/20 11:55	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			08/19/20 11:55	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			08/19/20 11:55	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			08/19/20 11:55	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			08/19/20 11:55	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			08/19/20 11:55	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			08/19/20 11:55	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			08/19/20 11:55	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/19/20 11:55	1
Benzene	0.50	U	0.50	0.26	ug/L			08/19/20 11:55	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			08/19/20 11:55	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			08/19/20 11:55	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39040-1
SDG: 42220

Client Sample ID: 42220-002
Date Collected: 08/06/20 15:00
Date Received: 08/08/20 09:30

Lab Sample ID: 160-39040-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			08/19/20 11:55	1
Bromoform	0.50	U	0.50	0.32	ug/L			08/19/20 11:55	1
Bromomethane	0.57	U	0.57	0.57	ug/L			08/19/20 11:55	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			08/19/20 11:55	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			08/19/20 11:55	1
Chloroethane	0.50	U	0.50	0.32	ug/L			08/19/20 11:55	1
Chloroform	0.50	U	0.50	0.24	ug/L			08/19/20 11:55	1
Chloromethane	0.50	U	0.50	0.32	ug/L			08/19/20 11:55	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			08/19/20 11:55	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			08/19/20 11:55	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/19/20 11:55	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			08/19/20 11:55	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			08/19/20 11:55	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			08/19/20 11:55	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			08/19/20 11:55	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			08/19/20 11:55	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/19/20 11:55	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			08/19/20 11:55	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			08/19/20 11:55	1
Naphthalene	0.67	U	0.67	0.57	ug/L			08/19/20 11:55	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			08/19/20 11:55	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			08/19/20 11:55	1
o-Xylene	0.50	U	0.50	0.43	ug/L			08/19/20 11:55	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/19/20 11:55	1
Styrene	0.50	U	0.50	0.35	ug/L			08/19/20 11:55	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/19/20 11:55	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			08/19/20 11:55	1
Toluene	0.50	U	0.50	0.24	ug/L			08/19/20 11:55	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			08/19/20 11:55	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/19/20 11:55	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			08/19/20 11:55	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			08/19/20 11:55	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/19/20 11:55	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			08/19/20 11:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*113*		*70 - 130*		*08/19/20 11:55*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*08/19/20 11:55*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		08/18/20 16:15	08/19/20 20:26	2

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39040-1
SDG: 42220

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-479736/6
Matrix: Water
Analysis Batch: 479736

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			08/19/20 03:28	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/19/20 03:28	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			08/19/20 03:28	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/19/20 03:28	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			08/19/20 03:28	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			08/19/20 03:28	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			08/19/20 03:28	1
1,2,3-Trichlorobenzene	0.793		0.59	0.48	ug/L			08/19/20 03:28	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			08/19/20 03:28	1
1,2,4-Trichlorobenzene	0.777		0.55	0.54	ug/L			08/19/20 03:28	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			08/19/20 03:28	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			08/19/20 03:28	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			08/19/20 03:28	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			08/19/20 03:28	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			08/19/20 03:28	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			08/19/20 03:28	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			08/19/20 03:28	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			08/19/20 03:28	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			08/19/20 03:28	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			08/19/20 03:28	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			08/19/20 03:28	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			08/19/20 03:28	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			08/19/20 03:28	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/19/20 03:28	1
Benzene	0.50	U	0.50	0.26	ug/L			08/19/20 03:28	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			08/19/20 03:28	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			08/19/20 03:28	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			08/19/20 03:28	1
Bromoform	0.50	U	0.50	0.32	ug/L			08/19/20 03:28	1
Bromomethane	0.57	U	0.57	0.57	ug/L			08/19/20 03:28	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			08/19/20 03:28	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			08/19/20 03:28	1
Chloroethane	0.50	U	0.50	0.32	ug/L			08/19/20 03:28	1
Chloroform	0.50	U	0.50	0.24	ug/L			08/19/20 03:28	1
Chloromethane	0.50	U	0.50	0.32	ug/L			08/19/20 03:28	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			08/19/20 03:28	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			08/19/20 03:28	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/19/20 03:28	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			08/19/20 03:28	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			08/19/20 03:28	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			08/19/20 03:28	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			08/19/20 03:28	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			08/19/20 03:28	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/19/20 03:28	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			08/19/20 03:28	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			08/19/20 03:28	1
Naphthalene	1.53		0.67	0.57	ug/L			08/19/20 03:28	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			08/19/20 03:28	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-479736/6
Matrix: Water
Analysis Batch: 479736

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			08/19/20 03:28	1
o-Xylene	0.50	U	0.50	0.43	ug/L			08/19/20 03:28	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/19/20 03:28	1
Styrene	0.50	U	0.50	0.35	ug/L			08/19/20 03:28	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/19/20 03:28	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			08/19/20 03:28	1
Toluene	0.50	U	0.50	0.24	ug/L			08/19/20 03:28	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			08/19/20 03:28	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/19/20 03:28	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			08/19/20 03:28	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			08/19/20 03:28	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/19/20 03:28	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			08/19/20 03:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*114*		*70 - 130*		*08/19/20 03:28*	*1*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*		*08/19/20 03:28*	*1*

Lab Sample ID: LCS 160-479736/3
Matrix: Water
Analysis Batch: 479736

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	11.2		ug/L		112	70 - 130
1,1,1-Trichloroethane	10.0	10.6		ug/L		106	70 - 130
1,1,2,2-Tetrachloroethane	10.0	13.0		ug/L		130	70 - 130
1,1,2-Trichloroethane	10.0	12.2		ug/L		122	70 - 130
1,1-Dichloroethane	10.0	10.6		ug/L		106	70 - 130
1,1-Dichloroethene	10.0	11.1		ug/L		111	70 - 130
1,1-Dichloropropene	10.0	10.1		ug/L		101	70 - 130
1,2,3-Trichlorobenzene	10.0	15.2		ug/L		152	70 - 130
1,2,3-Trichloropropane	10.0	16.1		ug/L		161	70 - 130
1,2,4-Trichlorobenzene	10.0	12.7		ug/L		127	70 - 130
1,2,4-Trimethylbenzene	10.0	10.5		ug/L		105	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	13.5		ug/L		135	70 - 130
1,2-Dibromoethane	10.0	12.5		ug/L		125	70 - 130
1,2-Dichlorobenzene	10.0	10.6		ug/L		106	70 - 130
1,2-Dichloroethane	10.0	11.7		ug/L		117	70 - 130
1,2-Dichloropropane	10.0	10.6		ug/L		106	70 - 130
1,3,5-Trimethylbenzene	10.0	9.89		ug/L		99	70 - 130
1,3-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,3-Dichloropropane	10.0	12.0		ug/L		120	70 - 130
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
2,2-Dichloropropane	10.0	8.59		ug/L		86	70 - 130
2-Chlorotoluene	10.0	10.3		ug/L		103	70 - 130
4-Chlorotoluene	10.0	8.61		ug/L		86	70 - 130
4-Isopropyltoluene	10.0	8.87		ug/L		89	70 - 130
Benzene	10.0	10.8		ug/L		108	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-479736/3
Matrix: Water
Analysis Batch: 479736

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	11.6		ug/L		116	70 - 130
Bromochloromethane	10.0	11.6		ug/L		116	70 - 130
Bromodichloromethane	10.0	10.8		ug/L		108	70 - 130
Bromoform	10.0	14.6		ug/L		146	70 - 130
Bromomethane	10.0	14.6		ug/L		146	70 - 130
Carbon tetrachloride	10.0	10.4		ug/L		104	70 - 130
Chlorobenzene	10.0	10.2		ug/L		102	70 - 130
Chloroethane	10.0	11.1		ug/L		111	70 - 130
Chloroform	10.0	10.8		ug/L		108	70 - 130
Chloromethane	10.0	10.8		ug/L		108	70 - 130
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
cis-1,3-Dichloropropene	10.0	10.9		ug/L		109	70 - 130
Dibromochloromethane	10.0	12.0		ug/L		120	70 - 130
Dibromomethane	10.0	11.1		ug/L		111	70 - 130
Dichlorodifluoromethane	10.0	12.2		ug/L		122	70 - 130
Ethylbenzene	10.0	9.51		ug/L		95	70 - 130
Hexachlorobutadiene	10.0	9.64		ug/L		96	70 - 130
Isopropylbenzene	10.0	10.6		ug/L		106	70 - 130
Methylene Chloride	10.0	10.6		ug/L		106	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	12.2		ug/L		122	70 - 130
m-Xylene & p-Xylene	10.0	9.13		ug/L		91	70 - 130
Naphthalene	10.0	19.7		ug/L		197	70 - 130
n-Butylbenzene	10.0	8.61		ug/L		86	70 - 130
N-Propylbenzene	10.0	9.24		ug/L		92	70 - 130
o-Xylene	10.0	8.52		ug/L		85	70 - 130
sec-Butylbenzene	10.0	9.44		ug/L		94	70 - 130
Styrene	10.0	8.70		ug/L		87	70 - 130
tert-Butylbenzene	10.0	10.0		ug/L		100	70 - 130
Tetrachloroethene	10.0	9.64		ug/L		96	70 - 130
Toluene	10.0	9.93		ug/L		99	70 - 130
trans-1,2-Dichloroethene	10.0	10.4		ug/L		104	70 - 130
trans-1,3-Dichloropropene	10.0	11.4		ug/L		114	70 - 130
Trichloroethene	10.0	10.4		ug/L		104	70 - 130
Trichlorofluoromethane	10.0	12.0		ug/L		120	70 - 130
Vinyl chloride	10.0	10.4		ug/L		104	70 - 130
Xylenes, Total	20.0	17.7		ug/L		88	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: LCSD 160-479736/4
Matrix: Water
Analysis Batch: 479736

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.6		ug/L		106	70 - 130	5	20
1,1,1-Trichloroethane	10.0	10.6		ug/L		106	70 - 130	0	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-479736/4
Matrix: Water
Analysis Batch: 479736

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	10.0	10.5		ug/L		105	70 - 130	22	20
1,1,2-Trichloroethane	10.0	10.9		ug/L		109	70 - 130	11	20
1,1-Dichloroethane	10.0	11.2		ug/L		112	70 - 130	5	20
1,1-Dichloroethene	10.0	12.0		ug/L		120	70 - 130	8	20
1,1-Dichloropropene	10.0	10.4		ug/L		104	70 - 130	3	20
1,2,3-Trichlorobenzene	10.0	14.0		ug/L		140	70 - 130	8	20
1,2,3-Trichloropropane	10.0	13.0		ug/L		130	70 - 130	22	20
1,2,4-Trichlorobenzene	10.0	12.5		ug/L		125	70 - 130	1	20
1,2,4-Trimethylbenzene	10.0	10.9		ug/L		109	70 - 130	3	20
1,2-Dibromo-3-Chloropropane	10.0	12.4		ug/L		124	70 - 130	8	20
1,2-Dibromoethane	10.0	11.9		ug/L		119	70 - 130	5	20
1,2-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130	2	20
1,2-Dichloroethane	10.0	11.2		ug/L		112	70 - 130	5	20
1,2-Dichloropropane	10.0	10.5		ug/L		105	70 - 130	1	20
1,3,5-Trimethylbenzene	10.0	10.7		ug/L		107	70 - 130	8	20
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130	2	20
1,3-Dichloropropane	10.0	11.3		ug/L		113	70 - 130	6	20
1,4-Dichlorobenzene	10.0	9.82		ug/L		98	70 - 130	4	20
2,2-Dichloropropane	10.0	8.46		ug/L		85	70 - 130	2	20
2-Chlorotoluene	10.0	10.2		ug/L		102	70 - 130	1	20
4-Chlorotoluene	10.0	9.25		ug/L		93	70 - 130	7	20
4-Isopropyltoluene	10.0	9.75		ug/L		97	70 - 130	9	20
Benzene	10.0	10.6		ug/L		106	70 - 130	2	20
Bromobenzene	10.0	10.3		ug/L		103	70 - 130	12	20
Bromochloromethane	10.0	11.1		ug/L		111	70 - 130	4	20
Bromodichloromethane	10.0	10.9		ug/L		109	70 - 130	2	20
Bromoform	10.0	11.6		ug/L		116	70 - 130	23	20
Bromomethane	10.0	15.0		ug/L		150	70 - 130	2	20
Carbon tetrachloride	10.0	10.4		ug/L		104	70 - 130	0	20
Chlorobenzene	10.0	10.1		ug/L		101	70 - 130	1	20
Chloroethane	10.0	12.1		ug/L		121	70 - 130	9	20
Chloroform	10.0	10.7		ug/L		107	70 - 130	2	20
Chloromethane	10.0	11.3		ug/L		113	70 - 130	5	20
cis-1,2-Dichloroethene	10.0	11.0		ug/L		110	70 - 130	4	20
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	70 - 130	3	20
Dibromochloromethane	10.0	11.4		ug/L		114	70 - 130	6	20
Dibromomethane	10.0	11.1		ug/L		111	70 - 130	0	20
Dichlorodifluoromethane	10.0	12.6		ug/L		126	70 - 130	3	20
Ethylbenzene	10.0	10.1		ug/L		101	70 - 130	6	20
Hexachlorobutadiene	10.0	9.94		ug/L		99	70 - 130	3	20
Isopropylbenzene	10.0	10.5		ug/L		105	70 - 130	1	20
Methylene Chloride	10.0	11.1		ug/L		111	70 - 130	4	20
Methyl-t-Butyl Ether (MTBE)	10.0	11.9		ug/L		119	70 - 130	3	20
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	70 - 130	11	20
Naphthalene	10.0	17.2		ug/L		172	70 - 130	14	20
n-Butylbenzene	10.0	10.3		ug/L		103	70 - 130	18	20
N-Propylbenzene	10.0	9.65		ug/L		97	70 - 130	4	20
o-Xylene	10.0	9.53		ug/L		95	70 - 130	11	20
sec-Butylbenzene	10.0	10.0		ug/L		100	70 - 130	6	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-479736/4
Matrix: Water
Analysis Batch: 479736

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Styrene			10.0	9.70		ug/L		97	70 - 130	11	20
tert-Butylbenzene			10.0	10.3		ug/L		103	70 - 130	3	20
Tetrachloroethene			10.0	9.65		ug/L		97	70 - 130	0	20
Toluene			10.0	10.2		ug/L		102	70 - 130	2	20
trans-1,2-Dichloroethene			10.0	10.9		ug/L		109	70 - 130	5	20
trans-1,3-Dichloropropene			10.0	11.2		ug/L		112	70 - 130	1	20
Trichloroethene			10.0	10.4		ug/L		104	70 - 130	0	20
Trichlorofluoromethane			10.0	12.5		ug/L		125	70 - 130	4	20
Vinyl chloride			10.0	11.3		ug/L		113	70 - 130	8	20
Xylenes, Total			20.0	19.7		ug/L		99	70 - 130	11	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-479754/1-A ^2
Matrix: Water
Analysis Batch: 479960

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 479754

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		08/18/20 16:15	08/19/20 19:46	2

Lab Sample ID: LCS 160-479754/2-A ^2
Matrix: Water
Analysis Batch: 479960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 479754

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	206		ug/L		103	82 - 116		

Lab Sample ID: 160-39147-A-1-B MS ^2
Matrix: Water
Analysis Batch: 479960

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 479754

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	210		ug/L		105	82 - 116		

Lab Sample ID: 160-39147-A-1-C MSD ^2
Matrix: Water
Analysis Batch: 479960

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 479754

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	216		ug/L		108	82 - 116	3	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39040-1
SDG: 42220

GC/MS VOA

Analysis Batch: 479736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39040-1	42220-001	Total/NA	Water	524.2	
160-39040-2	42220-002	Total/NA	Water	524.2	
MB 160-479736/6	Method Blank	Total/NA	Water	524.2	
LCS 160-479736/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-479736/4	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 479754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39040-2	42220-002	Total/NA	Water	3010A	
MB 160-479754/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-479754/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-39147-A-1-B MS ^2	Matrix Spike	Total/NA	Water	3010A	
160-39147-A-1-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 479960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39040-2	42220-002	Total/NA	Water	6020A	479754
MB 160-479754/1-A ^2	Method Blank	Total/NA	Water	6020A	479754
LCS 160-479754/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	479754
160-39147-A-1-B MS ^2	Matrix Spike	Total/NA	Water	6020A	479754
160-39147-A-1-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	6020A	479754

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39040-1
SDG: 42220

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-39040-1	42220-001	118	113
160-39040-2	42220-002	113	102
LCS 160-479736/3	Lab Control Sample	106	102
LCSD 160-479736/4	Lab Control Sample Dup	103	96
MB 160-479736/6	Method Blank	114	112

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4
BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-39190-1
Laboratory Sample Delivery Group: 42250
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
9/9/2020 4:17:31 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-39190-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-39190-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 8/20/2020 8:59 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.7º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42250-001 (160-39190-1), 42250-002 (160-39190-2) and 42250-003 (160-39190-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 08/26/2020.

Job ID: 160-39190-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-481316:
The continuing calibration verification (CCV) recovered above the upper control limit for 1,2,3-Trichloropropane, 1,1,2,2-Tetrachloroethane, 1,3-Dichloropropane, 1,2-Dibromo-3-Chloropropane, Bromoform, Chlorodibromomethane, Ethylene Dibromide, 1,2-Dichloroethane-d4, Methyl acetate, 1,1,2-Trichloroethane, and Methyl-t-Butyl Ether (MTBE) . The samples associated with this CCV were non-detect for the affected analytes; therefore, the data was reported: (CCV 160-481316/2).

The continuing calibration verification (CCV) recovered outside acceptance criteria, low biased, for 4-Isopropyltoluene, 1,2,4-Trimethylbenzene, 1,2,4-Trichlorobenzene, n-Butylbenzene, 1,3,5-Trimethylbenzene, 1,3,5-Trichlorobenzene, and 4-Chlorotoluene. A reporting limit (RL) standard was analyzed, and the target analytes were detected. Since the associated samples were non-detect for these analytes, the data was reported: (CCV 160-481316/2) and (LOQV 160-481316/5).

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recovered outside control limits for the following analytes: 1,1,2,2-Tetrachloroethane, Naphthalene, Bromoform, 1,3-Dichloropropane, Naphthalene, and 1,2-Dibromo-3-Chloropropane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data was reported: (LCS 160-481316/3) and (LCSD 160-481316/4).

The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recovered outside control limits for the following analytes: n-Butylbenzene, 4-Isopropyltoluene, Methyl-t-Butyl Ether (MTBE), m-Xylene & p-Xylene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, N-Propylbenzene, sec-Butylbenzene, and Hexachlorobutadiene. Since the affected target compounds were not detected in the samples, the data was reported and qualified: (LCS 160-481316/3) and (LCSD 160-481316/4).

The method blank contained 1,2,4-Trichlorobenzene above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples was not performed: (MB 160-481316/6).

The matrix spike / matrix spike duplicate (MS/MSD) recoveries were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits except for analytes: 1,1,2,2-Tetrachloroethane ,Naphthalene, Bromoform, 1,3-Dichloropropane, Naphthalene, and 1,2-Dibromo-3-Chloropropane: (160-39231-B-1 MS) and (160-39231-B-1 MSD).

Analytical Batch 160-481439:
The continuing calibration verification (CCV) recovered above the upper control limit for Naphthalene. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data was reported: (CCV 160-481439/2).

The laboratory control sample duplicate (LCSD) recovered outside control limits for Naphthalene. The analyte was biased high in the LCSD and was not detected in the associated samples; therefore, the data was reported: (LCSD 160-481439/4).

The method blank contained 1,2,4-Trichlorobenzene above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples was not performed: (MB 160-481439/6).

Job ID: 160-39190-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 160-481439 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits: (160-39244-B-6 MS) and (160-39244-B-6 MSD).

Analytical Batch 160-480690:
The following samples were reported with a ICV/CCV that failed to meet method criteria for the following compounds: 1,1,2,2, Tetrachloroethane, 1,2,3 Trichlorobenzene, 1,2,3 Trichloropropane, 1,2 Dibromo-3-Chloropropane, 1,3 Dichloropropane, Bromoform, Bromomethane, Chloromethane, Dichlorodifluoromethane, Methyl tert-butyl ether, Naphthalene, and Vinyl chloride. A reporting limit (RL) standard was analyzed, and the target analytes were detected. Since the associated samples were non-detect for these analytes, the data was reported: 42250-001 (160-39190-1), 42250-002 (160-39190-2), and 42250-003 (160-39190-3).

The matrix spike / matrix spike duplicate (MS/MSD) recoveries were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 42250-002 (160-39190-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 08/25/2020 and analyzed on 08/28/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42250

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name E. Kramer	Name EPD Field Sampling Team	Name: Test America
Life: No 20867 Ext 8826	Contact R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No 22486/23396 Dept ES	Phone 631 344 7129	City Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax lagattolla@bnl.gov	Contact Ivan Vania
E. Kramer	Sampler: J. Millian	Phone 314-298-8566
2B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD USE TB-1 for Coc # 42251

Type UID	Smp	Coll	Sample Information Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	8/18/20	1310	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1315	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1315	W	RTW-1 Effluent	250 ML	P	1	Hno3									X	
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X					

160-39190 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Millian 8/19/20	Print FED EX	Print
Signature 1600	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print Leonel Maravilcaya 8/20/2020	Print
Signature	Signature 0859	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-39190-1
SDG Number: 42250

Login Number: 39190
List Number: 1
Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39190-1
SDG: 42250

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Blank contamination: The analyte was detected above one-half the reporting limit in an associated blank.
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39190-1
SDG: 42250

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39190-1
SDG: 42250

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-39190-1	42250-001	Water	08/18/20 13:10	08/20/20 08:59	
160-39190-2	42250-002	Water	08/18/20 13:15	08/20/20 08:59	
160-39190-3	42250-003	Water	08/18/20 09:00	08/20/20 08:59	

Client Sample Results

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39190-1
SDG: 42250

Client Sample ID: 42250-001

Date Collected: 08/18/20 13:10
Date Received: 08/20/20 08:59

Lab Sample ID: 160-39190-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			08/26/20 09:47	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/26/20 09:47	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			08/26/20 09:47	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/26/20 09:47	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			08/26/20 09:47	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			08/26/20 09:47	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			08/26/20 09:47	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			08/26/20 09:47	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			08/26/20 09:47	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			08/26/20 09:47	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			08/26/20 09:47	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			08/26/20 09:47	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			08/26/20 09:47	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			08/26/20 09:47	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			08/26/20 09:47	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			08/26/20 09:47	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			08/26/20 09:47	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			08/26/20 09:47	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			08/26/20 09:47	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			08/26/20 09:47	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			08/26/20 09:47	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			08/26/20 09:47	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			08/26/20 09:47	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/26/20 09:47	1
Benzene	0.50	U	0.50	0.26	ug/L			08/26/20 09:47	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			08/26/20 09:47	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			08/26/20 09:47	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			08/26/20 09:47	1
Bromoform	0.50	U	0.50	0.32	ug/L			08/26/20 09:47	1
Bromomethane	0.57	U	0.57	0.57	ug/L			08/26/20 09:47	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			08/26/20 09:47	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			08/26/20 09:47	1
Chloroethane	0.50	U	0.50	0.32	ug/L			08/26/20 09:47	1
Chloroform	0.50	U	0.50	0.24	ug/L			08/26/20 09:47	1
Chloromethane	0.50	U	0.50	0.32	ug/L			08/26/20 09:47	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			08/26/20 09:47	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			08/26/20 09:47	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/26/20 09:47	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			08/26/20 09:47	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			08/26/20 09:47	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			08/26/20 09:47	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			08/26/20 09:47	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			08/26/20 09:47	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/26/20 09:47	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			08/26/20 09:47	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			08/26/20 09:47	1
Naphthalene	0.67	U	0.67	0.57	ug/L			08/26/20 09:47	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			08/26/20 09:47	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			08/26/20 09:47	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39190-1
SDG: 42250

Client Sample ID: 42250-001

Date Collected: 08/18/20 13:10
Date Received: 08/20/20 08:59

Lab Sample ID: 160-39190-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			08/26/20 09:47	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/26/20 09:47	1
Styrene	**0.61**	**B**	0.50	0.35	ug/L			08/26/20 09:47	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/26/20 09:47	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			08/26/20 09:47	1
Toluene	0.50	U	0.50	0.24	ug/L			08/26/20 09:47	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			08/26/20 09:47	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/26/20 09:47	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			08/26/20 09:47	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			08/26/20 09:47	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/26/20 09:47	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			08/26/20 09:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*123*		*70 - 130*		*08/26/20 09:47*	*1*
4-Bromofluorobenzene (Surr)	*124*		*70 - 130*		*08/26/20 09:47*	*1*

Client Sample ID: 42250-002

Date Collected: 08/18/20 13:15
Date Received: 08/20/20 08:59

Lab Sample ID: 160-39190-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			08/26/20 10:13	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/26/20 10:13	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			08/26/20 10:13	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/26/20 10:13	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			08/26/20 10:13	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			08/26/20 10:13	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			08/26/20 10:13	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			08/26/20 10:13	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			08/26/20 10:13	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			08/26/20 10:13	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			08/26/20 10:13	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			08/26/20 10:13	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			08/26/20 10:13	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			08/26/20 10:13	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			08/26/20 10:13	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			08/26/20 10:13	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			08/26/20 10:13	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			08/26/20 10:13	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			08/26/20 10:13	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			08/26/20 10:13	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			08/26/20 10:13	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			08/26/20 10:13	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			08/26/20 10:13	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/26/20 10:13	1
Benzene	0.50	U	0.50	0.26	ug/L			08/26/20 10:13	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			08/26/20 10:13	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			08/26/20 10:13	1

Client Sample ID: 42250-002

Date Collected: 08/18/20 13:15
Date Received: 08/20/20 08:59

Lab Sample ID: 160-39190-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			08/26/20 10:13	1
Bromoform	0.50	U	0.50	0.32	ug/L			08/26/20 10:13	1
Bromomethane	0.57	U	0.57	0.57	ug/L			08/26/20 10:13	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			08/26/20 10:13	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			08/26/20 10:13	1
Chloroethane	0.50	U	0.50	0.32	ug/L			08/26/20 10:13	1
Chloroform	0.50	U	0.50	0.24	ug/L			08/26/20 10:13	1
Chloromethane	0.50	U	0.50	0.32	ug/L			08/26/20 10:13	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			08/26/20 10:13	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			08/26/20 10:13	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/26/20 10:13	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			08/26/20 10:13	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			08/26/20 10:13	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			08/26/20 10:13	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			08/26/20 10:13	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			08/26/20 10:13	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/26/20 10:13	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			08/26/20 10:13	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			08/26/20 10:13	1
Naphthalene	0.67	U	0.67	0.57	ug/L			08/26/20 10:13	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			08/26/20 10:13	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			08/26/20 10:13	1
o-Xylene	0.50	U	0.50	0.43	ug/L			08/26/20 10:13	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/26/20 10:13	1
Styrene	**0.61**	**B**	0.50	0.35	ug/L			08/26/20 10:13	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/26/20 10:13	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			08/26/20 10:13	1
Toluene	0.50	U	0.50	0.24	ug/L			08/26/20 10:13	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			08/26/20 10:13	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/26/20 10:13	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			08/26/20 10:13	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			08/26/20 10:13	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/26/20 10:13	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			08/26/20 10:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*130*		*70 - 130*		*08/26/20 10:13*	*1*
4-Bromofluorobenzene (Surr)	*124*		*70 - 130*		*08/26/20 10:13*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chromium	10	U	10	4.0	ug/L		08/25/20 10:06	08/28/20 20:28	2
Thallium	2.0	U	2.0	0.90	ug/L		08/25/20 10:06	08/28/20 20:28	2

Client Sample Results

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39190-1
SDG: 42250

Client Sample ID: 42250-003

Date Collected: 08/18/20 09:00
Date Received: 08/20/20 08:59

Lab Sample ID: 160-39190-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			08/26/20 10:39	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/26/20 10:39	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			08/26/20 10:39	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/26/20 10:39	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			08/26/20 10:39	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			08/26/20 10:39	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			08/26/20 10:39	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			08/26/20 10:39	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			08/26/20 10:39	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			08/26/20 10:39	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			08/26/20 10:39	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			08/26/20 10:39	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			08/26/20 10:39	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			08/26/20 10:39	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			08/26/20 10:39	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			08/26/20 10:39	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			08/26/20 10:39	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			08/26/20 10:39	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			08/26/20 10:39	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			08/26/20 10:39	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			08/26/20 10:39	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			08/26/20 10:39	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			08/26/20 10:39	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/26/20 10:39	1
Benzene	0.50	U	0.50	0.26	ug/L			08/26/20 10:39	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			08/26/20 10:39	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			08/26/20 10:39	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			08/26/20 10:39	1
Bromoform	0.50	U	0.50	0.32	ug/L			08/26/20 10:39	1
Bromomethane	0.57	U	0.57	0.57	ug/L			08/26/20 10:39	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			08/26/20 10:39	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			08/26/20 10:39	1
Chloroethane	0.50	U	0.50	0.32	ug/L			08/26/20 10:39	1
Chloroform	0.50	U	0.50	0.24	ug/L			08/26/20 10:39	1
Chloromethane	0.50	U	0.50	0.32	ug/L			08/26/20 10:39	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			08/26/20 10:39	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			08/26/20 10:39	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/26/20 10:39	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			08/26/20 10:39	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			08/26/20 10:39	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			08/26/20 10:39	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			08/26/20 10:39	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			08/26/20 10:39	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/26/20 10:39	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			08/26/20 10:39	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			08/26/20 10:39	1
Naphthalene	0.67	U	0.67	0.57	ug/L			08/26/20 10:39	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			08/26/20 10:39	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			08/26/20 10:39	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39190-1
SDG: 42250

Client Sample ID: 42250-003
Date Collected: 08/18/20 09:00
Date Received: 08/20/20 08:59

Lab Sample ID: 160-39190-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			08/26/20 10:39	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/26/20 10:39	1
Styrene	0.50	U	0.50	0.35	ug/L			08/26/20 10:39	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/26/20 10:39	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			08/26/20 10:39	1
Toluene	0.50	U	0.50	0.24	ug/L			08/26/20 10:39	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			08/26/20 10:39	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/26/20 10:39	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			08/26/20 10:39	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			08/26/20 10:39	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/26/20 10:39	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			08/26/20 10:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*125*		*70 - 130*		*08/26/20 10:39*	*1*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*		*08/26/20 10:39*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-480690/6
Matrix: Water
Analysis Batch: 480690

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			08/26/20 02:34	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/26/20 02:34	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			08/26/20 02:34	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			08/26/20 02:34	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			08/26/20 02:34	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			08/26/20 02:34	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			08/26/20 02:34	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			08/26/20 02:34	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			08/26/20 02:34	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			08/26/20 02:34	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			08/26/20 02:34	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			08/26/20 02:34	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			08/26/20 02:34	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			08/26/20 02:34	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			08/26/20 02:34	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			08/26/20 02:34	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			08/26/20 02:34	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			08/26/20 02:34	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			08/26/20 02:34	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			08/26/20 02:34	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			08/26/20 02:34	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			08/26/20 02:34	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			08/26/20 02:34	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			08/26/20 02:34	1
Benzene	0.50	U	0.50	0.26	ug/L			08/26/20 02:34	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			08/26/20 02:34	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			08/26/20 02:34	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			08/26/20 02:34	1
Bromoform	0.50	U	0.50	0.32	ug/L			08/26/20 02:34	1
Bromomethane	0.57	U	0.57	0.57	ug/L			08/26/20 02:34	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			08/26/20 02:34	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			08/26/20 02:34	1
Chloroethane	0.50	U	0.50	0.32	ug/L			08/26/20 02:34	1
Chloroform	0.50	U	0.50	0.24	ug/L			08/26/20 02:34	1
Chloromethane	0.50	U	0.50	0.32	ug/L			08/26/20 02:34	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			08/26/20 02:34	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			08/26/20 02:34	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			08/26/20 02:34	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			08/26/20 02:34	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			08/26/20 02:34	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			08/26/20 02:34	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			08/26/20 02:34	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			08/26/20 02:34	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			08/26/20 02:34	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			08/26/20 02:34	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			08/26/20 02:34	1
Naphthalene	1.17		0.67	0.57	ug/L			08/26/20 02:34	1
n-Butylbenzene	0.500		0.50	0.42	ug/L			08/26/20 02:34	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-480690/6
Matrix: Water
Analysis Batch: 480690

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			08/26/20 02:34	1
o-Xylene	0.50	U	0.50	0.43	ug/L			08/26/20 02:34	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			08/26/20 02:34	1
Styrene	0.619		0.50	0.35	ug/L			08/26/20 02:34	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			08/26/20 02:34	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			08/26/20 02:34	1
Toluene	0.50	U	0.50	0.24	ug/L			08/26/20 02:34	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			08/26/20 02:34	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			08/26/20 02:34	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			08/26/20 02:34	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			08/26/20 02:34	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/26/20 02:34	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			08/26/20 02:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*116*		*70 - 130*		*08/26/20 02:34*	*1*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*		*08/26/20 02:34*	*1*

Lab Sample ID: LCS 160-480690/3
Matrix: Water
Analysis Batch: 480690

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,1-Trichloroethane	10.0	9.89		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	10.0	12.5		ug/L		125	70 - 130
1,1,2-Trichloroethane	10.0	11.0		ug/L		110	70 - 130
1,1-Dichloroethane	10.0	10.7		ug/L		107	70 - 130
1,1-Dichloroethene	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloropropene	10.0	10.0		ug/L		100	70 - 130
1,2,3-Trichlorobenzene	10.0	11.1		ug/L		111	70 - 130
1,2,3-Trichloropropane	10.0	12.8		ug/L		128	70 - 130
1,2,4-Trichlorobenzene	10.0	10.6		ug/L		106	70 - 130
1,2,4-Trimethylbenzene	10.0	10.2		ug/L		102	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	12.2		ug/L		122	70 - 130
1,2-Dibromoethane	10.0	11.7		ug/L		117	70 - 130
1,2-Dichlorobenzene	10.0	10.0		ug/L		100	70 - 130
1,2-Dichloroethane	10.0	11.3		ug/L		113	70 - 130
1,2-Dichloropropane	10.0	10.9		ug/L		109	70 - 130
1,3,5-Trimethylbenzene	10.0	10.0		ug/L		100	70 - 130
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130
1,3-Dichloropropane	10.0	11.3		ug/L		113	70 - 130
1,4-Dichlorobenzene	10.0	10.6		ug/L		106	70 - 130
2,2-Dichloropropane	10.0	8.00		ug/L		80	70 - 130
2-Chlorotoluene	10.0	10.8		ug/L		108	70 - 130
4-Chlorotoluene	10.0	9.30		ug/L		93	70 - 130
4-Isopropyltoluene	10.0	9.84		ug/L		98	70 - 130
Benzene	10.0	10.2		ug/L		102	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-480690/3
Matrix: Water
Analysis Batch: 480690

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.3		ug/L		103	70 - 130
Bromochloromethane	10.0	11.8		ug/L		118	70 - 130
Bromodichloromethane	10.0	10.5		ug/L		105	70 - 130
Bromoform	10.0	12.1		ug/L		121	70 - 130
Bromomethane	10.0	12.1		ug/L		121	70 - 130
Carbon tetrachloride	10.0	9.65		ug/L		97	70 - 130
Chlorobenzene	10.0	9.56		ug/L		96	70 - 130
Chloroethane	10.0	11.0		ug/L		110	70 - 130
Chloroform	10.0	10.4		ug/L		104	70 - 130
Chloromethane	10.0	11.3		ug/L		113	70 - 130
cis-1,2-Dichloroethene	10.0	10.7		ug/L		107	70 - 130
cis-1,3-Dichloropropene	10.0	10.1		ug/L		101	70 - 130
Dibromochloromethane	10.0	11.1		ug/L		111	70 - 130
Dibromomethane	10.0	10.9		ug/L		109	70 - 130
Dichlorodifluoromethane	10.0	11.7		ug/L		117	70 - 130
Ethylbenzene	10.0	9.53		ug/L		95	70 - 130
Hexachlorobutadiene	10.0	10.0		ug/L		100	70 - 130
Isopropylbenzene	10.0	10.4		ug/L		104	70 - 130
Methylene Chloride	10.0	10.6		ug/L		106	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	12.1		ug/L		121	70 - 130
m-Xylene & p-Xylene	10.0	9.94		ug/L		99	70 - 130
Naphthalene	10.0	12.1		ug/L		121	70 - 130
n-Butylbenzene	10.0	9.13		ug/L		91	70 - 130
N-Propylbenzene	10.0	10.1		ug/L		101	70 - 130
o-Xylene	10.0	8.79		ug/L		88	70 - 130
sec-Butylbenzene	10.0	10.1		ug/L		101	70 - 130
Styrene	10.0	9.18		ug/L		92	70 - 130
tert-Butylbenzene	10.0	10.2		ug/L		102	70 - 130
Tetrachloroethene	10.0	9.18		ug/L		92	70 - 130
Toluene	10.0	9.69		ug/L		97	70 - 130
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	70 - 130
trans-1,3-Dichloropropene	10.0	11.0		ug/L		110	70 - 130
Trichloroethene	10.0	10.0		ug/L		100	70 - 130
Trichlorofluoromethane	10.0	10.8		ug/L		108	70 - 130
Vinyl chloride	10.0	10.8		ug/L		108	70 - 130
Xylenes, Total	20.0	18.7		ug/L		94	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: LCSD 160-480690/4
Matrix: Water
Analysis Batch: 480690

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.4		ug/L		104	70 - 130	2	20
1,1,1-Trichloroethane	10.0	9.92		ug/L		99	70 - 130	0	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-480690/4
Matrix: Water
Analysis Batch: 480690

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	10.0	11.7		ug/L		117	70 - 130	7	20
1,1,2-Trichloroethane	10.0	11.5		ug/L		115	70 - 130	5	20
1,1-Dichloroethane	10.0	10.7		ug/L		107	70 - 130	1	20
1,1-Dichloroethene	10.0	10.5		ug/L		105	70 - 130	0	20
1,1-Dichloropropene	10.0	10.3		ug/L		103	70 - 130	3	20
1,2,3-Trichlorobenzene	10.0	11.5		ug/L		115	70 - 130	3	20
1,2,3-Trichloropropane	10.0	11.7		ug/L		117	70 - 130	9	20
1,2,4-Trichlorobenzene	10.0	10.9		ug/L		109	70 - 130	3	20
1,2,4-Trimethylbenzene	10.0	10.4		ug/L		104	70 - 130	3	20
1,2-Dibromo-3-Chloropropane	10.0	12.4		ug/L		124	70 - 130	2	20
1,2-Dibromoethane	10.0	11.4		ug/L		114	70 - 130	2	20
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130	3	20
1,2-Dichloroethane	10.0	11.1		ug/L		111	70 - 130	2	20
1,2-Dichloropropane	10.0	10.9		ug/L		109	70 - 130	0	20
1,3,5-Trimethylbenzene	10.0	10.4		ug/L		104	70 - 130	4	20
1,3-Dichlorobenzene	10.0	10.6		ug/L		106	70 - 130	3	20
1,3-Dichloropropane	10.0	11.6		ug/L		116	70 - 130	3	20
1,4-Dichlorobenzene	10.0	10.7		ug/L		107	70 - 130	2	20
2,2-Dichloropropane	10.0	7.70		ug/L		77	70 - 130	4	20
2-Chlorotoluene	10.0	11.2		ug/L		112	70 - 130	3	20
4-Chlorotoluene	10.0	9.62		ug/L		96	70 - 130	3	20
4-Isopropyltoluene	10.0	10.4		ug/L		104	70 - 130	6	20
Benzene	10.0	10.4		ug/L		104	70 - 130	2	20
Bromobenzene	10.0	10.4		ug/L		104	70 - 130	1	20
Bromochloromethane	10.0	11.3		ug/L		113	70 - 130	4	20
Bromodichloromethane	10.0	10.6		ug/L		106	70 - 130	0	20
Bromoform	10.0	11.8		ug/L		118	70 - 130	2	20
Bromomethane	10.0	12.1		ug/L		121	70 - 130	0	20
Carbon tetrachloride	10.0	9.81		ug/L		98	70 - 130	2	20
Chlorobenzene	10.0	9.97		ug/L		100	70 - 130	4	20
Chloroethane	10.0	10.9		ug/L		109	70 - 130	1	20
Chloroform	10.0	10.2		ug/L		102	70 - 130	2	20
Chloromethane	10.0	11.3		ug/L		113	70 - 130	0	20
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	70 - 130	1	20
cis-1,3-Dichloropropene	10.0	10.2		ug/L		102	70 - 130	1	20
Dibromochloromethane	10.0	11.1		ug/L		111	70 - 130	0	20
Dibromomethane	10.0	10.7		ug/L		107	70 - 130	2	20
Dichlorodifluoromethane	10.0	11.3		ug/L		113	70 - 130	4	20
Ethylbenzene	10.0	9.95		ug/L		99	70 - 130	4	20
Hexachlorobutadiene	10.0	10.3		ug/L		103	70 - 130	3	20
Isopropylbenzene	10.0	10.8		ug/L		108	70 - 130	3	20
Methylene Chloride	10.0	10.4		ug/L		104	70 - 130	2	20
Methyl-t-Butyl Ether (MTBE)	10.0	12.0		ug/L		120	70 - 130	1	20
m-Xylene & p-Xylene	10.0	10.5		ug/L		105	70 - 130	6	20
Naphthalene	10.0	12.5		ug/L		125	70 - 130	3	20
n-Butylbenzene	10.0	9.29		ug/L		93	70 - 130	2	20
N-Propylbenzene	10.0	10.5		ug/L		105	70 - 130	4	20
o-Xylene	10.0	9.50		ug/L		95	70 - 130	8	20
sec-Butylbenzene	10.0	10.3		ug/L		103	70 - 130	2	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-480690/4
Matrix: Water
Analysis Batch: 480690

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Styrene			10.0	9.58		ug/L		96	70 - 130	4	20
tert-Butylbenzene			10.0	10.6		ug/L		106	70 - 130	4	20
Tetrachloroethene			10.0	9.49		ug/L		95	70 - 130	3	20
Toluene			10.0	9.92		ug/L		99	70 - 130	2	20
trans-1,2-Dichloroethene			10.0	10.3		ug/L		103	70 - 130	1	20
trans-1,3-Dichloropropene			10.0	11.1		ug/L		111	70 - 130	1	20
Trichloroethene			10.0	10.4		ug/L		104	70 - 130	4	20
Trichlorofluoromethane			10.0	10.6		ug/L		106	70 - 130	2	20
Vinyl chloride			10.0	11.0		ug/L		110	70 - 130	2	20
Xylenes, Total			20.0	20.0		ug/L		100	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-480678/1-A
Matrix: Water
Analysis Batch: 481101

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 480678

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chromium	10	U	10	4.0	ug/L		08/25/20 10:06	08/28/20 20:23	2
Thallium	2.0	U	2.0	0.90	ug/L		08/25/20 10:06	08/28/20 20:23	2

Lab Sample ID: LCS 160-480678/2-A
Matrix: Water
Analysis Batch: 481101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 480678

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chromium			1000	1060		ug/L		106	85 - 116		
Thallium			200	204		ug/L		102	82 - 116		

Lab Sample ID: 160-39190-2 MS
Matrix: Water
Analysis Batch: 481101

Client Sample ID: 42250-002
Prep Type: Total/NA
Prep Batch: 480678

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chromium	10	U	1000	1010		ug/L		101	85 - 116		
Thallium	2.0	U	200	197		ug/L		98	82 - 116		

Lab Sample ID: 160-39190-2 MSD
Matrix: Water
Analysis Batch: 481101

Client Sample ID: 42250-002
Prep Type: Total/NA
Prep Batch: 480678

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	10	U	1000	1040		ug/L		104	85 - 116	3	20
Thallium	2.0	U	200	202		ug/L		101	82 - 116	2	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39190-1
SDG: 42250

GC/MS VOA

Analysis Batch: 480690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39190-1	42250-001	Total/NA	Water	524.2	
160-39190-2	42250-002	Total/NA	Water	524.2	
160-39190-3	42250-003	Total/NA	Water	524.2	
MB 160-480690/6	Method Blank	Total/NA	Water	524.2	
LCS 160-480690/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-480690/4	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 480678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39190-2	42250-002	Total/NA	Water	3010A	
MB 160-480678/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-480678/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-39190-2 MS	42250-002	Total/NA	Water	3010A	
160-39190-2 MSD	42250-002	Total/NA	Water	3010A	

Analysis Batch: 481101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39190-2	42250-002	Total/NA	Water	6020A	480678
MB 160-480678/1-A	Method Blank	Total/NA	Water	6020A	480678
LCS 160-480678/2-A	Lab Control Sample	Total/NA	Water	6020A	480678
160-39190-2 MS	42250-002	Total/NA	Water	6020A	480678
160-39190-2 MSD	42250-002	Total/NA	Water	6020A	480678

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39190-1
SDG: 42250

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		DCZ	BFB								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-39190-1	42250-001	123	124								
160-39190-2	42250-002	130	124								
160-39190-3	42250-003	125	115								
LCS 160-480690/3	Lab Control Sample	102	104								
LCSD 160-480690/4	Lab Control Sample Dup	102	101								
MB 160-480690/6	Method Blank	116	118								

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-39351-1
Laboratory Sample Delivery Group: 42301
Client Project/Site: BNL - OU8 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
9/17/2020 9:11:13 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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QC Association Summary 23
Surrogate Summary 24

Job ID: 160-39351-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU8 B96

Report Number: 160-39351-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 9/3/2020 9:19 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42301-001 (160-39351-1), 42301-002 (160-39351-2) and 42301-003 (160-39351-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 09/11/2020.

Job ID: 160-39351-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-482129:
The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 160-482129 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits: (160-39375-A-10 MS) and (160-39375-A-10 MSD).

Analytical Batch 160-481780:
The initial calibration curve was outside acceptance criteria for the following target analytes: 1,4-Dioxane, 2-Butanone (MEK), 2-Methyl-2-propanol, Acetone, Ethanol, Isopropyl alcohol, and n-Butanol. These analytes are known to be poor responders; therefore, a low level standard (LOQV) will be analyzed with each subsequent batch associated with this ICAL to demonstrate detection of these analytes.

The continuing calibration verification (CCV) recovered above the upper control limit for Methylene Chloride, Methyl methacrylate, n-Butylbenzene, Propionitrile , Benzyl chloride, Cyclohexanone, Ethyl acrylate, Ethyl methacrylate, Ethyl acetate, 2-Butanone (MEK) , and Acetone . The samples associated with this CCV were non-detect for the affected analytes; therefore, the data was reported: (ICIS 160-481780/8).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 42301-002 (160-39351-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 09/08/2020 and analyzed on 09/09/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. Therefore, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-39351 Chain of Custody

Requires EDD ☑

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42301

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Mill	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	**Project Manager:**	**Field Engineer:**
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD USC TB-1 for GC # 42302

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	9/1/20	1310	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1315	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1315	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Mill 9/2/20	Print FED EX	Print
Signature 1330	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print Leonel Marquez 9/3/2020	Print
Signature	Signature 0919	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☒ Disposal by Lab
- ☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-39351-1
SDG Number: 42301

Login Number: 39351
List Number: 1
Creator: Vania, Ivan H

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU8 B96

Job ID: 160-39351-1
SDG: 42301

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU8 B96

Job ID: 160-39351-1
SDG: 42301

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU8 B96

Job ID: 160-39351-1
SDG: 42301

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-39351-1	42301-001	Water	09/01/20 13:10	09/03/20 12:22	
160-39351-2	42301-002	Water	09/01/20 13:15	09/03/20 12:22	
160-39351-3	42301-003	Water	09/01/20 09:00	09/03/20 12:22	

Client: Brookhaven National Labs
Project/Site: BNL - OU8 B96

Job ID: 160-39351-1
SDG: 42301

Client Sample ID: 42301-001
Date Collected: 09/01/20 13:10
Date Received: 09/03/20 12:22

Lab Sample ID: 160-39351-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			09/11/20 14:08	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/11/20 14:08	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			09/11/20 14:08	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/11/20 14:08	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			09/11/20 14:08	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			09/11/20 14:08	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			09/11/20 14:08	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			09/11/20 14:08	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			09/11/20 14:08	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/11/20 14:08	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			09/11/20 14:08	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			09/11/20 14:08	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			09/11/20 14:08	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			09/11/20 14:08	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			09/11/20 14:08	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			09/11/20 14:08	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			09/11/20 14:08	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			09/11/20 14:08	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			09/11/20 14:08	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			09/11/20 14:08	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			09/11/20 14:08	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			09/11/20 14:08	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			09/11/20 14:08	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/11/20 14:08	1
Benzene	0.50	U	0.50	0.26	ug/L			09/11/20 14:08	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			09/11/20 14:08	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			09/11/20 14:08	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			09/11/20 14:08	1
Bromoform	0.50	U	0.50	0.32	ug/L			09/11/20 14:08	1
Bromomethane	0.57	U	0.57	0.57	ug/L			09/11/20 14:08	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			09/11/20 14:08	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			09/11/20 14:08	1
Chloroethane	0.50	U	0.50	0.32	ug/L			09/11/20 14:08	1
Chloroform	**0.66**		0.50	0.24	ug/L			09/11/20 14:08	1
Chloromethane	0.50	U	0.50	0.32	ug/L			09/11/20 14:08	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			09/11/20 14:08	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			09/11/20 14:08	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/11/20 14:08	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			09/11/20 14:08	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			09/11/20 14:08	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			09/11/20 14:08	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			09/11/20 14:08	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			09/11/20 14:08	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/11/20 14:08	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			09/11/20 14:08	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			09/11/20 14:08	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/11/20 14:08	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/11/20 14:08	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			09/11/20 14:08	1

Client Sample ID: 42301-001

Date Collected: 09/01/20 13:10
Date Received: 09/03/20 12:22

Lab Sample ID: 160-39351-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			09/11/20 14:08	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/11/20 14:08	1
Styrene	0.50	U	0.50	0.35	ug/L			09/11/20 14:08	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/11/20 14:08	1
Tetrachloroethene	**4.0**		0.50	0.31	ug/L			09/11/20 14:08	1
Toluene	0.50	U	0.50	0.24	ug/L			09/11/20 14:08	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			09/11/20 14:08	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/11/20 14:08	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			09/11/20 14:08	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			09/11/20 14:08	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/11/20 14:08	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			09/11/20 14:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*09/11/20 14:08*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*09/11/20 14:08*	*1*

Client Sample ID: 42301-002

Date Collected: 09/01/20 13:15
Date Received: 09/03/20 12:22

Lab Sample ID: 160-39351-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			09/11/20 14:33	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/11/20 14:33	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			09/11/20 14:33	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/11/20 14:33	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			09/11/20 14:33	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			09/11/20 14:33	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			09/11/20 14:33	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			09/11/20 14:33	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			09/11/20 14:33	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/11/20 14:33	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			09/11/20 14:33	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			09/11/20 14:33	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			09/11/20 14:33	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			09/11/20 14:33	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			09/11/20 14:33	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			09/11/20 14:33	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			09/11/20 14:33	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			09/11/20 14:33	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			09/11/20 14:33	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			09/11/20 14:33	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			09/11/20 14:33	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			09/11/20 14:33	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			09/11/20 14:33	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/11/20 14:33	1
Benzene	0.50	U	0.50	0.26	ug/L			09/11/20 14:33	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			09/11/20 14:33	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			09/11/20 14:33	1

Client: Brookhaven National Labs
Project/Site: BNL - OU8 B96

Job ID: 160-39351-1
SDG: 42301

Client Sample ID: 42301-002

Date Collected: 09/01/20 13:15
Date Received: 09/03/20 12:22

Lab Sample ID: 160-39351-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			09/11/20 14:33	1
Bromoform	0.50	U	0.50	0.32	ug/L			09/11/20 14:33	1
Bromomethane	0.57	U	0.57	0.57	ug/L			09/11/20 14:33	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			09/11/20 14:33	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			09/11/20 14:33	1
Chloroethane	0.50	U	0.50	0.32	ug/L			09/11/20 14:33	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/11/20 14:33	1
Chloromethane	0.50	U	0.50	0.32	ug/L			09/11/20 14:33	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			09/11/20 14:33	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			09/11/20 14:33	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/11/20 14:33	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			09/11/20 14:33	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			09/11/20 14:33	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			09/11/20 14:33	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			09/11/20 14:33	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			09/11/20 14:33	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/11/20 14:33	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			09/11/20 14:33	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			09/11/20 14:33	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/11/20 14:33	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/11/20 14:33	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			09/11/20 14:33	1
o-Xylene	0.50	U	0.50	0.43	ug/L			09/11/20 14:33	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/11/20 14:33	1
Styrene	0.50	U	0.50	0.35	ug/L			09/11/20 14:33	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/11/20 14:33	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			09/11/20 14:33	1
Toluene	0.50	U	0.50	0.24	ug/L			09/11/20 14:33	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			09/11/20 14:33	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/11/20 14:33	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			09/11/20 14:33	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			09/11/20 14:33	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/11/20 14:33	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			09/11/20 14:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*		*09/11/20 14:33*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*09/11/20 14:33*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		09/08/20 14:25	09/09/20 22:08	2

Client Sample ID: 42301-003

Date Collected: 09/01/20 09:00
Date Received: 09/03/20 12:22

Lab Sample ID: 160-39351-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			09/11/20 14:57	1

Client: Brookhaven National Labs
Project/Site: BNL - OU8 B96

Job ID: 160-39351-1
SDG: 42301

Client Sample ID: 42301-003
Date Collected: 09/01/20 09:00
Date Received: 09/03/20 12:22

Lab Sample ID: 160-39351-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/11/20 14:57	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			09/11/20 14:57	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/11/20 14:57	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			09/11/20 14:57	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			09/11/20 14:57	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			09/11/20 14:57	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			09/11/20 14:57	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			09/11/20 14:57	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/11/20 14:57	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			09/11/20 14:57	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			09/11/20 14:57	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			09/11/20 14:57	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			09/11/20 14:57	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			09/11/20 14:57	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			09/11/20 14:57	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			09/11/20 14:57	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			09/11/20 14:57	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			09/11/20 14:57	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			09/11/20 14:57	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			09/11/20 14:57	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			09/11/20 14:57	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			09/11/20 14:57	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/11/20 14:57	1
Benzene	0.50	U	0.50	0.26	ug/L			09/11/20 14:57	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			09/11/20 14:57	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			09/11/20 14:57	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			09/11/20 14:57	1
Bromoform	0.50	U	0.50	0.32	ug/L			09/11/20 14:57	1
Bromomethane	0.57	U	0.57	0.57	ug/L			09/11/20 14:57	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			09/11/20 14:57	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			09/11/20 14:57	1
Chloroethane	0.50	U	0.50	0.32	ug/L			09/11/20 14:57	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/11/20 14:57	1
Chloromethane	0.50	U	0.50	0.32	ug/L			09/11/20 14:57	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			09/11/20 14:57	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			09/11/20 14:57	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/11/20 14:57	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			09/11/20 14:57	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			09/11/20 14:57	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			09/11/20 14:57	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			09/11/20 14:57	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			09/11/20 14:57	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/11/20 14:57	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			09/11/20 14:57	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			09/11/20 14:57	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/11/20 14:57	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/11/20 14:57	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			09/11/20 14:57	1
o-Xylene	0.50	U	0.50	0.43	ug/L			09/11/20 14:57	1

Client: Brookhaven National Labs
Project/Site: BNL - OU8 B96

Job ID: 160-39351-1
SDG: 42301

Client Sample ID: 42301-003
Date Collected: 09/01/20 09:00
Date Received: 09/03/20 12:22

Lab Sample ID: 160-39351-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/11/20 14:57	1
Styrene	0.50	U	0.50	0.35	ug/L			09/11/20 14:57	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/11/20 14:57	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			09/11/20 14:57	1
Toluene	0.50	U	0.50	0.24	ug/L			09/11/20 14:57	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			09/11/20 14:57	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/11/20 14:57	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			09/11/20 14:57	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			09/11/20 14:57	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/11/20 14:57	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			09/11/20 14:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*		*09/11/20 14:57*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*09/11/20 14:57*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-482129/6
Matrix: Water
Analysis Batch: 482129

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			09/11/20 13:44	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/11/20 13:44	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			09/11/20 13:44	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/11/20 13:44	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			09/11/20 13:44	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			09/11/20 13:44	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			09/11/20 13:44	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			09/11/20 13:44	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			09/11/20 13:44	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/11/20 13:44	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			09/11/20 13:44	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			09/11/20 13:44	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			09/11/20 13:44	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			09/11/20 13:44	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			09/11/20 13:44	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			09/11/20 13:44	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			09/11/20 13:44	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			09/11/20 13:44	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			09/11/20 13:44	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			09/11/20 13:44	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			09/11/20 13:44	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			09/11/20 13:44	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			09/11/20 13:44	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/11/20 13:44	1
Benzene	0.50	U	0.50	0.26	ug/L			09/11/20 13:44	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			09/11/20 13:44	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			09/11/20 13:44	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			09/11/20 13:44	1
Bromoform	0.50	U	0.50	0.32	ug/L			09/11/20 13:44	1
Bromomethane	0.57	U	0.57	0.57	ug/L			09/11/20 13:44	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			09/11/20 13:44	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			09/11/20 13:44	1
Chloroethane	0.50	U	0.50	0.32	ug/L			09/11/20 13:44	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/11/20 13:44	1
Chloromethane	0.50	U	0.50	0.32	ug/L			09/11/20 13:44	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			09/11/20 13:44	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			09/11/20 13:44	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/11/20 13:44	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			09/11/20 13:44	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			09/11/20 13:44	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			09/11/20 13:44	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			09/11/20 13:44	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			09/11/20 13:44	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/11/20 13:44	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			09/11/20 13:44	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			09/11/20 13:44	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/11/20 13:44	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/11/20 13:44	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-482129/6
Matrix: Water
Analysis Batch: 482129

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			09/11/20 13:44	1
o-Xylene	0.50	U	0.50	0.43	ug/L			09/11/20 13:44	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/11/20 13:44	1
Styrene	0.50	U	0.50	0.35	ug/L			09/11/20 13:44	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/11/20 13:44	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			09/11/20 13:44	1
Toluene	0.50	U	0.50	0.24	ug/L			09/11/20 13:44	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			09/11/20 13:44	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/11/20 13:44	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			09/11/20 13:44	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			09/11/20 13:44	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/11/20 13:44	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			09/11/20 13:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*		*09/11/20 13:44*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*09/11/20 13:44*	*1*

Lab Sample ID: LCS 160-482129/3
Matrix: Water
Analysis Batch: 482129

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.2		ug/L		102	70 - 130
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.9		ug/L		109	70 - 130
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloroethane	10.0	10.2		ug/L		102	70 - 130
1,1-Dichloroethene	10.0	9.53		ug/L		95	70 - 130
1,1-Dichloropropene	10.0	10.2		ug/L		102	70 - 130
1,2,3-Trichlorobenzene	10.0	11.2		ug/L		112	70 - 130
1,2,3-Trichloropropane	10.0	10.5		ug/L		105	70 - 130
1,2,4-Trichlorobenzene	10.0	11.2		ug/L		112	70 - 130
1,2,4-Trimethylbenzene	10.0	10.9		ug/L		109	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	10.5		ug/L		105	70 - 130
1,2-Dibromoethane	10.0	10.2		ug/L		102	70 - 130
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130
1,2-Dichloroethane	10.0	10.7		ug/L		107	70 - 130
1,2-Dichloropropane	10.0	10.6		ug/L		106	70 - 130
1,3,5-Trimethylbenzene	10.0	10.9		ug/L		109	70 - 130
1,3-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,3-Dichloropropane	10.0	10.4		ug/L		104	70 - 130
1,4-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130
2,2-Dichloropropane	10.0	10.2		ug/L		102	70 - 130
2-Chlorotoluene	10.0	10.4		ug/L		104	70 - 130
4-Chlorotoluene	10.0	10.5		ug/L		105	70 - 130
4-Isopropyltoluene	10.0	10.2		ug/L		102	70 - 130
Benzene	10.0	10.1		ug/L		101	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-482129/3
Matrix: Water
Analysis Batch: 482129

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	10.0	10.6		ug/L		106	70 - 130
Bromochloromethane	10.0	10.3		ug/L		103	70 - 130
Bromodichloromethane	10.0	10.5		ug/L		105	70 - 130
Bromoform	10.0	9.75		ug/L		98	70 - 130
Bromomethane	10.0	9.49		ug/L		95	70 - 130
Carbon tetrachloride	10.0	9.92		ug/L		99	70 - 130
Chlorobenzene	10.0	10.2		ug/L		102	70 - 130
Chloroethane	10.0	10.4		ug/L		104	70 - 130
Chloroform	10.0	10.4		ug/L		104	70 - 130
Chloromethane	10.0	9.95		ug/L		100	70 - 130
cis-1,2-Dichloroethene	10.0	9.91		ug/L		99	70 - 130
cis-1,3-Dichloropropene	10.0	10.8		ug/L		108	70 - 130
Dibromochloromethane	10.0	10.4		ug/L		104	70 - 130
Dibromomethane	10.0	10.9		ug/L		109	70 - 130
Dichlorodifluoromethane	10.0	8.85		ug/L		89	70 - 130
Ethylbenzene	10.0	10.3		ug/L		103	70 - 130
Hexachlorobutadiene	10.0	11.2		ug/L		112	70 - 130
Isopropylbenzene	10.0	10.6		ug/L		106	70 - 130
Methylene Chloride	10.0	10.1		ug/L		101	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	10.8		ug/L		108	70 - 130
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	70 - 130
Naphthalene	10.0	11.3		ug/L		113	70 - 130
n-Butylbenzene	10.0	10.5		ug/L		105	70 - 130
N-Propylbenzene	10.0	10.4		ug/L		104	70 - 130
o-Xylene	10.0	10.4		ug/L		104	70 - 130
sec-Butylbenzene	10.0	10.9		ug/L		109	70 - 130
Styrene	10.0	10.6		ug/L		106	70 - 130
tert-Butylbenzene	10.0	10.1		ug/L		101	70 - 130
Tetrachloroethene	10.0	10.2		ug/L		102	70 - 130
Toluene	10.0	10.2		ug/L		102	70 - 130
trans-1,2-Dichloroethene	10.0	9.65		ug/L		97	70 - 130
trans-1,3-Dichloropropene	10.0	10.7		ug/L		107	70 - 130
Trichloroethene	10.0	9.94		ug/L		99	70 - 130
Trichlorofluoromethane	10.0	9.58		ug/L		96	70 - 130
Vinyl chloride	10.0	9.81		ug/L		98	70 - 130
Xylenes, Total	20.0	20.6		ug/L		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 160-482129/4
Matrix: Water
Analysis Batch: 482129

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	11.1		ug/L		111	70 - 130	8	20
1,1,1-Trichloroethane	10.0	10.8		ug/L		108	70 - 130	5	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-482129/4
Matrix: Water
Analysis Batch: 482129

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	10.0	10.9		ug/L		109	70 - 130	0	20
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	70 - 130	0	20
1,1-Dichloroethane	10.0	11.0		ug/L		110	70 - 130	7	20
1,1-Dichloroethene	10.0	9.95		ug/L		99	70 - 130	4	20
1,1-Dichloropropene	10.0	10.6		ug/L		106	70 - 130	5	20
1,2,3-Trichlorobenzene	10.0	11.7		ug/L		117	70 - 130	5	20
1,2,3-Trichloropropane	10.0	10.2		ug/L		102	70 - 130	2	20
1,2,4-Trichlorobenzene	10.0	11.6		ug/L		116	70 - 130	4	20
1,2,4-Trimethylbenzene	10.0	10.7		ug/L		107	70 - 130	2	20
1,2-Dibromo-3-Chloropropane	10.0	10.8		ug/L		108	70 - 130	3	20
1,2-Dibromoethane	10.0	10.4		ug/L		104	70 - 130	2	20
1,2-Dichlorobenzene	10.0	10.5		ug/L		105	70 - 130	2	20
1,2-Dichloroethane	10.0	10.6		ug/L		106	70 - 130	0	20
1,2-Dichloropropane	10.0	10.7		ug/L		107	70 - 130	1	20
1,3,5-Trimethylbenzene	10.0	10.6		ug/L		106	70 - 130	3	20
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130	2	20
1,3-Dichloropropane	10.0	10.1		ug/L		101	70 - 130	3	20
1,4-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130	0	20
2,2-Dichloropropane	10.0	10.8		ug/L		108	70 - 130	6	20
2-Chlorotoluene	10.0	10.2		ug/L		102	70 - 130	2	20
4-Chlorotoluene	10.0	9.97		ug/L		100	70 - 130	5	20
4-Isopropyltoluene	10.0	9.86		ug/L		99	70 - 130	4	20
Benzene	10.0	10.5		ug/L		105	70 - 130	3	20
Bromobenzene	10.0	10.4		ug/L		104	70 - 130	2	20
Bromochloromethane	10.0	10.7		ug/L		107	70 - 130	3	20
Bromodichloromethane	10.0	10.7		ug/L		107	70 - 130	2	20
Bromoform	10.0	9.67		ug/L		97	70 - 130	1	20
Bromomethane	10.0	10.3		ug/L		103	70 - 130	9	20
Carbon tetrachloride	10.0	10.7		ug/L		107	70 - 130	7	20
Chlorobenzene	10.0	10.3		ug/L		103	70 - 130	1	20
Chloroethane	10.0	11.3		ug/L		113	70 - 130	8	20
Chloroform	10.0	10.8		ug/L		108	70 - 130	5	20
Chloromethane	10.0	10.9		ug/L		109	70 - 130	9	20
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	70 - 130	6	20
cis-1,3-Dichloropropene	10.0	10.5		ug/L		105	70 - 130	3	20
Dibromochloromethane	10.0	10.7		ug/L		107	70 - 130	3	20
Dibromomethane	10.0	11.0		ug/L		110	70 - 130	0	20
Dichlorodifluoromethane	10.0	9.93		ug/L		99	70 - 130	11	20
Ethylbenzene	10.0	10.4		ug/L		104	70 - 130	1	20
Hexachlorobutadiene	10.0	11.2		ug/L		112	70 - 130	0	20
Isopropylbenzene	10.0	10.2		ug/L		102	70 - 130	4	20
Methylene Chloride	10.0	10.8		ug/L		108	70 - 130	6	20
Methyl-t-Butyl Ether (MTBE)	10.0	11.6		ug/L		116	70 - 130	7	20
m-Xylene & p-Xylene	10.0	10.3		ug/L		103	70 - 130	1	20
Naphthalene	10.0	12.0		ug/L		120	70 - 130	6	20
n-Butylbenzene	10.0	10.2		ug/L		102	70 - 130	3	20
N-Propylbenzene	10.0	9.87		ug/L		99	70 - 130	5	20
o-Xylene	10.0	10.8		ug/L		108	70 - 130	4	20
sec-Butylbenzene	10.0	10.4		ug/L		104	70 - 130	5	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-482129/4
Matrix: Water
Analysis Batch: 482129

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Styrene			10.0	10.6		ug/L		106	70 - 130	0	20
tert-Butylbenzene			10.0	9.74		ug/L		97	70 - 130	4	20
Tetrachloroethene			10.0	10.2		ug/L		102	70 - 130	0	20
Toluene			10.0	10.4		ug/L		104	70 - 130	2	20
trans-1,2-Dichloroethene			10.0	10.2		ug/L		102	70 - 130	6	20
trans-1,3-Dichloropropene			10.0	10.6		ug/L		106	70 - 130	1	20
Trichloroethene			10.0	10.2		ug/L		102	70 - 130	3	20
Trichlorofluoromethane			10.0	10.6		ug/L		106	70 - 130	10	20
Vinyl chloride			10.0	10.6		ug/L		106	70 - 130	8	20
Xylenes, Total			20.0	21.1		ug/L		106	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: 160-39375-A-10 MS
Matrix: Water
Analysis Batch: 482129

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.5	U D	50.0	52.3	D	ug/L		105	73 - 123
1,1,1-Trichloroethane	2.5	U D	50.0	50.7	D	ug/L		101	76 - 122
1,1,2,2-Tetrachloroethane	2.5	U D	50.0	62.7	D	ug/L		125	77 - 118
1,1,2-Trichloroethane	2.5	U D	50.0	61.4	D	ug/L		123	79 - 116
1,1-Dichloroethane	2.5	U D	50.0	55.3	D	ug/L		111	81 - 120
1,1-Dichloroethene	2.5	U D	50.0	46.6	D	ug/L		93	68 - 116
1,1-Dichloropropene	2.5	U D	50.0	48.1	D	ug/L		96	74 - 124
1,2,3-Trichlorobenzene	3.0	U D	50.0	56.0	D	ug/L		112	57 - 128
1,2,3-Trichloropropane	2.5	U D	50.0	56.9	D	ug/L		114	72 - 122
1,2,4-Trichlorobenzene	2.8	U D	50.0	54.2	D	ug/L		108	54 - 150
1,2,4-Trimethylbenzene	2.5	U D	50.0	49.2	D	ug/L		98	70 - 125
1,2-Dibromo-3-Chloropropane	3.2	U D	50.0	55.1	D	ug/L		110	58 - 130
1,2-Dibromoethane	2.5	U D	50.0	56.8	D	ug/L		114	76 - 118
1,2-Dichlorobenzene	2.5	U D	50.0	50.9	D	ug/L		102	76 - 120
1,2-Dichloroethane	2.5	U D	50.0	59.0	D	ug/L		118	78 - 123
1,2-Dichloropropane	2.5	U D	50.0	57.5	D	ug/L		115	80 - 119
1,3,5-Trimethylbenzene	2.5	U D	50.0	47.9	D	ug/L		96	76 - 126
1,3-Dichlorobenzene	2.5	U D	50.0	49.2	D	ug/L		98	76 - 120
1,3-Dichloropropane	2.5	U D	50.0	57.7	D	ug/L		115	79 - 116
1,4-Dichlorobenzene	2.5	U D	50.0	50.2	D	ug/L		100	75 - 117
2,2-Dichloropropane	2.5	U D	50.0	41.4	D	ug/L		83	76 - 120
2-Chlorotoluene	2.5	U D	50.0	48.3	D	ug/L		97	79 - 125
4-Chlorotoluene	2.5	U D	50.0	48.2	D	ug/L		96	76 - 136
4-Isopropyltoluene	2.5	U D	50.0	43.4	D	ug/L		87	78 - 132
Benzene	2.5	U D	50.0	52.9	D	ug/L		106	77 - 124
Bromobenzene	2.5	U D	50.0	54.5	D	ug/L		109	77 - 115
Bromochloromethane	2.5	U D	50.0	55.3	D	ug/L		111	73 - 118
Bromodichloromethane	2.5	U D	50.0	56.9	D	ug/L		114	73 - 118

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-39375-A-10 MS
Matrix: Water
Analysis Batch: 482129

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromoform	2.5	U D	50.0	53.2	D	ug/L		106	70 - 118
Bromomethane	2.9	U D	50.0	51.1	D	ug/L		102	46 - 147
Carbon tetrachloride	2.5	U D	50.0	48.2	D	ug/L		96	70 - 128
Chlorobenzene	2.5	U D	50.0	50.7	D	ug/L		101	76 - 124
Chloroethane	2.5	U D	50.0	59.8	D	ug/L		120	66 - 129
Chloroform	2.5	U D	50.0	54.8	D	ug/L		110	77 - 122
Chloromethane	2.5	U D	50.0	57.8	D	ug/L		116	68 - 132
cis-1,2-Dichloroethene	2.5	U D	50.0	51.7	D	ug/L		103	71 - 117
cis-1,3-Dichloropropene	2.5	U D	50.0	52.3	D	ug/L		105	76 - 128
Dibromochloromethane	2.5	U D	50.0	57.2	D	ug/L		114	73 - 114
Dibromomethane	2.5	U D	50.0	59.2	D	ug/L		118	77 - 118
Dichlorodifluoromethane	3.3	U D	50.0	48.1	D	ug/L		96	61 - 134
Ethylbenzene	2.5	U D	50.0	46.5	D	ug/L		93	80 - 122
Hexachlorobutadiene	2.5	U D	50.0	47.7	D	ug/L		95	57 - 144
Isopropylbenzene	2.5	U D	50.0	45.7	D	ug/L		91	85 - 148
Methylene Chloride	2.5	U D	50.0	55.2	D	ug/L		110	65 - 131
Methyl-t-Butyl Ether (MTBE)	2.5	U D	50.0	54.5	D	ug/L		109	75 - 122
m-Xylene & p-Xylene	5.0	U D	50.0	45.6	D	ug/L		91	70 - 130
Naphthalene	3.4	U D	50.0	57.0	D	ug/L		114	56 - 143
n-Butylbenzene	2.5	U D	50.0	43.4	D	ug/L		87	74 - 128
N-Propylbenzene	2.5	U D	50.0	45.0	D	ug/L		90	80 - 132
o-Xylene	2.5	U D	50.0	46.9	D	ug/L		94	70 - 130
sec-Butylbenzene	2.5	U D	50.0	45.3	D	ug/L		91	78 - 128
Styrene	2.5	U D	50.0	50.3	D	ug/L		101	68 - 125
tert-Butylbenzene	2.5	U D	50.0	43.2	D	ug/L		86	75 - 131
Tetrachloroethene	2.5	U D	50.0	44.7	D	ug/L		89	71 - 124
Toluene	2.5	U D	50.0	49.6	D	ug/L		99	76 - 127
trans-1,2-Dichloroethene	2.5	U D	50.0	46.5	D	ug/L		93	72 - 117
trans-1,3-Dichloropropene	2.5	U D	50.0	55.4	D	ug/L		111	85 - 135
Trichloroethene	13	D	50.0	62.8	D	ug/L		99	71 - 118
Trichlorofluoromethane	2.5	U D	50.0	43.6	D	ug/L		87	56 - 127
Vinyl chloride	2.5	U D	50.0	53.6	D	ug/L		107	58 - 114
Xylenes, Total	15	U D	100	92.5		ug/L		93	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: 160-39375-A-10 MSD
Matrix: Water
Analysis Batch: 482129

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.5	U D	50.0	51.5	D	ug/L		103	73 - 123	1	20
1,1,1-Trichloroethane	2.5	U D	50.0	49.1	D	ug/L		98	76 - 122	3	20
1,1,2,2-Tetrachloroethane	2.5	U D	50.0	65.0	D	ug/L		130	77 - 118	4	20
1,1,2-Trichloroethane	2.5	U D	50.0	58.5	D	ug/L		117	79 - 116	5	20
1,1-Dichloroethane	2.5	U D	50.0	54.7	D	ug/L		109	81 - 120	1	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-39375-A-10 MSD
Matrix: Water
Analysis Batch: 482129

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	2.5	U D	50.0	45.8	D	ug/L		92	68 - 116	2	20
1,1-Dichloropropene	2.5	U D	50.0	46.8	D	ug/L		94	74 - 124	3	20
1,2,3-Trichlorobenzene	3.0	U D	50.0	57.5	D	ug/L		115	57 - 128	3	20
1,2,3-Trichloropropane	2.5	U D	50.0	61.2	D	ug/L		122	72 - 122	7	20
1,2,4-Trichlorobenzene	2.8	U D	50.0	54.8	D	ug/L		110	54 - 150	1	20
1,2,4-Trimethylbenzene	2.5	U D	50.0	49.8	D	ug/L		100	70 - 125	1	20
1,2-Dibromo-3-Chloropropane	3.2	U D	50.0	57.0	D	ug/L		114	58 - 130	3	20
1,2-Dibromoethane	2.5	U D	50.0	55.3	D	ug/L		111	76 - 118	3	20
1,2-Dichlorobenzene	2.5	U D	50.0	53.0	D	ug/L		106	76 - 120	4	20
1,2-Dichloroethane	2.5	U D	50.0	58.8	D	ug/L		118	78 - 123	0	20
1,2-Dichloropropane	2.5	U D	50.0	57.9	D	ug/L		116	80 - 119	1	20
1,3,5-Trimethylbenzene	2.5	U D	50.0	47.7	D	ug/L		95	76 - 126	0	20
1,3-Dichlorobenzene	2.5	U D	50.0	50.7	D	ug/L		101	76 - 120	3	20
1,3-Dichloropropane	2.5	U D	50.0	56.7	D	ug/L		113	79 - 116	2	20
1,4-Dichlorobenzene	2.5	U D	50.0	51.9	D	ug/L		104	75 - 117	3	20
2,2-Dichloropropane	2.5	U D	50.0	39.7	D	ug/L		79	76 - 120	4	20
2-Chlorotoluene	2.5	U D	50.0	49.3	D	ug/L		99	79 - 125	2	20
4-Chlorotoluene	2.5	U D	50.0	49.8	D	ug/L		100	76 - 136	3	20
4-Isopropyltoluene	2.5	U D	50.0	41.0	D	ug/L		82	78 - 132	6	20
Benzene	2.5	U D	50.0	52.3	D	ug/L		105	77 - 124	1	20
Bromobenzene	2.5	U D	50.0	57.1	D	ug/L		114	77 - 115	5	20
Bromochloromethane	2.5	U D	50.0	55.9	D	ug/L		112	73 - 118	1	20
Bromodichloromethane	2.5	U D	50.0	57.4	D	ug/L		115	73 - 118	1	20
Bromoform	2.5	U D	50.0	55.1	D	ug/L		110	70 - 118	4	20
Bromomethane	2.9	U D	50.0	52.0	D	ug/L		104	46 - 147	2	20
Carbon tetrachloride	2.5	U D	50.0	46.9	D	ug/L		94	70 - 128	3	20
Chlorobenzene	2.5	U D	50.0	50.5	D	ug/L		101	76 - 124	0	20
Chloroethane	2.5	U D	50.0	58.8	D	ug/L		118	66 - 129	2	20
Chloroform	2.5	U D	50.0	54.5	D	ug/L		109	77 - 122	1	20
Chloromethane	2.5	U D	50.0	55.5	D	ug/L		111	68 - 132	4	20
cis-1,2-Dichloroethene	2.5	U D	50.0	51.2	D	ug/L		102	71 - 117	1	20
cis-1,3-Dichloropropene	2.5	U D	50.0	53.8	D	ug/L		108	76 - 128	3	20
Dibromochloromethane	2.5	U D	50.0	55.8	D	ug/L		112	73 - 114	3	20
Dibromomethane	2.5	U D	50.0	58.4	D	ug/L		117	77 - 118	1	20
Dichlorodifluoromethane	3.3	U D	50.0	49.6	D	ug/L		99	61 - 134	3	20
Ethylbenzene	2.5	U D	50.0	45.8	D	ug/L		92	80 - 122	1	20
Hexachlorobutadiene	2.5	U D	50.0	42.3	D	ug/L		85	57 - 144	12	20
Isopropylbenzene	2.5	U D	50.0	45.7	D	ug/L		91	85 - 148	0	20
Methylene Chloride	2.5	U D	50.0	53.6	D	ug/L		107	65 - 131	3	20
Methyl-t-Butyl Ether (MTBE)	2.5	U D	50.0	55.0	D	ug/L		110	75 - 122	1	20
m-Xylene & p-Xylene	5.0	U D	50.0	44.2	D	ug/L		88	70 - 130	3	20
Naphthalene	3.4	U D	50.0	61.4	D	ug/L		123	56 - 143	7	20
n-Butylbenzene	2.5	U D	50.0	40.1	D	ug/L		80	74 - 128	8	20
N-Propylbenzene	2.5	U D	50.0	43.4	D	ug/L		87	80 - 132	4	20
o-Xylene	2.5	U D	50.0	46.8	D	ug/L		94	70 - 130	0	20
sec-Butylbenzene	2.5	U D	50.0	42.7	D	ug/L		85	78 - 128	6	20
Styrene	2.5	U D	50.0	51.0	D	ug/L		102	68 - 125	2	20
tert-Butylbenzene	2.5	U D	50.0	42.6	D	ug/L		85	75 - 131	1	20
Tetrachloroethene	2.5	U D	50.0	42.9	D	ug/L		86	71 - 124	4	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-39375-A-10 MSD
Matrix: Water
Analysis Batch: 482129

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene	2.5	U D	50.0	49.5	D	ug/L		99	76 - 127	0	20
trans-1,2-Dichloroethene	2.5	U D	50.0	46.2	D	ug/L		92	72 - 117	1	20
trans-1,3-Dichloropropene	2.5	U D	50.0	54.9	D	ug/L		110	85 - 135	1	20
Trichloroethene	13	D	50.0	60.8	D	ug/L		95	71 - 118	3	20
Trichlorofluoromethane	2.5	U D	50.0	51.7	D	ug/L		103	56 - 127	17	20
Vinyl chloride	2.5	U D	50.0	52.1	D	ug/L		104	58 - 114	3	20
Xylenes, Total	15	U D	100	91.0		ug/L		91	78 - 128	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-481752/1-A ^2
Matrix: Water
Analysis Batch: 481844

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 481752

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		09/08/20 14:25	09/09/20 22:01	2

Lab Sample ID: LCS 160-481752/2-A ^2
Matrix: Water
Analysis Batch: 481844

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 481752

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	202		ug/L		101	82 - 116		

Lab Sample ID: 160-39351-2 MS
Matrix: Water
Analysis Batch: 481844

Client Sample ID: 42301-002
Prep Type: Total/NA
Prep Batch: 481752

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	189		ug/L		95	82 - 116		

Lab Sample ID: 160-39351-2 MSD
Matrix: Water
Analysis Batch: 481844

Client Sample ID: 42301-002
Prep Type: Total/NA
Prep Batch: 481752

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	191		ug/L		96	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU8 B96

Job ID: 160-39351-1
SDG: 42301

GC/MS VOA

Analysis Batch: 482129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39351-1	42301-001	Total/NA	Water	524.2	
160-39351-2	42301-002	Total/NA	Water	524.2	
160-39351-3	42301-003	Total/NA	Water	524.2	
MB 160-482129/6	Method Blank	Total/NA	Water	524.2	
LCS 160-482129/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-482129/4	Lab Control Sample Dup	Total/NA	Water	524.2	
160-39375-A-10 MS	Matrix Spike	Total/NA	Water	524.2	
160-39375-A-10 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Metals

Prep Batch: 481752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39351-2	42301-002	Total/NA	Water	3010A	
MB 160-481752/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-481752/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-39351-2 MS	42301-002	Total/NA	Water	3010A	
160-39351-2 MSD	42301-002	Total/NA	Water	3010A	

Analysis Batch: 481844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39351-2	42301-002	Total/NA	Water	6020A	481752
MB 160-481752/1-A ^2	Method Blank	Total/NA	Water	6020A	481752
LCS 160-481752/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	481752
160-39351-2 MS	42301-002	Total/NA	Water	6020A	481752
160-39351-2 MSD	42301-002	Total/NA	Water	6020A	481752

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU8 B96

Job ID: 160-39351-1
SDG: 42301

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		DCZ	BFB										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
160-39351-1	42301-001	99	92										
160-39351-2	42301-002	101	100										
160-39351-3	42301-003	101	98										
160-39375-A-10 MS	Matrix Spike	102	95										
160-39375-A-10 MSD	Matrix Spike Duplicate	103	100										
LCS 160-482129/3	Lab Control Sample	101	99										
LCSD 160-482129/4	Lab Control Sample Dup	102	94										
MB 160-482129/6	Method Blank	102	95										

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4
BFB = 4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-39488-1
Laboratory Sample Delivery Group: 42353
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
10/21/2020 1:20:13 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-39488-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-39488-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 9/17/2020 9:15 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.8º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42353-001 (160-39488-1), 42353-002 (160-39488-2) and 42353-003 (160-39488-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 09/28/2020, 09/29/2020, 09/30/2020 and 10/20/2020.

Job ID: 160-39488-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The following changes are made to the EPA 524.2 method for the analysis of Brookhaven ground water samples:

- 40mL vials are not baked in a 105 °C oven for one hour.
- The vials used are certified by the vendor as being free of organic contaminants.
- The Initial Calibration is prepared using purged-DI water, not a HCl-acidified solution.
- After the 11 minute purge, the trap is desorbed at 250 °C for 1 minute instead of 180 °C for 4 minutes.
- Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.
- The laboratory does not use a second source standard for the LCS (LFB) or CCV (QCS).
- The laboratory prepares the calibration standards at a neutral pH.

Analytical Batch 160-484019:
The continuing calibration verification (CCV) recovered above the upper control limit for ; 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,2,3-Trichloropropane, 1,3-Dichloropropane, Bromoform, Bromomethane, Chlorobromomethane, Chlorodibromomethane, Chloroethane, Chloromethane, Dibromomethane ,Dibromomethane, Ethylene Dibromide, Methyl-t-Butyl Ether (MTBE) , Methylene Chloride, Naphthalene, trans-1,3-Dichloropropene, Trichlorofluoromethane, and Vinyl chloride . The samples associated with this CCV were non-detect for the affected analytes; therefore, the data was reported: (CCV 160-484019/2).

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) recovered outside control limits for the following analytes: 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,2,3-Trichloropropane, Bromoform, Bromomethane, Chloroethane, Chloromethane, Ethylene Dibromide, Trichlorofluoromethane, and Vinyl chloride. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data was reported: (LCS 160-484019/3) and (LCSD 160-484019/4).

The native sample, matrix spike, and matrix spike duplicate (MS/MSD) were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Carbon tetrachloride and Tetrachloroethene in the MS/MSD was above the instrument calibration range. The data was reported and qualified: (160-39521-A-9 MS) and (160-39521-A-9 MSD).

The matrix spike / matrix spike duplicate (MS/MSD) recoveries were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limit except for 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane,1,2,3-Trichloropropane, Bromoform, Bromomethane, Chloroethane, Chloromethane, Ethylene Dibromide, Trichlorofluoromethane, and Vinyl chloride. There is insufficient sample volume to perform repreparation and re-analysis: (160-39521-A-9 MS) and (160-39521-A-9 MSD).

The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits: (160-39521-A-9 MS) and (160-39521-A-9 MSD).

Analytical Batch 160-484068:
The initial calibration curve was outside acceptance criteria for the following target analytes: Acetone, 2-Butanone (MEK), and Methyl acetate. These analytes are known to be poor responders. Therefore, a low level standard (LOQV) was analyzed with each subsequent batch associated with this ICAL to demonstrate detection of these analytes: (ICIS 160-484068/8).

The initial calibration verification (ICV) result was above the upper control limit for 4-Methyl-2-pentanone (MIBK) and Naphthalene. Sample results were non-detects, and have been reported as qualified data: (ICIS 160-484068/8).

The initial calibration curve verification was outside acceptance criteria for the following target analytes: Acetone, 2-Butanone (MEK), and Methyl acetate. . These analytes are known to be poor responders. Therefore, a low level standard (LOQV) was analyzed to demonstrate detection of these analytes: (ICV 160-484068/12).

Job ID: 160-39488-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The initial calibration verification (ICV) was outside acceptance criteria for Dichlorodifluoromethane. A low level standard (LOQV) will be analyzed with each subsequent batch associated with this ICAL/ICV to demonstrate detection of the analyte: (ICV 160-484068/12).

The matrix spike / matrix spike duplicate (MS/MSD) recoveries were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits: (160-39483-A-13 MS) and (160-39483-A-13 MSD).

The matrix spike / matrix spike duplicate (MS/MSD) precision was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits: (160-39483-A-13 MS) and (160-39483-A-13 MSD).

Analytical Batch 160-486381:
The samples listed are associated with a calibration on the instrument that was inadvertently not processed for 1,2-Dibromo-3-Chloropropane. The analyte was qualitatively present in the daily reporting limit check standard showing the system had sufficient sensitivity to detect the analyte. The chromatograms for each sample were evaluated for the analyte and it was found to not be present in the samples listed. Reanalysis of the following samples were performed outside of the analytical holding time to verify the non-detections: 42353-001 (160-39488-1), 42353-002 (160-39488-2), and 42353-003 (160-39488-3).

The continuing calibration verification (CCVIS) did not meet the minimum relative response factor limits or other passing criteria for the following target analytes: n-Butanol, 1,2-Dibromo-3-Chloropropane, Acetone, Vinyl chloride, and Acetone. A low-level standard (LOQV) was analyzed, and the affected analytes were detected. Any of these target analytes recovering above the reporting limit were qualified and reported: (CCV 160-486381/2) and (LOQV 160-486381/5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 42353-002 (160-39488-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 09/22/2020 and analyzed on 09/25/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

Preparation Batch 160-483330, Analytical Batch 160-483950:
The matrix spike / matrix spike duplicate (MS/MSD) recoveries were outside control limits for Thallium. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits: (160-39488-D-2-B MS ^2) and (160-39488-D-2-C MSD ^2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-39488 Chain of Custody

Requires EDD ☑

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42353

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept. ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Milligan	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	**Project Manager:**	**Field Engineer:**
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD VOC TB-1 For COC# 42352

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	9/15/20	1030	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1035	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1035	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X							

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milligan 9/16/20 1330	Print FEDEX	Print
Signature	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FEDEX	Print MICHA KORRINHIZER	Print
Signature	Signature Micha Korrinhizer SEP 17 2020 09:15	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☑ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☑ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-39488-1
SDG Number: 42353

Login Number: 39488
List Number: 1
Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39488-1
SDG: 42353

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
N	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39488-1
SDG: 42353

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39488-1
SDG: 42353

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-39488-1	42353-001	Water	09/15/20 10:30	09/17/20 09:15	
160-39488-2	42353-002	Water	09/15/20 10:35	09/17/20 09:15	
160-39488-3	42353-003	Water	09/15/20 09:00	09/17/20 09:15	

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39488-1
SDG: 42353

Client Sample ID: 42353-001
Date Collected: 09/15/20 10:30
Date Received: 09/17/20 09:15

Lab Sample ID: 160-39488-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			09/28/20 23:38	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/28/20 23:38	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			09/28/20 23:38	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/28/20 23:38	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			09/28/20 23:38	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			09/28/20 23:38	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			09/28/20 23:38	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			09/28/20 23:38	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			09/28/20 23:38	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/28/20 23:38	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			09/28/20 23:38	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			10/20/20 20:19	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			09/28/20 23:38	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			09/28/20 23:38	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			09/28/20 23:38	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			09/28/20 23:38	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			09/28/20 23:38	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			09/28/20 23:38	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			09/28/20 23:38	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			09/28/20 23:38	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			09/28/20 23:38	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			09/28/20 23:38	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			09/28/20 23:38	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/28/20 23:38	1
Benzene	0.50	U	0.50	0.26	ug/L			09/28/20 23:38	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			09/28/20 23:38	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			09/28/20 23:38	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			09/28/20 23:38	1
Bromoform	0.50	U	0.50	0.32	ug/L			09/28/20 23:38	1
Bromomethane	0.57	U	0.57	0.57	ug/L			09/28/20 23:38	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			09/28/20 23:38	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			09/28/20 23:38	1
Chloroethane	0.50	U	0.50	0.32	ug/L			09/28/20 23:38	1
Chloroform	**0.59**		0.50	0.24	ug/L			09/28/20 23:38	1
Chloromethane	0.50	U	0.50	0.32	ug/L			09/28/20 23:38	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			09/28/20 23:38	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			09/28/20 23:38	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/28/20 23:38	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			09/28/20 23:38	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			09/28/20 23:38	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			09/28/20 23:38	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			09/28/20 23:38	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			09/28/20 23:38	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/28/20 23:38	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			09/28/20 23:38	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			09/28/20 23:38	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/28/20 23:38	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/28/20 23:38	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			09/28/20 23:38	1

Client Sample ID: 42353-001

Date Collected: 09/15/20 10:30
Date Received: 09/17/20 09:15

Lab Sample ID: 160-39488-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			09/28/20 23:38	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/28/20 23:38	1
Styrene	0.50	U	0.50	0.35	ug/L			09/28/20 23:38	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/28/20 23:38	1
Tetrachloroethene	**4.0**		0.50	0.31	ug/L			09/28/20 23:38	1
Toluene	0.50	U	0.50	0.24	ug/L			09/28/20 23:38	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			09/28/20 23:38	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/28/20 23:38	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			09/28/20 23:38	1
Trichlorofluoromethane	**0.50**		0.50	0.26	ug/L			09/28/20 23:38	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/28/20 23:38	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			09/28/20 23:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*114*		*70 - 130*		*09/28/20 23:38*	*1*
1,2-Dichlorobenzene-d4	*113*		*70 - 130*		*10/20/20 20:19*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*09/28/20 23:38*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*10/20/20 20:19*	*1*

Client Sample ID: 42353-002

Date Collected: 09/15/20 10:35
Date Received: 09/17/20 09:15

Lab Sample ID: 160-39488-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			09/29/20 00:03	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/29/20 00:03	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			09/29/20 00:03	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/29/20 00:03	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			09/29/20 00:03	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			09/29/20 00:03	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			09/29/20 00:03	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			09/29/20 00:03	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			09/29/20 00:03	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/29/20 00:03	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			09/29/20 00:03	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			10/20/20 20:43	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			09/29/20 00:03	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			09/29/20 00:03	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			09/29/20 00:03	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			09/29/20 00:03	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			09/29/20 00:03	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			09/29/20 00:03	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			09/29/20 00:03	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			09/29/20 00:03	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			09/29/20 00:03	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			09/29/20 00:03	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			09/29/20 00:03	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/29/20 00:03	1
Benzene	0.50	U	0.50	0.26	ug/L			09/29/20 00:03	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39488-1
SDG: 42353

Client Sample ID: 42353-002
Date Collected: 09/15/20 10:35
Date Received: 09/17/20 09:15

Lab Sample ID: 160-39488-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	0.50	U	0.50	0.26	ug/L			09/29/20 00:03	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			09/29/20 00:03	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			09/29/20 00:03	1
Bromoform	0.50	U	0.50	0.32	ug/L			09/29/20 00:03	1
Bromomethane	0.57	U	0.57	0.57	ug/L			09/29/20 00:03	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			09/29/20 00:03	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			09/29/20 00:03	1
Chloroethane	0.50	U	0.50	0.32	ug/L			09/29/20 00:03	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/29/20 00:03	1
Chloromethane	0.50	U	0.50	0.32	ug/L			09/29/20 00:03	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			09/29/20 00:03	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			09/29/20 00:03	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/29/20 00:03	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			09/29/20 00:03	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			09/29/20 00:03	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			09/29/20 00:03	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			09/29/20 00:03	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			09/29/20 00:03	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/29/20 00:03	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			09/29/20 00:03	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			09/29/20 00:03	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/29/20 00:03	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/29/20 00:03	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			09/29/20 00:03	1
o-Xylene	0.50	U	0.50	0.43	ug/L			09/29/20 00:03	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/29/20 00:03	1
Styrene	0.50	U	0.50	0.35	ug/L			09/29/20 00:03	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/29/20 00:03	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			09/29/20 00:03	1
Toluene	0.50	U	0.50	0.24	ug/L			09/29/20 00:03	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			09/29/20 00:03	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/29/20 00:03	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			09/29/20 00:03	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			09/29/20 00:03	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/29/20 00:03	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			09/29/20 00:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*		*09/29/20 00:03*	*1*
1,2-Dichlorobenzene-d4	*119*		*70 - 130*		*10/20/20 20:43*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*09/29/20 00:03*	*1*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*		*10/20/20 20:43*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		09/22/20 13:23	09/25/20 23:04	2

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39488-1
SDG: 42353

Client Sample ID: 42353-003
Date Collected: 09/15/20 09:00
Date Received: 09/17/20 09:15

Lab Sample ID: 160-39488-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			09/29/20 03:21	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/29/20 03:21	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			09/29/20 03:21	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/29/20 03:21	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			09/29/20 03:21	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			09/29/20 03:21	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			09/29/20 03:21	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			09/29/20 03:21	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			09/29/20 03:21	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/29/20 03:21	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			09/29/20 03:21	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			09/30/20 00:43	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			09/29/20 03:21	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			09/29/20 03:21	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			09/29/20 03:21	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			09/29/20 03:21	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			09/29/20 03:21	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			09/29/20 03:21	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			09/29/20 03:21	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			09/29/20 03:21	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			09/29/20 03:21	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			09/29/20 03:21	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			09/29/20 03:21	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/29/20 03:21	1
Benzene	0.50	U	0.50	0.26	ug/L			09/29/20 03:21	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			09/29/20 03:21	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			09/29/20 03:21	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			09/29/20 03:21	1
Bromoform	0.50	U	0.50	0.32	ug/L			09/29/20 03:21	1
Bromomethane	0.57	U	0.57	0.57	ug/L			09/29/20 03:21	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			09/29/20 03:21	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			09/29/20 03:21	1
Chloroethane	0.50	U	0.50	0.32	ug/L			09/29/20 03:21	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/29/20 03:21	1
Chloromethane	0.50	U	0.50	0.32	ug/L			09/29/20 03:21	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			09/29/20 03:21	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			09/29/20 03:21	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/29/20 03:21	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			09/29/20 03:21	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			09/29/20 03:21	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			09/29/20 03:21	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			09/30/20 00:43	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			09/29/20 03:21	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/29/20 03:21	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			09/29/20 03:21	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			09/29/20 03:21	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/29/20 03:21	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/30/20 00:43	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			09/29/20 03:21	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39488-1
SDG: 42353

Client Sample ID: 42353-003
Date Collected: 09/15/20 09:00
Date Received: 09/17/20 09:15

Lab Sample ID: 160-39488-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.43	ug/L			09/29/20 03:21	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/29/20 03:21	1
Styrene	0.50	U	0.50	0.35	ug/L			09/29/20 03:21	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/29/20 03:21	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			09/29/20 03:21	1
Toluene	0.50	U	0.50	0.24	ug/L			09/29/20 03:21	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			09/29/20 03:21	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/29/20 03:21	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			09/29/20 03:21	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			09/29/20 03:21	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/29/20 03:21	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			09/29/20 03:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*118*		*70 - 130*		*09/29/20 03:21*	*1*
1,2-Dichlorobenzene-d4	*118*		*70 - 130*		*09/30/20 00:43*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*09/29/20 03:21*	*1*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*		*09/30/20 00:43*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-484018/6
Matrix: Water
Analysis Batch: 484018

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			09/28/20 15:01	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/28/20 15:01	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			09/28/20 15:01	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/28/20 15:01	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			09/28/20 15:01	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			09/28/20 15:01	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			09/28/20 15:01	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			09/28/20 15:01	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			09/28/20 15:01	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/28/20 15:01	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			09/28/20 15:01	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			09/28/20 15:01	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			09/28/20 15:01	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			09/28/20 15:01	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			09/28/20 15:01	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			09/28/20 15:01	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			09/28/20 15:01	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			09/28/20 15:01	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			09/28/20 15:01	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			09/28/20 15:01	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			09/28/20 15:01	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			09/28/20 15:01	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			09/28/20 15:01	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/28/20 15:01	1
Benzene	0.50	U	0.50	0.26	ug/L			09/28/20 15:01	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			09/28/20 15:01	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			09/28/20 15:01	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			09/28/20 15:01	1
Bromoform	0.50	U	0.50	0.32	ug/L			09/28/20 15:01	1
Bromomethane	0.57	U	0.57	0.57	ug/L			09/28/20 15:01	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			09/28/20 15:01	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			09/28/20 15:01	1
Chloroethane	0.50	U	0.50	0.32	ug/L			09/28/20 15:01	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/28/20 15:01	1
Chloromethane	0.50	U	0.50	0.32	ug/L			09/28/20 15:01	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			09/28/20 15:01	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			09/28/20 15:01	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/28/20 15:01	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			09/28/20 15:01	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			09/28/20 15:01	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			09/28/20 15:01	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			09/28/20 15:01	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			09/28/20 15:01	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/28/20 15:01	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			09/28/20 15:01	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			09/28/20 15:01	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/28/20 15:01	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/28/20 15:01	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-484018/6
Matrix: Water
Analysis Batch: 484018

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			09/28/20 15:01	1
o-Xylene	0.50	U	0.50	0.43	ug/L			09/28/20 15:01	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/28/20 15:01	1
Styrene	0.50	U	0.50	0.35	ug/L			09/28/20 15:01	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/28/20 15:01	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			09/28/20 15:01	1
Toluene	0.50	U	0.50	0.24	ug/L			09/28/20 15:01	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			09/28/20 15:01	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/28/20 15:01	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			09/28/20 15:01	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			09/28/20 15:01	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/28/20 15:01	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			09/28/20 15:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*104*		*70 - 130*		*09/28/20 15:01*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*09/28/20 15:01*	*1*

Lab Sample ID: LCS 160-484018/3
Matrix: Water
Analysis Batch: 484018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.9		ug/L		109	70 - 130
1,1,1-Trichloroethane	10.0	12.0		ug/L		120	70 - 130
1,1,2,2-Tetrachloroethane	10.0	8.72		ug/L		87	70 - 130
1,1,2-Trichloroethane	10.0	8.81		ug/L		88	70 - 130
1,1-Dichloroethane	10.0	11.2		ug/L		112	70 - 130
1,1-Dichloroethene	10.0	12.9		ug/L		129	70 - 130
1,1-Dichloropropene	10.0	11.2		ug/L		112	70 - 130
1,2,3-Trichlorobenzene	10.0	9.99		ug/L		100	70 - 130
1,2,3-Trichloropropane	10.0	9.45		ug/L		94	70 - 130
1,2,4-Trichlorobenzene	10.0	10.3		ug/L		103	70 - 130
1,2,4-Trimethylbenzene	10.0	10.9		ug/L		109	70 - 130
1,2-Dibromoethane	10.0	9.49		ug/L		95	70 - 130
1,2-Dichlorobenzene	10.0	9.49		ug/L		95	70 - 130
1,2-Dichloroethane	10.0	8.93		ug/L		89	70 - 130
1,2-Dichloropropane	10.0	9.07		ug/L		91	70 - 130
1,3,5-Trimethylbenzene	10.0	10.8		ug/L		108	70 - 130
1,3-Dichlorobenzene	10.0	9.65		ug/L		96	70 - 130
1,3-Dichloropropane	10.0	8.73		ug/L		87	70 - 130
1,4-Dichlorobenzene	10.0	9.52		ug/L		95	70 - 130
2,2-Dichloropropane	10.0	12.9		ug/L		129	70 - 130
2-Chlorotoluene	10.0	9.93		ug/L		99	70 - 130
4-Chlorotoluene	10.0	9.89		ug/L		99	70 - 130
4-Isopropyltoluene	10.0	11.4		ug/L		114	70 - 130
Benzene	10.0	10.0		ug/L		100	70 - 130
Bromobenzene	10.0	8.80		ug/L		88	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-484018/3
Matrix: Water
Analysis Batch: 484018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromochloromethane	10.0	10.6		ug/L		106	70 - 130
Bromodichloromethane	10.0	9.23		ug/L		92	70 - 130
Bromoform	10.0	9.37		ug/L		94	70 - 130
Bromomethane	10.0	13.2		ug/L		132	70 - 130
Carbon tetrachloride	10.0	12.0		ug/L		120	70 - 130
Chlorobenzene	10.0	9.59		ug/L		96	70 - 130
Chloroethane	10.0	12.9		ug/L		129	70 - 130
Chloroform	10.0	10.4		ug/L		104	70 - 130
Chloromethane	10.0	12.8		ug/L		128	70 - 130
cis-1,2-Dichloroethene	10.0	11.4		ug/L		114	70 - 130
cis-1,3-Dichloropropene	10.0	8.64		ug/L		86	70 - 130
Dibromochloromethane	10.0	9.82		ug/L		98	70 - 130
Dibromomethane	10.0	9.06		ug/L		91	70 - 130
Dichlorodifluoromethane	10.0	10.4		ug/L		104	70 - 130
Ethylbenzene	10.0	10.8		ug/L		108	70 - 130
Hexachlorobutadiene	10.0	11.0		ug/L		110	70 - 130
Isopropylbenzene	10.0	10.6		ug/L		106	70 - 130
Methylene Chloride	10.0	11.1		ug/L		111	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	12.1		ug/L		121	70 - 130
m-Xylene & p-Xylene	10.0	11.4		ug/L		114	70 - 130
Naphthalene	10.0	10.0		ug/L		100	70 - 130
n-Butylbenzene	10.0	10.1		ug/L		101	70 - 130
N-Propylbenzene	10.0	10.2		ug/L		102	70 - 130
o-Xylene	10.0	12.2		ug/L		122	70 - 130
sec-Butylbenzene	10.0	11.0		ug/L		110	70 - 130
Styrene	10.0	11.5		ug/L		115	70 - 130
tert-Butylbenzene	10.0	10.5		ug/L		105	70 - 130
Tetrachloroethene	10.0	9.91		ug/L		99	70 - 130
Toluene	10.0	9.31		ug/L		93	70 - 130
trans-1,2-Dichloroethene	10.0	12.1		ug/L		121	70 - 130
trans-1,3-Dichloropropene	10.0	8.97		ug/L		90	70 - 130
Trichloroethene	10.0	9.80		ug/L		98	70 - 130
Trichlorofluoromethane	10.0	13.2		ug/L		132	70 - 130
Vinyl chloride	10.0	13.1		ug/L		131	70 - 130
Xylenes, Total	20.0	23.6		ug/L		118	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*

Lab Sample ID: LCSD 160-484018/4
Matrix: Water
Analysis Batch: 484018

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	11.4		ug/L		114	70 - 130	4	20
1,1,1-Trichloroethane	10.0	12.7		ug/L		127	70 - 130	5	20
1,1,2,2-Tetrachloroethane	10.0	9.03		ug/L		90	70 - 130	3	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-484018/4
Matrix: Water
Analysis Batch: 484018

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2-Trichloroethane			10.0	8.76		ug/L		88	70 - 130	1	20
1,1-Dichloroethane			10.0	11.5		ug/L		115	70 - 130	2	20
1,1-Dichloroethene			10.0	12.9		ug/L		129	70 - 130	0	20
1,1-Dichloropropene			10.0	11.1		ug/L		111	70 - 130	1	20
1,2,3-Trichlorobenzene			10.0	10.9		ug/L		109	70 - 130	8	20
1,2,3-Trichloropropane			10.0	9.29		ug/L		93	70 - 130	2	20
1,2,4-Trichlorobenzene			10.0	11.1		ug/L		111	70 - 130	8	20
1,2,4-Trimethylbenzene			10.0	11.2		ug/L		112	70 - 130	2	20
1,2-Dibromoethane			10.0	9.33		ug/L		93	70 - 130	2	20
1,2-Dichlorobenzene			10.0	10.0		ug/L		100	70 - 130	6	20
1,2-Dichloroethane			10.0	9.05		ug/L		91	70 - 130	1	20
1,2-Dichloropropane			10.0	9.31		ug/L		93	70 - 130	3	20
1,3,5-Trimethylbenzene			10.0	11.2		ug/L		112	70 - 130	4	20
1,3-Dichlorobenzene			10.0	10.2		ug/L		102	70 - 130	6	20
1,3-Dichloropropane			10.0	8.59		ug/L		86	70 - 130	2	20
1,4-Dichlorobenzene			10.0	9.99		ug/L		100	70 - 130	5	20
2,2-Dichloropropane			10.0	13.6		ug/L		136	70 - 130	5	20
2-Chlorotoluene			10.0	10.3		ug/L		103	70 - 130	4	20
4-Chlorotoluene			10.0	10.1		ug/L		101	70 - 130	2	20
4-Isopropyltoluene			10.0	11.8		ug/L		118	70 - 130	3	20
Benzene			10.0	10.2		ug/L		102	70 - 130	2	20
Bromobenzene			10.0	9.02		ug/L		90	70 - 130	2	20
Bromochloromethane			10.0	11.4		ug/L		114	70 - 130	7	20
Bromodichloromethane			10.0	9.51		ug/L		95	70 - 130	3	20
Bromoform			10.0	9.21		ug/L		92	70 - 130	2	20
Bromomethane			10.0	13.7		ug/L		137	70 - 130	4	20
Carbon tetrachloride			10.0	12.8		ug/L		128	70 - 130	7	20
Chlorobenzene			10.0	9.76		ug/L		98	70 - 130	2	20
Chloroethane			10.0	13.7		ug/L		137	70 - 130	6	20
Chloroform			10.0	11.1		ug/L		111	70 - 130	6	20
Chloromethane			10.0	13.3		ug/L		133	70 - 130	4	20
cis-1,2-Dichloroethene			10.0	11.6		ug/L		116	70 - 130	2	20
cis-1,3-Dichloropropene			10.0	8.31		ug/L		83	70 - 130	4	20
Dibromochloromethane			10.0	9.55		ug/L		95	70 - 130	3	20
Dibromomethane			10.0	9.13		ug/L		91	70 - 130	1	20
Dichlorodifluoromethane			10.0	12.2		ug/L		122	70 - 130	16	20
Ethylbenzene			10.0	11.2		ug/L		112	70 - 130	3	20
Hexachlorobutadiene			10.0	11.4		ug/L		114	70 - 130	4	20
Isopropylbenzene			10.0	10.9		ug/L		109	70 - 130	2	20
Methylene Chloride			10.0	11.7		ug/L		117	70 - 130	5	20
Methyl-t-Butyl Ether (MTBE)			10.0	13.1		ug/L		131	70 - 130	8	20
m-Xylene & p-Xylene			10.0	11.9		ug/L		119	70 - 130	4	20
Naphthalene			10.0	11.3		ug/L		113	70 - 130	12	20
n-Butylbenzene			10.0	10.7		ug/L		107	70 - 130	5	20
N-Propylbenzene			10.0	10.4		ug/L		104	70 - 130	2	20
o-Xylene			10.0	12.8		ug/L		128	70 - 130	5	20
sec-Butylbenzene			10.0	11.3		ug/L		113	70 - 130	3	20
Styrene			10.0	11.7		ug/L		117	70 - 130	2	20
tert-Butylbenzene			10.0	10.4		ug/L		104	70 - 130	1	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-484018/4
Matrix: Water
Analysis Batch: 484018

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tetrachloroethene			10.0	9.86		ug/L		99	70 - 130	0	20
Toluene			10.0	9.40		ug/L		94	70 - 130	1	20
trans-1,2-Dichloroethene			10.0	12.4		ug/L		124	70 - 130	3	20
trans-1,3-Dichloropropene			10.0	8.44		ug/L		84	70 - 130	6	20
Trichloroethene			10.0	9.61		ug/L		96	70 - 130	2	20
Trichlorofluoromethane			10.0	13.8		ug/L		138	70 - 130	4	20
Vinyl chloride			10.0	13.0		ug/L		130	70 - 130	1	20
Xylenes, Total			20.0	24.7		ug/L		124	70 - 130	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*

Lab Sample ID: 160-39441-C-1 MS
Matrix: Water
Analysis Batch: 484018

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.5	U D	50.0	50.8	D	ug/L		102	73 - 123
1,1,1-Trichloroethane	2.5	U D	50.0	51.7	D	ug/L		103	76 - 122
1,1,2,2-Tetrachloroethane	2.5	U D	50.0	54.1	D	ug/L		108	77 - 118
1,1,2-Trichloroethane	2.5	U D	50.0	52.4	D	ug/L		105	79 - 116
1,1-Dichloroethane	2.5	U D	50.0	52.4	D	ug/L		105	81 - 120
1,1-Dichloroethene	2.5	U D	50.0	54.5	D	ug/L		109	68 - 116
1,1-Dichloropropene	2.5	U D	50.0	50.9	D	ug/L		102	74 - 124
1,2,3-Trichlorobenzene	3.0	U D	50.0	50.5	D	ug/L		101	57 - 128
1,2,3-Trichloropropane	2.5	U D	50.0	57.2	D	ug/L		114	72 - 122
1,2,4-Trichlorobenzene	2.8	U D	50.0	47.5	D	ug/L		95	54 - 150
1,2,4-Trimethylbenzene	2.5	U D	50.0	49.9	D	ug/L		100	70 - 125
1,2-Dibromoethane	2.5	U D	50.0	52.4	D	ug/L		105	76 - 118
1,2-Dichlorobenzene	2.5	U D	50.0	48.4	D	ug/L		97	76 - 120
1,2-Dichloroethane	2.5	U D	50.0	50.4	D	ug/L		101	78 - 123
1,2-Dichloropropane	2.5	U D	50.0	50.0	D	ug/L		100	80 - 119
1,3,5-Trimethylbenzene	2.5	U D	50.0	49.1	D	ug/L		98	76 - 126
1,3-Dichlorobenzene	2.5	U D	50.0	46.4	D	ug/L		93	76 - 120
1,3-Dichloropropane	2.5	U D	50.0	51.1	D	ug/L		102	79 - 116
1,4-Dichlorobenzene	2.5	U D	50.0	47.2	D	ug/L		94	75 - 117
2,2-Dichloropropane	2.5	U D	50.0	50.6	D	ug/L		101	76 - 120
2-Chlorotoluene	2.5	U D	50.0	48.6	D	ug/L		97	79 - 125
4-Chlorotoluene	2.5	U D	50.0	48.0	D	ug/L		96	76 - 136
4-Isopropyltoluene	2.5	U D	50.0	47.5	D	ug/L		95	78 - 132
Benzene	2.5	U D	50.0	50.1	D	ug/L		100	77 - 124
Bromobenzene	2.5	U D	50.0	49.4	D	ug/L		99	77 - 115
Bromochloromethane	2.5	U D	50.0	54.2	D	ug/L		108	73 - 118
Bromodichloromethane	2.5	U D	50.0	51.1	D	ug/L		102	73 - 118
Bromoform	2.5	U D	50.0	56.8	D	ug/L		114	70 - 118
Bromomethane	2.9	U D	50.0	55.6	D	ug/L		111	46 - 147
Carbon tetrachloride	2.5	U D	50.0	51.1	D	ug/L		102	70 - 128

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-39441-C-1 MS
Matrix: Water
Analysis Batch: 484018

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorobenzene	2.5	U D	50.0	47.4	D	ug/L		95	76 - 124
Chloroethane	2.5	U D	50.0	59.8	D	ug/L		120	66 - 129
Chloroform	2.5	U D	50.0	52.3	D	ug/L		105	77 - 122
Chloromethane	2.5	U D	50.0	56.1	D	ug/L		112	68 - 132
cis-1,2-Dichloroethene	2.5	U D	50.0	51.9	D	ug/L		104	71 - 117
cis-1,3-Dichloropropene	2.5	U D	50.0	46.5	D	ug/L		93	76 - 128
Dibromochloromethane	2.5	U D	50.0	53.2	D	ug/L		106	73 - 114
Dibromomethane	2.5	U D	50.0	50.2	D	ug/L		100	77 - 118
Dichlorodifluoromethane	3.3	U D	50.0	46.9	D	ug/L		94	61 - 134
Ethylbenzene	2.5	U D	50.0	46.4	D	ug/L		93	80 - 122
Hexachlorobutadiene	2.5	U D	50.0	42.3	D	ug/L		85	57 - 144
Isopropylbenzene	2.5	U D	50.0	49.1	D	ug/L		98	85 - 148
Methylene Chloride	56	D	50.0	97.4	D	ug/L		82	65 - 131
Methyl-t-Butyl Ether (MTBE)	2.5	U D	50.0	54.0	D	ug/L		108	75 - 122
m-Xylene & p-Xylene	5.0	U D	50.0	47.5	D	ug/L		95	70 - 130
Naphthalene	3.4	U D	50.0	54.9	D	ug/L		110	56 - 143
n-Butylbenzene	2.5	U D	50.0	40.0	D	ug/L		80	74 - 128
N-Propylbenzene	2.5	U D	50.0	45.4	D	ug/L		91	80 - 132
o-Xylene	2.5	U D	50.0	49.6	D	ug/L		99	70 - 130
sec-Butylbenzene	2.5	U D	50.0	46.8	D	ug/L		94	78 - 128
Styrene	2.5	U D	50.0	50.4	D	ug/L		101	68 - 125
tert-Butylbenzene	2.5	U D	50.0	48.5	D	ug/L		97	75 - 131
Tetrachloroethene	2.5	U D	50.0	44.8	D	ug/L		90	71 - 124
Toluene	2.5	U D	50.0	47.8	D	ug/L		96	76 - 127
trans-1,2-Dichloroethene	2.5	U D	50.0	51.6	D	ug/L		103	72 - 117
trans-1,3-Dichloropropene	2.5	U D	50.0	52.7	D	ug/L		105	85 - 135
Trichloroethene	2.5	U D	50.0	47.2	D	ug/L		94	71 - 118
Trichlorofluoromethane	2.5	U D	50.0	57.0	D	ug/L		114	56 - 127
Vinyl chloride	2.5	U D	50.0	52.9	D	ug/L		106	58 - 114
Xylenes, Total	15	U D	100	97.1		ug/L		97	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 160-39441-C-1 MSD
Matrix: Water
Analysis Batch: 484018

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.5	U D	50.0	51.2	D	ug/L		102	73 - 123	1	20
1,1,1-Trichloroethane	2.5	U D	50.0	51.3	D	ug/L		103	76 - 122	1	20
1,1,2,2-Tetrachloroethane	2.5	U D	50.0	53.2	D	ug/L		106	77 - 118	2	20
1,1,2-Trichloroethane	2.5	U D	50.0	52.1	D	ug/L		104	79 - 116	1	20
1,1-Dichloroethane	2.5	U D	50.0	51.6	D	ug/L		103	81 - 120	1	20
1,1-Dichloroethene	2.5	U D	50.0	53.3	D	ug/L		107	68 - 116	2	20
1,1-Dichloropropene	2.5	U D	50.0	51.8	D	ug/L		104	74 - 124	2	20
1,2,3-Trichlorobenzene	3.0	U D	50.0	51.6	D	ug/L		103	57 - 128	2	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-39441-C-1 MSD
Matrix: Water
Analysis Batch: 484018

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3-Trichloropropane	2.5	U D	50.0	57.5	D	ug/L		115	72 - 122	0	20
1,2,4-Trichlorobenzene	2.8	U D	50.0	50.8	D	ug/L		102	54 - 150	7	20
1,2,4-Trimethylbenzene	2.5	U D	50.0	53.8	D	ug/L		108	70 - 125	7	20
1,2-Dibromoethane	2.5	U D	50.0	51.7	D	ug/L		103	76 - 118	1	20
1,2-Dichlorobenzene	2.5	U D	50.0	49.0	D	ug/L		98	76 - 120	1	20
1,2-Dichloroethane	2.5	U D	50.0	50.2	D	ug/L		100	78 - 123	0	20
1,2-Dichloropropane	2.5	U D	50.0	49.8	D	ug/L		100	80 - 119	0	20
1,3,5-Trimethylbenzene	2.5	U D	50.0	53.9	D	ug/L		108	76 - 126	9	20
1,3-Dichlorobenzene	2.5	U D	50.0	48.9	D	ug/L		98	76 - 120	5	20
1,3-Dichloropropane	2.5	U D	50.0	52.0	D	ug/L		104	79 - 116	2	20
1,4-Dichlorobenzene	2.5	U D	50.0	48.9	D	ug/L		98	75 - 117	3	20
2,2-Dichloropropane	2.5	U D	50.0	50.3	D	ug/L		101	76 - 120	1	20
2-Chlorotoluene	2.5	U D	50.0	51.4	D	ug/L		103	79 - 125	6	20
4-Chlorotoluene	2.5	U D	50.0	51.7	D	ug/L		103	76 - 136	7	20
4-Isopropyltoluene	2.5	U D	50.0	53.3	D	ug/L		107	78 - 132	11	20
Benzene	2.5	U D	50.0	50.2	D	ug/L		100	77 - 124	0	20
Bromobenzene	2.5	U D	50.0	49.4	D	ug/L		99	77 - 115	0	20
Bromochloromethane	2.5	U D	50.0	53.0	D	ug/L		106	73 - 118	2	20
Bromodichloromethane	2.5	U D	50.0	50.4	D	ug/L		101	73 - 118	2	20
Bromoform	2.5	U D	50.0	54.5	D	ug/L		109	70 - 118	4	20
Bromomethane	2.9	U D	50.0	56.3	D	ug/L		113	46 - 147	1	20
Carbon tetrachloride	2.5	U D	50.0	50.9	D	ug/L		102	70 - 128	0	20
Chlorobenzene	2.5	U D	50.0	48.9	D	ug/L		98	76 - 124	3	20
Chloroethane	2.5	U D	50.0	58.1	D	ug/L		116	66 - 129	3	20
Chloroform	2.5	U D	50.0	51.1	D	ug/L		102	77 - 122	2	20
Chloromethane	2.5	U D	50.0	56.0	D	ug/L		112	68 - 132	0	20
cis-1,2-Dichloroethene	2.5	U D	50.0	50.9	D	ug/L		102	71 - 117	2	20
cis-1,3-Dichloropropene	2.5	U D	50.0	48.2	D	ug/L		96	76 - 128	4	20
Dibromochloromethane	2.5	U D	50.0	53.0	D	ug/L		106	73 - 114	0	20
Dibromomethane	2.5	U D	50.0	49.3	D	ug/L		99	77 - 118	2	20
Dichlorodifluoromethane	3.3	U D	50.0	45.0	D	ug/L		90	61 - 134	4	20
Ethylbenzene	2.5	U D	50.0	50.0	D	ug/L		100	80 - 122	7	20
Hexachlorobutadiene	2.5	U D	50.0	48.9	D	ug/L		98	57 - 144	15	20
Isopropylbenzene	2.5	U D	50.0	53.7	D	ug/L		107	85 - 148	9	20
Methylene Chloride	56	D	50.0	95.1	D	ug/L		78	65 - 131	2	20
Methyl-t-Butyl Ether (MTBE)	2.5	U D	50.0	53.6	D	ug/L		107	75 - 122	1	20
m-Xylene & p-Xylene	5.0	U D	50.0	51.3	D	ug/L		103	70 - 130	8	20
Naphthalene	3.4	U D	50.0	55.4	D	ug/L		111	56 - 143	1	20
n-Butylbenzene	2.5	U D	50.0	45.9	D	ug/L		92	74 - 128	14	20
N-Propylbenzene	2.5	U D	50.0	51.0	D	ug/L		102	80 - 132	12	20
o-Xylene	2.5	U D	50.0	53.1	D	ug/L		106	70 - 130	7	20
sec-Butylbenzene	2.5	U D	50.0	52.9	D	ug/L		106	78 - 128	12	20
Styrene	2.5	U D	50.0	53.3	D	ug/L		107	68 - 125	5	20
tert-Butylbenzene	2.5	U D	50.0	53.1	D	ug/L		106	75 - 131	9	20
Tetrachloroethene	2.5	U D	50.0	48.2	D	ug/L		96	71 - 124	7	20
Toluene	2.5	U D	50.0	50.0	D	ug/L		100	76 - 127	4	20
trans-1,2-Dichloroethene	2.5	U D	50.0	51.7	D	ug/L		103	72 - 117	0	20
trans-1,3-Dichloropropene	2.5	U D	50.0	53.9	D	ug/L		108	85 - 135	2	20
Trichloroethene	2.5	U D	50.0	47.6	D	ug/L		95	71 - 118	1	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-39441-C-1 MSD
Matrix: Water
Analysis Batch: 484018

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichlorofluoromethane	2.5	U D	50.0	58.1	D	ug/L		116	56 - 127	2	20
Vinyl chloride	2.5	U D	50.0	54.1	D	ug/L		108	58 - 114	2	20
Xylenes, Total	15	U D	100	104		ug/L		104	78 - 128	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: MB 160-484019/6
Matrix: Water
Analysis Batch: 484019

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			09/29/20 02:56	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/29/20 02:56	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			09/29/20 02:56	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/29/20 02:56	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			09/29/20 02:56	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			09/29/20 02:56	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			09/29/20 02:56	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			09/29/20 02:56	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			09/29/20 02:56	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/29/20 02:56	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			09/29/20 02:56	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			09/29/20 02:56	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			09/29/20 02:56	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			09/29/20 02:56	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			09/29/20 02:56	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			09/29/20 02:56	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			09/29/20 02:56	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			09/29/20 02:56	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			09/29/20 02:56	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			09/29/20 02:56	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			09/29/20 02:56	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			09/29/20 02:56	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/29/20 02:56	1
Benzene	0.50	U	0.50	0.26	ug/L			09/29/20 02:56	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			09/29/20 02:56	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			09/29/20 02:56	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			09/29/20 02:56	1
Bromoform	0.50	U	0.50	0.32	ug/L			09/29/20 02:56	1
Bromomethane	0.57	U	0.57	0.57	ug/L			09/29/20 02:56	1
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			09/29/20 02:56	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			09/29/20 02:56	1
Chloroethane	0.50	U	0.50	0.32	ug/L			09/29/20 02:56	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/29/20 02:56	1
Chloromethane	0.50	U	0.50	0.32	ug/L			09/29/20 02:56	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			09/29/20 02:56	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-484019/6
Matrix: Water
Analysis Batch: 484019

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			09/29/20 02:56	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/29/20 02:56	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			09/29/20 02:56	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			09/29/20 02:56	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			09/29/20 02:56	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			09/29/20 02:56	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			09/29/20 02:56	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/29/20 02:56	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			09/29/20 02:56	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			09/29/20 02:56	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/29/20 02:56	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/29/20 02:56	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			09/29/20 02:56	1
o-Xylene	0.50	U	0.50	0.43	ug/L			09/29/20 02:56	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/29/20 02:56	1
Styrene	0.50	U	0.50	0.35	ug/L			09/29/20 02:56	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/29/20 02:56	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			09/29/20 02:56	1
Toluene	0.50	U	0.50	0.24	ug/L			09/29/20 02:56	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			09/29/20 02:56	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/29/20 02:56	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			09/29/20 02:56	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			09/29/20 02:56	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/29/20 02:56	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			09/29/20 02:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*09/29/20 02:56*	*1*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*09/29/20 02:56*	*1*

Lab Sample ID: LCS 160-484019/3
Matrix: Water
Analysis Batch: 484019

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	10.0	10.9		ug/L		109	70 - 130
1,1,1-Trichloroethane	10.0	10.2		ug/L		102	70 - 130
1,1,2,2-Tetrachloroethane	10.0	13.1		ug/L		131	70 - 130
1,1,2-Trichloroethane	10.0	12.4		ug/L		124	70 - 130
1,1-Dichloroethane	10.0	11.2		ug/L		112	70 - 130
1,1-Dichloroethene	10.0	10.9		ug/L		109	70 - 130
1,1-Dichloropropene	10.0	9.00		ug/L		90	70 - 130
1,2,3-Trichlorobenzene	10.0	10.3		ug/L		103	70 - 130
1,2,3-Trichloropropane	10.0	14.6		ug/L		146	70 - 130
1,2,4-Trichlorobenzene	10.0	9.21		ug/L		92	70 - 130
1,2,4-Trimethylbenzene	10.0	9.32		ug/L		93	70 - 130
1,2-Dibromoethane	10.0	12.4		ug/L		124	70 - 130
1,2-Dichlorobenzene	10.0	10.1		ug/L		101	70 - 130

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39488-1
SDG: 42353

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-484019/3
Matrix: Water
Analysis Batch: 484019

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloroethane	10.0	11.4		ug/L		114	70 - 130
1,2-Dichloropropane	10.0	10.9		ug/L		109	70 - 130
1,3,5-Trimethylbenzene	10.0	8.95		ug/L		90	70 - 130
1,3-Dichlorobenzene	10.0	9.29		ug/L		93	70 - 130
1,3-Dichloropropane	10.0	12.4		ug/L		124	70 - 130
1,4-Dichlorobenzene	10.0	9.46		ug/L		95	70 - 130
2,2-Dichloropropane	10.0	9.14		ug/L		91	70 - 130
2-Chlorotoluene	10.0	9.46		ug/L		95	70 - 130
4-Chlorotoluene	10.0	9.37		ug/L		94	70 - 130
4-Isopropyltoluene	10.0	7.97		ug/L		80	70 - 130
Benzene	10.0	10.4		ug/L		104	70 - 130
Bromobenzene	10.0	10.6		ug/L		106	70 - 130
Bromochloromethane	10.0	11.8		ug/L		118	70 - 130
Bromodichloromethane	10.0	11.1		ug/L		111	70 - 130
Bromoform	10.0	14.1		ug/L		141	70 - 130
Bromomethane	10.0	13.3		ug/L		133	70 - 130
Carbon tetrachloride	10.0	9.23		ug/L		92	70 - 130
Chlorobenzene	10.0	9.46		ug/L		95	70 - 130
Chloroethane	10.0	12.8		ug/L		128	70 - 130
Chloroform	10.0	11.0		ug/L		110	70 - 130
Chloromethane	10.0	13.2		ug/L		132	70 - 130
cis-1,2-Dichloroethene	10.0	10.9		ug/L		109	70 - 130
cis-1,3-Dichloropropene	10.0	10.1		ug/L		101	70 - 130
Dibromochloromethane	10.0	12.3		ug/L		123	70 - 130
Dibromomethane	10.0	11.1		ug/L		111	70 - 130
Dichlorodifluoromethane	10.0	10.7		ug/L		107	70 - 130
Ethylbenzene	10.0	8.23		ug/L		82	70 - 130
Isopropylbenzene	10.0	8.75		ug/L		87	70 - 130
Methylene Chloride	10.0	11.0		ug/L		110	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	12.1		ug/L		121	70 - 130
m-Xylene & p-Xylene	10.0	8.36		ug/L		84	70 - 130
Naphthalene	10.0	12.5		ug/L		125	70 - 130
N-Propylbenzene	10.0	7.87		ug/L		79	70 - 130
o-Xylene	10.0	9.12		ug/L		91	70 - 130
sec-Butylbenzene	10.0	7.65		ug/L		77	70 - 130
Styrene	10.0	9.74		ug/L		97	70 - 130
tert-Butylbenzene	10.0	8.38		ug/L		84	70 - 130
Tetrachloroethene	10.0	7.63		ug/L		76	70 - 130
Toluene	10.0	9.70		ug/L		97	70 - 130
trans-1,2-Dichloroethene	10.0	10.1		ug/L		101	70 - 130
trans-1,3-Dichloropropene	10.0	11.9		ug/L		119	70 - 130
Trichloroethene	10.0	9.37		ug/L		94	70 - 130
Trichlorofluoromethane	10.0	12.7		ug/L		127	70 - 130
Vinyl chloride	10.0	13.0		ug/L		130	70 - 130
Xylenes, Total	20.0	17.5		ug/L		87	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-484019/3
Matrix: Water
Analysis Batch: 484019

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130

Lab Sample ID: LCSD 160-484019/4
Matrix: Water
Analysis Batch: 484019

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			10.0	11.5		ug/L		115	70 - 130	5	20
1,1,1-Trichloroethane			10.0	11.0		ug/L		110	70 - 130	7	20
1,1,2,2-Tetrachloroethane			10.0	13.4		ug/L		134	70 - 130	2	20
1,1,2-Trichloroethane			10.0	13.2		ug/L		132	70 - 130	6	20
1,1-Dichloroethane			10.0	12.1		ug/L		121	70 - 130	7	20
1,1-Dichloroethene			10.0	11.8		ug/L		118	70 - 130	7	20
1,1-Dichloropropene			10.0	9.65		ug/L		96	70 - 130	7	20
1,2,3-Trichlorobenzene			10.0	11.5		ug/L		115	70 - 130	11	20
1,2,3-Trichloropropane			10.0	15.3		ug/L		153	70 - 130	5	20
1,2,4-Trichlorobenzene			10.0	10.2		ug/L		102	70 - 130	10	20
1,2,4-Trimethylbenzene			10.0	10.0		ug/L		100	70 - 130	7	20
1,2-Dibromoethane			10.0	13.2		ug/L		132	70 - 130	6	20
1,2-Dichlorobenzene			10.0	10.4		ug/L		104	70 - 130	3	20
1,2-Dichloroethane			10.0	11.6		ug/L		116	70 - 130	1	20
1,2-Dichloropropane			10.0	11.0		ug/L		110	70 - 130	1	20
1,3,5-Trimethylbenzene			10.0	9.67		ug/L		97	70 - 130	8	20
1,3-Dichlorobenzene			10.0	9.71		ug/L		97	70 - 130	4	20
1,3-Dichloropropane			10.0	12.7		ug/L		127	70 - 130	2	20
1,4-Dichlorobenzene			10.0	9.78		ug/L		98	70 - 130	3	20
2,2-Dichloropropane			10.0	9.85		ug/L		99	70 - 130	7	20
2-Chlorotoluene			10.0	9.86		ug/L		99	70 - 130	4	20
4-Chlorotoluene			10.0	9.66		ug/L		97	70 - 130	3	20
4-Isopropyltoluene			10.0	9.15		ug/L		91	70 - 130	14	20
Benzene			10.0	10.6		ug/L		106	70 - 130	2	20
Bromobenzene			10.0	10.8		ug/L		108	70 - 130	1	20
Bromochloromethane			10.0	12.4		ug/L		124	70 - 130	5	20
Bromodichloromethane			10.0	11.3		ug/L		113	70 - 130	2	20
Bromoform			10.0	14.4		ug/L		144	70 - 130	2	20
Bromomethane			10.0	14.2		ug/L		142	70 - 130	6	20
Carbon tetrachloride			10.0	10.0		ug/L		100	70 - 130	8	20
Chlorobenzene			10.0	9.66		ug/L		97	70 - 130	2	20
Chloroethane			10.0	14.7		ug/L		147	70 - 130	13	20
Chloroform			10.0	11.5		ug/L		115	70 - 130	4	20
Chloromethane			10.0	14.2		ug/L		142	70 - 130	7	20
cis-1,2-Dichloroethene			10.0	11.3		ug/L		113	70 - 130	4	20
cis-1,3-Dichloropropene			10.0	10.0		ug/L		100	70 - 130	1	20
Dibromochloromethane			10.0	12.7		ug/L		127	70 - 130	3	20
Dibromomethane			10.0	11.6		ug/L		116	70 - 130	4	20
Dichlorodifluoromethane			10.0	10.8		ug/L		108	70 - 130	1	20
Ethylbenzene			10.0	8.86		ug/L		89	70 - 130	7	20
Isopropylbenzene			10.0	9.53		ug/L		95	70 - 130	9	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-484019/4
Matrix: Water
Analysis Batch: 484019

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Chloride			10.0	12.2		ug/L		122	70 - 130	10	20
Methyl-t-Butyl Ether (MTBE)			10.0	13.6		ug/L		136	70 - 130	12	20
m-Xylene & p-Xylene			10.0	8.99		ug/L		90	70 - 130	7	20
Naphthalene			10.0	13.5		ug/L		135	70 - 130	8	20
N-Propylbenzene			10.0	8.83		ug/L		88	70 - 130	12	20
o-Xylene			10.0	9.96		ug/L		100	70 - 130	9	20
sec-Butylbenzene			10.0	8.88		ug/L		89	70 - 130	15	20
Styrene			10.0	10.1		ug/L		101	70 - 130	4	20
tert-Butylbenzene			10.0	9.17		ug/L		92	70 - 130	9	20
Tetrachloroethene			10.0	8.53		ug/L		85	70 - 130	11	20
Toluene			10.0	9.81		ug/L		98	70 - 130	1	20
trans-1,2-Dichloroethene			10.0	10.7		ug/L		107	70 - 130	6	20
trans-1,3-Dichloropropene			10.0	12.3		ug/L		123	70 - 130	3	20
Trichloroethene			10.0	9.47		ug/L		95	70 - 130	1	20
Trichlorofluoromethane			10.0	14.1		ug/L		141	70 - 130	10	20
Vinyl chloride			10.0	13.7		ug/L		137	70 - 130	6	20
Xylenes, Total			20.0	19.0		ug/L		95	70 - 130	8	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 160-39521-A-9 MS
Matrix: Water
Analysis Batch: 484019

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.50	U	10.0	10.4		ug/L		104	73 - 123
1,1,1-Trichloroethane	0.86		10.0	10.9		ug/L		101	76 - 122
1,1,2,2-Tetrachloroethane	0.50	U	10.0	13.0		ug/L		130	77 - 118
1,1,2-Trichloroethane	0.50	U	10.0	11.6		ug/L		116	79 - 116
1,1-Dichloroethane	0.50	U	10.0	11.1		ug/L		111	81 - 120
1,1-Dichloroethene	0.83		10.0	10.7		ug/L		99	68 - 116
1,1-Dichloropropene	0.50	U	10.0	9.64		ug/L		96	74 - 124
1,2,3-Trichlorobenzene	0.59	U	10.0	9.87		ug/L		99	57 - 128
1,2,3-Trichloropropane	0.50	U	10.0	13.7		ug/L		137	72 - 122
1,2,4-Trichlorobenzene	0.55	U	10.0	9.09		ug/L		91	54 - 150
1,2,4-Trimethylbenzene	0.50	U	10.0	9.93		ug/L		99	70 - 125
1,2-Dibromoethane	0.50	U	10.0	10.8		ug/L		108	76 - 118
1,2-Dichlorobenzene	0.50	U	10.0	10.1		ug/L		101	76 - 120
1,2-Dichloroethane	0.50	U	10.0	10.9		ug/L		109	78 - 123
1,2-Dichloropropane	0.50	U	10.0	10.8		ug/L		108	80 - 119
1,3,5-Trimethylbenzene	0.50	U	10.0	9.73		ug/L		97	76 - 126
1,3-Dichlorobenzene	0.50	U	10.0	9.44		ug/L		94	76 - 120
1,3-Dichloropropane	0.50	U	10.0	11.2		ug/L		112	79 - 116
1,4-Dichlorobenzene	0.50	U	10.0	9.63		ug/L		96	75 - 117
2,2-Dichloropropane	0.50	U	10.0	7.98		ug/L		80	76 - 120
2-Chlorotoluene	0.50	U	10.0	10.1		ug/L		101	79 - 125

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-39521-A-9 MS
Matrix: Water
Analysis Batch: 484019

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chlorotoluene	0.50	U	10.0	9.84		ug/L		98	76 - 136
4-Isopropyltoluene	0.50	U	10.0	8.70		ug/L		87	78 - 132
Benzene	0.50	U	10.0	10.4		ug/L		104	77 - 124
Bromobenzene	0.50	U	10.0	10.8		ug/L		108	77 - 115
Bromochloromethane	0.50	U	10.0	11.0		ug/L		110	73 - 118
Bromodichloromethane	0.50	U	10.0	11.1		ug/L		111	73 - 118
Bromoform	0.50	U	10.0	13.3		ug/L		133	70 - 118
Bromomethane	0.57	U	10.0	11.5		ug/L		115	46 - 147
Carbon tetrachloride	42	E	10.0	50.4	E	ug/L		88	70 - 128
Chlorobenzene	0.50	U	10.0	9.48		ug/L		95	76 - 124
Chloroethane	0.50	U	10.0	12.5		ug/L		125	66 - 129
Chloroform	1.4		10.0	11.7		ug/L		103	77 - 122
Chloromethane	0.50	U	10.0	11.6		ug/L		116	68 - 132
cis-1,2-Dichloroethene	0.50	U	10.0	10.5		ug/L		105	71 - 117
cis-1,3-Dichloropropene	0.50	U	10.0	9.38		ug/L		94	76 - 128
Dibromochloromethane	0.50	U	10.0	11.2		ug/L		112	73 - 114
Dibromomethane	0.50	U	10.0	10.5		ug/L		105	77 - 118
Dichlorodifluoromethane	0.66	U	10.0	8.37		ug/L		84	61 - 134
Ethylbenzene	0.50	U	10.0	8.71		ug/L		87	80 - 122
Isopropylbenzene	0.50	U	10.0	9.75		ug/L		98	85 - 148
Methylene Chloride	0.50	U	10.0	10.7		ug/L		107	65 - 131
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	10.9		ug/L		109	75 - 122
m-Xylene & p-Xylene	1.0	U	10.0	8.54		ug/L		85	70 - 130
Naphthalene	0.67	U	10.0	10.9		ug/L		109	56 - 143
N-Propylbenzene	0.50	U	10.0	8.73		ug/L		87	80 - 132
o-Xylene	0.50	U	10.0	9.36		ug/L		94	70 - 130
sec-Butylbenzene	0.50	U	10.0	8.68		ug/L		87	78 - 128
Styrene	0.50	U	10.0	9.75		ug/L		98	68 - 125
tert-Butylbenzene	0.50	U	10.0	9.28		ug/L		93	75 - 131
Tetrachloroethene	230	E	10.0	240	E	ug/L		88	71 - 124
Toluene	0.50	U	10.0	9.55		ug/L		95	76 - 127
trans-1,2-Dichloroethene	0.50	U	10.0	9.73		ug/L		97	72 - 117
trans-1,3-Dichloropropene	0.50	U	10.0	11.7		ug/L		117	85 - 135
Trichloroethene	4.0		10.0	13.5		ug/L		95	71 - 118
Trichlorofluoromethane	0.50	U	10.0	11.8		ug/L		118	56 - 127
Vinyl chloride	0.50	U	10.0	11.2		ug/L		112	58 - 114
Xylenes, Total	3.0	U	20.0	17.9		ug/L		90	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: 160-39521-A-9 MSD
Matrix: Water
Analysis Batch: 484019

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.50	U	10.0	13.1		ug/L		131	73 - 123	22	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-39521-A-9 MSD
Matrix: Water
Analysis Batch: 484019

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.86		10.0	12.5		ug/L		116	76 - 122	13	20
1,1,2,2-Tetrachloroethane	0.50	U	10.0	17.7		ug/L		177	77 - 118	30	20
1,1,2-Trichloroethane	0.50	U	10.0	14.9		ug/L		149	79 - 116	25	20
1,1-Dichloroethane	0.50	U	10.0	13.0		ug/L		130	81 - 120	16	20
1,1-Dichloroethene	0.83		10.0	13.4		ug/L		125	68 - 116	22	20
1,1-Dichloropropene	0.50	U	10.0	10.0		ug/L		100	74 - 124	4	20
1,2,3-Trichlorobenzene	0.59	U	10.0	13.1		ug/L		131	57 - 128	28	20
1,2,3-Trichloropropane	0.50	U	10.0	18.3		ug/L		183	72 - 122	29	20
1,2,4-Trichlorobenzene	0.55	U	10.0	12.3		ug/L		123	54 - 150	30	20
1,2,4-Trimethylbenzene	0.50	U	10.0	12.6		ug/L		126	70 - 125	24	20
1,2-Dibromoethane	0.50	U	10.0	14.3		ug/L		143	76 - 118	28	20
1,2-Dichlorobenzene	0.50	U	10.0	12.4		ug/L		124	76 - 120	20	20
1,2-Dichloroethane	0.50	U	10.0	12.9		ug/L		129	78 - 123	17	20
1,2-Dichloropropane	0.50	U	10.0	12.2		ug/L		122	80 - 119	12	20
1,3,5-Trimethylbenzene	0.50	U	10.0	12.2		ug/L		122	76 - 126	22	20
1,3-Dichlorobenzene	0.50	U	10.0	11.9		ug/L		119	76 - 120	23	20
1,3-Dichloropropane	0.50	U	10.0	14.9		ug/L		149	79 - 116	29	20
1,4-Dichlorobenzene	0.50	U	10.0	11.9		ug/L		119	75 - 117	21	20
2,2-Dichloropropane	0.50	U	10.0	9.48		ug/L		95	76 - 120	17	20
2-Chlorotoluene	0.50	U	10.0	12.3		ug/L		123	79 - 125	20	20
4-Chlorotoluene	0.50	U	10.0	12.2		ug/L		122	76 - 136	22	20
4-Isopropyltoluene	0.50	U	10.0	11.6		ug/L		116	78 - 132	29	20
Benzene	0.50	U	10.0	11.6		ug/L		116	77 - 124	11	20
Bromobenzene	0.50	U	10.0	13.2		ug/L		132	77 - 115	20	20
Bromochloromethane	0.50	U	10.0	13.5		ug/L		135	73 - 118	20	20
Bromodichloromethane	0.50	U	10.0	12.7		ug/L		127	73 - 118	13	20
Bromoform	0.50	U	10.0	17.5		ug/L		175	70 - 118	28	20
Bromomethane	0.57	U	10.0	14.3		ug/L		143	46 - 147	22	20
Carbon tetrachloride	42	E	10.0	58.5	E	ug/L		169	70 - 128	15	20
Chlorobenzene	0.50	U	10.0	11.4		ug/L		114	76 - 124	18	20
Chloroethane	0.50	U	10.0	15.1		ug/L		151	66 - 129	19	20
Chloroform	1.4		10.0	14.0		ug/L		127	77 - 122	18	20
Chloromethane	0.50	U	10.0	14.5		ug/L		145	68 - 132	22	20
cis-1,2-Dichloroethene	0.50	U	10.0	12.2		ug/L		122	71 - 117	15	20
cis-1,3-Dichloropropene	0.50	U	10.0	10.4		ug/L		104	76 - 128	10	20
Dibromochloromethane	0.50	U	10.0	14.8		ug/L		148	73 - 114	27	20
Dibromomethane	0.50	U	10.0	12.3		ug/L		123	77 - 118	15	20
Dichlorodifluoromethane	0.66	U	10.0	12.0		ug/L		120	61 - 134	35	20
Ethylbenzene	0.50	U	10.0	10.4		ug/L		104	80 - 122	18	20
Isopropylbenzene	0.50	U	10.0	11.8		ug/L		118	85 - 148	19	20
Methylene Chloride	0.50	U	10.0	12.9		ug/L		129	65 - 131	18	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	13.9		ug/L		139	75 - 122	24	20
m-Xylene & p-Xylene	1.0	U	10.0	10.5		ug/L		105	70 - 130	20	20
Naphthalene	0.67	U	10.0	14.5		ug/L		145	56 - 143	28	20
N-Propylbenzene	0.50	U	10.0	11.2		ug/L		112	80 - 132	24	20
o-Xylene	0.50	U	10.0	11.3		ug/L		113	70 - 130	19	20
sec-Butylbenzene	0.50	U	10.0	11.3		ug/L		113	78 - 128	27	20
Styrene	0.50	U	10.0	11.7		ug/L		117	68 - 125	18	20
tert-Butylbenzene	0.50	U	10.0	11.7		ug/L		117	75 - 131	23	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-39521-A-9 MSD
Matrix: Water
Analysis Batch: 484019

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tetrachloroethene	230	E	10.0	306	E	ug/L		750	71 - 124	24	20
Toluene	0.50	U	10.0	11.5		ug/L		115	76 - 127	18	20
trans-1,2-Dichloroethene	0.50	U	10.0	11.4		ug/L		114	72 - 117	16	20
trans-1,3-Dichloropropene	0.50	U	10.0	15.3		ug/L		153	85 - 135	27	20
Trichloroethene	4.0		10.0	14.4		ug/L		104	71 - 118	6	20
Trichlorofluoromethane	0.50	U	10.0	14.2		ug/L		142	56 - 127	19	20
Vinyl chloride	0.50	U	10.0	13.9		ug/L		139	58 - 114	22	20
Xylenes, Total	3.0	U	20.0	21.8		ug/L		109	78 - 128	20	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: MB 160-484068/18
Matrix: Water
Analysis Batch: 484068

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.18	ug/L			09/29/20 19:45	1
1,1,1-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/29/20 19:45	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.34	ug/L			09/29/20 19:45	1
1,1,2-Trichloroethane	0.50	U	0.50	0.25	ug/L			09/29/20 19:45	1
1,1-Dichloroethane	0.50	U	0.50	0.25	ug/L			09/29/20 19:45	1
1,1-Dichloroethene	0.50	U	0.50	0.27	ug/L			09/29/20 19:45	1
1,1-Dichloropropene	0.50	U	0.50	0.32	ug/L			09/29/20 19:45	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.48	ug/L			09/29/20 19:45	1
1,2,3-Trichloropropane	0.50	U	0.50	0.44	ug/L			09/29/20 19:45	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.54	ug/L			09/29/20 19:45	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.30	ug/L			09/29/20 19:45	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.49	ug/L			09/29/20 19:45	1
1,2-Dibromoethane	0.50	U	0.50	0.26	ug/L			09/29/20 19:45	1
1,2-Dichlorobenzene	0.50	U	0.50	0.42	ug/L			09/29/20 19:45	1
1,2-Dichloroethane	0.50	U	0.50	0.23	ug/L			09/29/20 19:45	1
1,2-Dichloropropane	0.50	U	0.50	0.20	ug/L			09/29/20 19:45	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.28	ug/L			09/29/20 19:45	1
1,3-Dichlorobenzene	0.50	U	0.50	0.37	ug/L			09/29/20 19:45	1
1,3-Dichloropropane	0.50	U	0.50	0.15	ug/L			09/29/20 19:45	1
1,4-Dichlorobenzene	0.50	U	0.50	0.45	ug/L			09/29/20 19:45	1
2,2-Dichloropropane	0.50	U	0.50	0.26	ug/L			09/29/20 19:45	1
2-Chlorotoluene	0.50	U	0.50	0.42	ug/L			09/29/20 19:45	1
4-Chlorotoluene	0.50	U	0.50	0.44	ug/L			09/29/20 19:45	1
4-Isopropyltoluene	0.50	U	0.50	0.34	ug/L			09/29/20 19:45	1
Benzene	0.50	U	0.50	0.26	ug/L			09/29/20 19:45	1
Bromobenzene	0.50	U	0.50	0.26	ug/L			09/29/20 19:45	1
Bromochloromethane	0.50	U	0.50	0.21	ug/L			09/29/20 19:45	1
Bromodichloromethane	0.50	U	0.50	0.17	ug/L			09/29/20 19:45	1
Bromoform	0.50	U	0.50	0.32	ug/L			09/29/20 19:45	1
Bromomethane	0.57	U	0.57	0.57	ug/L			09/29/20 19:45	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 160-484068/18
Matrix: Water
Analysis Batch: 484068

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.50	U	0.50	0.19	ug/L			09/29/20 19:45	1
Chlorobenzene	0.50	U	0.50	0.28	ug/L			09/29/20 19:45	1
Chloroethane	0.50	U	0.50	0.32	ug/L			09/29/20 19:45	1
Chloroform	0.50	U	0.50	0.24	ug/L			09/29/20 19:45	1
Chloromethane	0.50	U	0.50	0.32	ug/L			09/29/20 19:45	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.23	ug/L			09/29/20 19:45	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.24	ug/L			09/29/20 19:45	1
Dibromochloromethane	0.50	U	0.50	0.14	ug/L			09/29/20 19:45	1
Dibromomethane	0.50	U	0.50	0.31	ug/L			09/29/20 19:45	1
Dichlorodifluoromethane	0.66	U	0.66	0.66	ug/L			09/29/20 19:45	1
Ethylbenzene	0.50	U	0.50	0.34	ug/L			09/29/20 19:45	1
Hexachlorobutadiene	0.50	U	0.50	0.36	ug/L			09/29/20 19:45	1
Isopropylbenzene	0.50	U	0.50	0.46	ug/L			09/29/20 19:45	1
Methylene Chloride	0.50	U	0.50	0.27	ug/L			09/29/20 19:45	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.31	ug/L			09/29/20 19:45	1
m-Xylene & p-Xylene	1.0	U	1.0	0.39	ug/L			09/29/20 19:45	1
Naphthalene	0.67	U	0.67	0.57	ug/L			09/29/20 19:45	1
n-Butylbenzene	0.50	U	0.50	0.42	ug/L			09/29/20 19:45	1
N-Propylbenzene	0.50	U	0.50	0.47	ug/L			09/29/20 19:45	1
o-Xylene	0.50	U	0.50	0.43	ug/L			09/29/20 19:45	1
sec-Butylbenzene	0.50	U	0.50	0.25	ug/L			09/29/20 19:45	1
Styrene	0.50	U	0.50	0.35	ug/L			09/29/20 19:45	1
tert-Butylbenzene	0.50	U	0.50	0.27	ug/L			09/29/20 19:45	1
Tetrachloroethene	0.50	U	0.50	0.31	ug/L			09/29/20 19:45	1
Toluene	0.50	U	0.50	0.24	ug/L			09/29/20 19:45	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.26	ug/L			09/29/20 19:45	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.27	ug/L			09/29/20 19:45	1
Trichloroethene	0.50	U	0.50	0.31	ug/L			09/29/20 19:45	1
Trichlorofluoromethane	0.50	U	0.50	0.26	ug/L			09/29/20 19:45	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/29/20 19:45	1
Xylenes, Total	3.0	U	3.0	0.80	ug/L			09/29/20 19:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*		*09/29/20 19:45*	*1*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*		*09/29/20 19:45*	*1*

Lab Sample ID: LCS 160-484068/15
Matrix: Water
Analysis Batch: 484068

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1,1,2-Tetrachloroethane			10.0	10.7		ug/L		107	70 - 130		
1,1,1-Trichloroethane			10.0	10.5		ug/L		105	70 - 130		
1,1,2,2-Tetrachloroethane			10.0	10.7		ug/L		107	70 - 130		
1,1,2-Trichloroethane			10.0	10.3		ug/L		103	70 - 130		
1,1-Dichloroethane			10.0	10.1		ug/L		101	70 - 130		
1,1-Dichloroethene			10.0	11.0		ug/L		110	70 - 130		
1,1-Dichloropropene			10.0	10.7		ug/L		107	70 - 130		

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-484068/15
Matrix: Water
Analysis Batch: 484068

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichlorobenzene	10.0	10.8		ug/L		108	70 - 130
1,2,3-Trichloropropane	10.0	11.2		ug/L		112	70 - 130
1,2,4-Trichlorobenzene	10.0	11.1		ug/L		111	70 - 130
1,2,4-Trimethylbenzene	10.0	12.3		ug/L		123	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	11.6		ug/L		116	70 - 130
1,2-Dibromoethane	10.0	11.4		ug/L		114	70 - 130
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130
1,2-Dichloroethane	10.0	9.88		ug/L		99	70 - 130
1,2-Dichloropropane	10.0	10.1		ug/L		101	70 - 130
1,3,5-Trimethylbenzene	10.0	11.9		ug/L		119	70 - 130
1,3-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,3-Dichloropropane	10.0	10.7		ug/L		107	70 - 130
1,4-Dichlorobenzene	10.0	9.99		ug/L		100	70 - 130
2,2-Dichloropropane	10.0	10.3		ug/L		103	70 - 130
2-Chlorotoluene	10.0	11.3		ug/L		113	70 - 130
4-Chlorotoluene	10.0	11.6		ug/L		116	70 - 130
4-Isopropyltoluene	10.0	10.4		ug/L		104	70 - 130
Benzene	10.0	9.94		ug/L		99	70 - 130
Bromobenzene	10.0	10.8		ug/L		108	70 - 130
Bromochloromethane	10.0	10.1		ug/L		101	70 - 130
Bromodichloromethane	10.0	10.0		ug/L		100	70 - 130
Bromoform	10.0	11.4		ug/L		114	70 - 130
Bromomethane	10.0	10.2		ug/L		102	70 - 130
Carbon tetrachloride	10.0	10.4		ug/L		104	70 - 130
Chlorobenzene	10.0	9.84		ug/L		98	70 - 130
Chloroethane	10.0	10.2		ug/L		102	70 - 130
Chloroform	10.0	10.1		ug/L		101	70 - 130
Chloromethane	10.0	10.4		ug/L		104	70 - 130
cis-1,2-Dichloroethene	10.0	10.7		ug/L		107	70 - 130
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	70 - 130
Dibromochloromethane	10.0	10.8		ug/L		108	70 - 130
Dibromomethane	10.0	10.4		ug/L		104	70 - 130
Dichlorodifluoromethane	10.0	10.7		ug/L		107	70 - 130
Ethylbenzene	10.0	10.6		ug/L		106	70 - 130
Hexachlorobutadiene	10.0	10.5		ug/L		105	70 - 130
Isopropylbenzene	10.0	10.4		ug/L		104	70 - 130
Methylene Chloride	10.0	10.1		ug/L		101	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	11.5		ug/L		115	70 - 130
m-Xylene & p-Xylene	10.0	11.0		ug/L		110	70 - 130
Naphthalene	10.0	11.4		ug/L		114	70 - 130
n-Butylbenzene	10.0	12.4		ug/L		124	70 - 130
N-Propylbenzene	10.0	11.4		ug/L		114	70 - 130
o-Xylene	10.0	12.1		ug/L		121	70 - 130
sec-Butylbenzene	10.0	11.8		ug/L		118	70 - 130
Styrene	10.0	10.6		ug/L		106	70 - 130
tert-Butylbenzene	10.0	10.1		ug/L		101	70 - 130
Tetrachloroethene	10.0	9.45		ug/L		94	70 - 130
Toluene	10.0	10.2		ug/L		102	70 - 130
trans-1,2-Dichloroethene	10.0	10.5		ug/L		105	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-484068/15
Matrix: Water
Analysis Batch: 484068

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,3-Dichloropropene	10.0	11.1		ug/L		111	70 - 130
Trichloroethene	10.0	9.65		ug/L		97	70 - 130
Trichlorofluoromethane	10.0	10.2		ug/L		102	70 - 130
Vinyl chloride	10.0	10.3		ug/L		103	70 - 130
Xylenes, Total	20.0	23.1		ug/L		116	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*

Lab Sample ID: LCSD 160-484068/16
Matrix: Water
Analysis Batch: 484068

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.9		ug/L		109	70 - 130	1	20
1,1,1-Trichloroethane	10.0	10.8		ug/L		108	70 - 130	3	20
1,1,2,2-Tetrachloroethane	10.0	11.5		ug/L		115	70 - 130	7	20
1,1,2-Trichloroethane	10.0	11.0		ug/L		110	70 - 130	6	20
1,1-Dichloroethane	10.0	10.5		ug/L		105	70 - 130	4	20
1,1-Dichloroethene	10.0	11.3		ug/L		113	70 - 130	3	20
1,1-Dichloropropene	10.0	10.4		ug/L		104	70 - 130	2	20
1,2,3-Trichlorobenzene	10.0	10.9		ug/L		109	70 - 130	1	20
1,2,3-Trichloropropane	10.0	11.5		ug/L		115	70 - 130	2	20
1,2,4-Trichlorobenzene	10.0	10.7		ug/L		107	70 - 130	3	20
1,2,4-Trimethylbenzene	10.0	11.5		ug/L		115	70 - 130	7	20
1,2-Dibromo-3-Chloropropane	10.0	12.2		ug/L		122	70 - 130	5	20
1,2-Dibromoethane	10.0	11.4		ug/L		114	70 - 130	0	20
1,2-Dichlorobenzene	10.0	10.2		ug/L		102	70 - 130	1	20
1,2-Dichloroethane	10.0	10.2		ug/L		102	70 - 130	3	20
1,2-Dichloropropane	10.0	10.3		ug/L		103	70 - 130	2	20
1,3,5-Trimethylbenzene	10.0	10.9		ug/L		109	70 - 130	9	20
1,3-Dichlorobenzene	10.0	10.1		ug/L		101	70 - 130	4	20
1,3-Dichloropropane	10.0	11.0		ug/L		110	70 - 130	2	20
1,4-Dichlorobenzene	10.0	9.57		ug/L		96	70 - 130	4	20
2,2-Dichloropropane	10.0	10.8		ug/L		108	70 - 130	4	20
2-Chlorotoluene	10.0	10.7		ug/L		107	70 - 130	6	20
4-Chlorotoluene	10.0	10.9		ug/L		109	70 - 130	6	20
4-Isopropyltoluene	10.0	9.24		ug/L		92	70 - 130	12	20
Benzene	10.0	10.0		ug/L		100	70 - 130	1	20
Bromobenzene	10.0	10.6		ug/L		106	70 - 130	1	20
Bromochloromethane	10.0	10.7		ug/L		107	70 - 130	6	20
Bromodichloromethane	10.0	10.1		ug/L		101	70 - 130	1	20
Bromoform	10.0	11.8		ug/L		118	70 - 130	4	20
Bromomethane	10.0	10.8		ug/L		108	70 - 130	6	20
Carbon tetrachloride	10.0	10.7		ug/L		107	70 - 130	3	20
Chlorobenzene	10.0	9.64		ug/L		96	70 - 130	2	20
Chloroethane	10.0	10.9		ug/L		109	70 - 130	6	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-484068/16
Matrix: Water
Analysis Batch: 484068

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloroform	10.0	10.2		ug/L		102	70 - 130	1	20
Chloromethane	10.0	11.1		ug/L		111	70 - 130	6	20
cis-1,2-Dichloroethene	10.0	11.0		ug/L		110	70 - 130	3	20
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	70 - 130	1	20
Dibromochloromethane	10.0	11.3		ug/L		113	70 - 130	4	20
Dibromomethane	10.0	10.6		ug/L		106	70 - 130	2	20
Dichlorodifluoromethane	10.0	10.9		ug/L		109	70 - 130	1	20
Ethylbenzene	10.0	10.0		ug/L		100	70 - 130	6	20
Hexachlorobutadiene	10.0	8.75		ug/L		87	70 - 130	18	20
Isopropylbenzene	10.0	9.62		ug/L		96	70 - 130	8	20
Methylene Chloride	10.0	10.6		ug/L		106	70 - 130	5	20
Methyl-t-Butyl Ether (MTBE)	10.0	12.0		ug/L		120	70 - 130	4	20
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	70 - 130	8	20
Naphthalene	10.0	11.6		ug/L		116	70 - 130	2	20
n-Butylbenzene	10.0	10.2		ug/L		102	70 - 130	20	20
N-Propylbenzene	10.0	10.1		ug/L		101	70 - 130	12	20
o-Xylene	10.0	11.7		ug/L		117	70 - 130	3	20
sec-Butylbenzene	10.0	10.3		ug/L		103	70 - 130	14	20
Styrene	10.0	10.3		ug/L		103	70 - 130	3	20
tert-Butylbenzene	10.0	9.10		ug/L		91	70 - 130	10	20
Tetrachloroethene	10.0	8.81		ug/L		88	70 - 130	7	20
Toluene	10.0	10.0		ug/L		100	70 - 130	1	20
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	70 - 130	4	20
trans-1,3-Dichloropropene	10.0	11.4		ug/L		114	70 - 130	3	20
Trichloroethene	10.0	9.38		ug/L		94	70 - 130	3	20
Trichlorofluoromethane	10.0	11.1		ug/L		111	70 - 130	9	20
Vinyl chloride	10.0	10.9		ug/L		109	70 - 130	6	20
Xylenes, Total	20.0	21.9		ug/L		110	70 - 130	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*

Lab Sample ID: 160-39483-A-13 MS
Matrix: Water
Analysis Batch: 484068

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.50	U	10.0	9.77		ug/L		98	73 - 123
1,1,1-Trichloroethane	0.50	U	10.0	9.60		ug/L		96	76 - 122
1,1,2,2-Tetrachloroethane	0.50	U	10.0	12.0		ug/L		120	77 - 118
1,1,2-Trichloroethane	0.50	U	10.0	11.8		ug/L		118	79 - 116
1,1-Dichloroethane	0.50	U	10.0	10.8		ug/L		108	81 - 120
1,1-Dichloroethene	0.50	U	10.0	9.78		ug/L		98	68 - 116
1,1-Dichloropropene	0.50	U	10.0	9.20		ug/L		92	74 - 124
1,2,3-Trichlorobenzene	0.59	U	10.0	8.77		ug/L		88	57 - 128
1,2,3-Trichloropropane	0.50	U	10.0	12.5		ug/L		125	72 - 122
1,2,4-Trichlorobenzene	0.55	U	10.0	8.62		ug/L		86	54 - 150

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-39483-A-13 MS
Matrix: Water
Analysis Batch: 484068

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	0.50	U	10.0	9.66		ug/L		97	70 - 125
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	11.5		ug/L		115	58 - 130
1,2-Dibromoethane	0.50	U	10.0	11.9		ug/L		119	76 - 118
1,2-Dichlorobenzene	0.50	U	10.0	8.98		ug/L		90	76 - 120
1,2-Dichloroethane	0.50	U	10.0	11.6		ug/L		116	78 - 123
1,2-Dichloropropane	0.50	U	10.0	11.0		ug/L		110	80 - 119
1,3,5-Trimethylbenzene	0.50	U	10.0	8.74		ug/L		87	76 - 126
1,3-Dichlorobenzene	0.50	U	10.0	8.69		ug/L		87	76 - 120
1,3-Dichloropropane	0.50	U	10.0	11.7		ug/L		117	79 - 116
1,4-Dichlorobenzene	0.50	U	10.0	8.73		ug/L		87	75 - 117
2,2-Dichloropropane	0.50	U	10.0	8.79		ug/L		88	76 - 120
2-Chlorotoluene	0.50	U	10.0	8.94		ug/L		89	79 - 125
4-Chlorotoluene	0.50	U	10.0	9.11		ug/L		91	76 - 136
4-Isopropyltoluene	0.50	U	10.0	7.97		ug/L		80	78 - 132
Benzene	0.50	U	10.0	10.0		ug/L		100	77 - 124
Bromobenzene	0.50	U	10.0	9.52		ug/L		95	77 - 115
Bromochloromethane	0.50	U	10.0	11.5		ug/L		115	73 - 118
Bromodichloromethane	0.50	U	10.0	10.9		ug/L		109	73 - 118
Bromoform	0.50	U	10.0	11.0		ug/L		110	70 - 118
Carbon tetrachloride	0.50	U	10.0	8.69		ug/L		87	70 - 128
Chlorobenzene	0.50	U	10.0	8.94		ug/L		89	76 - 124
Chloroform	0.50	U	10.0	10.7		ug/L		107	77 - 122
cis-1,2-Dichloroethene	0.50	U	10.0	10.8		ug/L		108	71 - 117
cis-1,3-Dichloropropene	0.50	U	10.0	9.57		ug/L		96	76 - 128
Dibromochloromethane	0.50	U	10.0	11.1		ug/L		111	73 - 114
Dibromomethane	0.50	U	10.0	12.1		ug/L		121	77 - 118
Ethylbenzene	0.50	U	10.0	8.41		ug/L		84	80 - 122
Hexachlorobutadiene	0.50	U	10.0	7.39		ug/L		74	57 - 144
Isopropylbenzene	0.50	U	10.0	7.43		ug/L		74	85 - 148
Methylene Chloride	0.50	U	10.0	11.4		ug/L		114	65 - 131
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	13.4		ug/L		134	75 - 122
m-Xylene & p-Xylene	1.0	U	10.0	8.75		ug/L		87	70 - 130
Naphthalene	0.67	U	10.0	8.98		ug/L		90	56 - 143
n-Butylbenzene	0.50	U	10.0	9.06		ug/L		91	74 - 128
N-Propylbenzene	0.50	U	10.0	8.29		ug/L		83	80 - 132
o-Xylene	0.50	U	10.0	9.30		ug/L		93	70 - 130
sec-Butylbenzene	0.50	U	10.0	8.59		ug/L		86	78 - 128
Styrene	0.50	U	10.0	8.72		ug/L		87	68 - 125
tert-Butylbenzene	0.50	U	10.0	7.55		ug/L		76	75 - 131
Tetrachloroethene	2.6		10.0	9.98		ug/L		74	71 - 124
Toluene	0.50	U	10.0	8.68		ug/L		87	76 - 127
trans-1,2-Dichloroethene	0.50	U	10.0	9.88		ug/L		99	72 - 117
trans-1,3-Dichloropropene	0.50	U	10.0	10.8		ug/L		108	85 - 135
Trichloroethene	0.50	U	10.0	8.61		ug/L		86	71 - 118
Xylenes, Total	3.0	U	20.0	18.1		ug/L		90	78 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-39483-A-13 MS
Matrix: Water
Analysis Batch: 484068

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 160-39483-A-13 MSD
Matrix: Water
Analysis Batch: 484068

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.50	U	10.0	9.80		ug/L		98	73 - 123	0	20
1,1,1-Trichloroethane	0.50	U	10.0	10.1		ug/L		101	76 - 122	5	20
1,1,2,2-Tetrachloroethane	0.50	U	10.0	10.5		ug/L		105	77 - 118	14	20
1,1,2-Trichloroethane	0.50	U	10.0	10.6		ug/L		106	79 - 116	11	20
1,1-Dichloroethane	0.50	U	10.0	10.5		ug/L		105	81 - 120	3	20
1,1-Dichloroethene	0.50	U	10.0	10.3		ug/L		103	68 - 116	5	20
1,1-Dichloropropene	0.50	U	10.0	10.4		ug/L		104	74 - 124	12	20
1,2,3-Trichlorobenzene	0.59	U	10.0	9.53		ug/L		95	57 - 128	8	20
1,2,3-Trichloropropane	0.50	U	10.0	10.1		ug/L		101	72 - 122	21	20
1,2,4-Trichlorobenzene	0.55	U	10.0	9.61		ug/L		96	54 - 150	11	20
1,2,4-Trimethylbenzene	0.50	U	10.0	11.6		ug/L		116	70 - 125	18	20
1,2-Dibromo-3-Chloropropane	0.63	U	10.0	9.88		ug/L		99	58 - 130	16	20
1,2-Dibromoethane	0.50	U	10.0	10.8		ug/L		108	76 - 118	10	20
1,2-Dichlorobenzene	0.50	U	10.0	9.71		ug/L		97	76 - 120	8	20
1,2-Dichloroethane	0.50	U	10.0	10.4		ug/L		104	78 - 123	11	20
1,2-Dichloropropane	0.50	U	10.0	10.6		ug/L		106	80 - 119	4	20
1,3,5-Trimethylbenzene	0.50	U	10.0	10.9		ug/L		109	76 - 126	22	20
1,3-Dichlorobenzene	0.50	U	10.0	9.98		ug/L		100	76 - 120	14	20
1,3-Dichloropropane	0.50	U	10.0	10.6		ug/L		106	79 - 116	10	20
1,4-Dichlorobenzene	0.50	U	10.0	9.93		ug/L		99	75 - 117	13	20
2,2-Dichloropropane	0.50	U	10.0	8.76		ug/L		88	76 - 120	0	20
2-Chlorotoluene	0.50	U	10.0	10.5		ug/L		105	79 - 125	16	20
4-Chlorotoluene	0.50	U	10.0	11.0		ug/L		110	76 - 136	18	20
4-Isopropyltoluene	0.50	U	10.0	10.0		ug/L		100	78 - 132	23	20
Benzene	0.50	U	10.0	10.2		ug/L		102	77 - 124	2	20
Bromobenzene	0.50	U	10.0	10.0		ug/L		100	77 - 115	5	20
Bromochloromethane	0.50	U	10.0	10.7		ug/L		107	73 - 118	8	20
Bromodichloromethane	0.50	U	10.0	10.1		ug/L		101	73 - 118	8	20
Bromoform	0.50	U	10.0	9.62		ug/L		96	70 - 118	13	20
Bromomethane	0.57	U	10.0	10.6		ug/L					
Carbon tetrachloride	0.50	U	10.0	9.59		ug/L		96	70 - 128	10	20
Chlorobenzene	0.50	U	10.0	9.78		ug/L		98	76 - 124	9	20
Chloroethane	0.50	U	10.0	11.2		ug/L					
Chloroform	0.50	U	10.0	10.4		ug/L		104	77 - 122	3	20
Chloromethane	0.50	U	10.0	11.0		ug/L					
cis-1,2-Dichloroethene	0.50	U	10.0	10.7		ug/L		107	71 - 117	1	20
cis-1,3-Dichloropropene	0.50	U	10.0	9.29		ug/L		93	76 - 128	3	20
Dibromochloromethane	0.50	U	10.0	9.97		ug/L		100	73 - 114	10	20
Dibromomethane	0.50	U	10.0	10.7		ug/L		107	77 - 118	12	20
Dichlorodifluoromethane	0.66	U	10.0	10.3		ug/L					
Ethylbenzene	0.50	U	10.0	10.2		ug/L		102	80 - 122	20	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-39483-A-13 MSD
Matrix: Water
Analysis Batch: 484068

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorobutadiene	0.50	U	10.0	9.81		ug/L		98	57 - 144	28	20
Isopropylbenzene	0.50	U	10.0	9.37		ug/L		94	85 - 148	23	20
Methylene Chloride	0.50	U	10.0	10.6		ug/L		106	65 - 131	7	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	10.0	11.3		ug/L		113	75 - 122	17	20
m-Xylene & p-Xylene	1.0	U	10.0	10.7		ug/L		107	70 - 130	20	20
Naphthalene	0.67	U	10.0	9.07		ug/L		91	56 - 143	1	20
n-Butylbenzene	0.50	U	10.0	12.1		ug/L		121	74 - 128	29	20
N-Propylbenzene	0.50	U	10.0	10.6		ug/L		106	80 - 132	25	20
o-Xylene	0.50	U	10.0	11.3		ug/L		113	70 - 130	19	20
sec-Butylbenzene	0.50	U	10.0	11.3		ug/L		113	78 - 128	27	20
Styrene	0.50	U	10.0	9.88		ug/L		99	68 - 125	12	20
tert-Butylbenzene	0.50	U	10.0	9.51		ug/L		95	75 - 131	23	20
Tetrachloroethene	2.6		10.0	11.5		ug/L		89	71 - 124	14	20
Toluene	0.50	U	10.0	9.74		ug/L		97	76 - 127	11	20
trans-1,2-Dichloroethene	0.50	U	10.0	9.97		ug/L		100	72 - 117	1	20
trans-1,3-Dichloropropene	0.50	U	10.0	10.1		ug/L		101	85 - 135	7	20
Trichloroethene	0.50	U	10.0	9.56		ug/L		96	71 - 118	10	20
Trichlorofluoromethane	0.50	U	10.0	10.7		ug/L					
Vinyl chloride	0.50	U	10.0	10.5		ug/L					
Xylenes, Total	3.0	U	20.0	22.0		ug/L		110	78 - 128	20	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-483330/1-A ^2
Matrix: Water
Analysis Batch: 483950

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 483330

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		09/22/20 13:23	09/25/20 22:57	2

Lab Sample ID: LCS 160-483330/2-A ^2
Matrix: Water
Analysis Batch: 483950

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 483330

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	212		ug/L		106	82 - 116		

Lab Sample ID: 160-39488-D-2-B MS ^2
Matrix: Water
Analysis Batch: 483950

Client Sample ID: 160-39488-D-2-B MS ^2
Prep Type: Total/NA
Prep Batch: 483330

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	42.6		200	203	N	ug/L		80	82 - 116		

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 160-39488-D-2-C MSD ^2
Matrix: Water
Analysis Batch: 483950

Client Sample ID: 160-39488-D-2-C MSD ^2
Prep Type: Total/NA
Prep Batch: 483330

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	42.6		200	201	N	ug/L		79	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39488-1
SDG: 42353

GC/MS VOA

Analysis Batch: 484018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39488-1	42353-001	Total/NA	Water	524.2	
160-39488-2	42353-002	Total/NA	Water	524.2	
MB 160-484018/6	Method Blank	Total/NA	Water	524.2	
LCS 160-484018/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-484018/4	Lab Control Sample Dup	Total/NA	Water	524.2	
160-39441-C-1 MS	Matrix Spike	Total/NA	Water	524.2	
160-39441-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Analysis Batch: 484019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39488-3	42353-003	Total/NA	Water	524.2	
MB 160-484019/6	Method Blank	Total/NA	Water	524.2	
LCS 160-484019/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-484019/4	Lab Control Sample Dup	Total/NA	Water	524.2	
160-39521-A-9 MS	Matrix Spike	Total/NA	Water	524.2	
160-39521-A-9 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Analysis Batch: 484068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39488-3	42353-003	Total/NA	Water	524.2	
MB 160-484068/18	Method Blank	Total/NA	Water	524.2	
LCS 160-484068/15	Lab Control Sample	Total/NA	Water	524.2	
LCSD 160-484068/16	Lab Control Sample Dup	Total/NA	Water	524.2	
160-39483-A-13 MS	Matrix Spike	Total/NA	Water	524.2	
160-39483-A-13 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Analysis Batch: 486381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39488-1	42353-001	Total/NA	Water	524.2	
160-39488-2	42353-002	Total/NA	Water	524.2	

Metals

Prep Batch: 483330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39488-2	42353-002	Total/NA	Water	3010A	
MB 160-483330/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-483330/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-39488-D-2-B MS ^2	160-39488-D-2-B MS ^2	Total/NA	Water	3010A	
160-39488-D-2-C MSD ^2	160-39488-D-2-C MSD ^2	Total/NA	Water	3010A	

Analysis Batch: 483950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-39488-2	42353-002	Total/NA	Water	6020A	483330
MB 160-483330/1-A ^2	Method Blank	Total/NA	Water	6020A	483330
LCS 160-483330/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	483330
160-39488-D-2-B MS ^2	160-39488-D-2-B MS ^2	Total/NA	Water	6020A	483330
160-39488-D-2-C MSD ^2	160-39488-D-2-C MSD ^2	Total/NA	Water	6020A	483330

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-39488-1
SDG: 42353

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		DCZ	BFB										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
160-39441-C-1 MS	Matrix Spike	103	96										
160-39441-C-1 MSD	Matrix Spike Duplicate	101	97										
160-39483-A-13 MS	Matrix Spike	99	96										
160-39483-A-13 MSD	Matrix Spike Duplicate	100	100										
160-39488-1	42353-001	114	97										
160-39488-1	42353-001	113	106										
160-39488-2	42353-002	110	97										
160-39488-2	42353-002	119	112										
160-39488-3	42353-003	118	94										
160-39488-3	42353-003	118	112										
160-39521-A-9 MS	Matrix Spike	109	103										
160-39521-A-9 MSD	Matrix Spike Duplicate	106	101										
LCS 160-484018/3	Lab Control Sample	100	89										
LCS 160-484019/3	Lab Control Sample	109	101										
LCS 160-484068/15	Lab Control Sample	102	109										
LCSD 160-484018/4	Lab Control Sample Dup	103	88										
LCSD 160-484019/4	Lab Control Sample Dup	108	99										
LCSD 160-484068/16	Lab Control Sample Dup	105	110										
MB 160-484018/6	Method Blank	104	102										
MB 160-484019/6	Method Blank	111	89										
MB 160-484068/18	Method Blank	108	116										

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene (Surr)

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-40039-1
Laboratory Sample Delivery Group: 42469
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
11/9/2020 10:46:57 AM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-40039-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-40039-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 10/22/2020 8:59 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.9º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42469-001 (160-40039-1), 42469-002 (160-40039-2) and 42469-003 (160-40039-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 10/29/2020 and 10/30/2020.

Job ID: 160-40039-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Analytical Batch 460-735898:
The continuing calibration verification (CCV) recovered outside acceptance criteria, low biased, for Dichlorodifluoromethane. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated sample was non-detect for this analyte, the data was reported: (CCVIS 460-735898/2).

The laboratory control sample (LCS) recovered outside control limits for the following analytes: Chloroethane and 1,2-Dichloropropane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data was reported: (LCS 460-735898/4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 42469-002 (160-40039-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 10/30/2020 and analyzed on 11/02/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-40039 Chain of Custody

Requires EDD ✓

BROOKHAVEN
NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42469

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext: 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Milligan	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	10/21/20	0940	W	RTW-1 Influent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0	↓	0945	W	RTW-1 Effluent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0	↓	0945	W	RTW-1 Effluent	250 ML	P	1	Hno3										x
003	E	G	TB-1	0	10/21/20	0900	W	Trip Blank	40 ML	SC	3	HCL					x					

Analysis Requested

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milligan 10/21/20	Print FED EX	Print
Signature 1100	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print [signature] 10/22/2020	Print
Signature	Signature Laurel Mazariegos 0859	Signature

Contractor Lab Sample Disposal:
- ❑ Return To Client
- ☒ Disposal by Lab
- ❑ Archive For _____ Months

Data Package: ❑ Full ☒ Summary

Turn-Around Time Required:
- ❑ Rush (1 Day)
- ☒ 14 Days
- ❑ 30 Days
- ❑ 7 Days
- ❑ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 160-202952.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 160-40039-1
Address: 777 New Durham Road, ,	Due Date Requested: 11/5/2020			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	524.2_Preserved/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
42469-001 (160-40039-1) ABC	10/21/20	09:40 Eastern		Water			X	3	
42469-002 (160-40039-2)	10/21/20	09:45 Eastern		Water			X	3	
42469-003 (160-40039-3)	10/21/20	09:00 Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Michael Konvihinger	Date/Time: OCT 27 2020 18:00	Company: ETA STL	Received by:	Date/Time:	Company:
Relinquished by: Ken [illegible]	Date/Time: 10/28/20 920	Company:	Received by: [illegible]	Date/Time: 10/28/20 920	Company: TA Edison
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: tape		Cooler Temperature(s) °C and Other Remarks: 3.4°C IR#1		

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-40039-1
SDG Number: 42469

Login Number: 40039
List Number: 1
Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-40039-1
SDG Number: 42469

Login Number: 40039
List Number: 2
Creator: Meyers, Gary

List Source: Eurofins TestAmerica, Edison
List Creation: 10/29/20 10:37 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	Tape
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40039-1
SDG: 42469

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40039-1
SDG: 42469

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40039-1
SDG: 42469

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-40039-1	42469-001	Water	10/21/20 09:40	10/22/20 08:59	
160-40039-2	42469-002	Water	10/21/20 09:45	10/22/20 08:59	
160-40039-3	42469-003	Water	10/21/20 09:00	10/22/20 08:59	

Client Sample Results

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40039-1
SDG: 42469

Client Sample ID: 42469-001

Date Collected: 10/21/20 09:40
Date Received: 10/22/20 08:59

Lab Sample ID: 160-40039-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/29/20 23:42	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/29/20 23:42	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			10/29/20 23:42	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			10/29/20 23:42	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			10/29/20 23:42	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			10/29/20 23:42	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/29/20 23:42	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			10/29/20 23:42	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			10/29/20 23:42	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			10/29/20 23:42	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			10/29/20 23:42	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			10/29/20 23:42	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			10/29/20 23:42	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			10/29/20 23:42	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			10/29/20 23:42	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			10/29/20 23:42	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			10/29/20 23:42	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			10/29/20 23:42	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			10/29/20 23:42	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			10/29/20 23:42	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			10/29/20 23:42	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			10/29/20 23:42	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			10/29/20 23:42	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			10/29/20 23:42	1
Benzene	0.50	U	0.50	0.11	ug/L			10/29/20 23:42	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			10/29/20 23:42	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			10/29/20 23:42	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			10/29/20 23:42	1
Bromoform	0.50	U	0.50	0.080	ug/L			10/29/20 23:42	1
Bromomethane	0.57	U	0.57	0.14	ug/L			10/29/20 23:42	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			10/29/20 23:42	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			10/29/20 23:42	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			10/29/20 23:42	1
Chloroethane	0.50	U	0.50	0.23	ug/L			10/29/20 23:42	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			10/29/20 23:42	1
Chloroform	**0.67**		0.50	0.12	ug/L			10/29/20 23:42	1
Chloromethane	0.50	U	0.50	0.18	ug/L			10/29/20 23:42	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			10/29/20 23:42	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.080	ug/L			10/29/20 23:42	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			10/29/20 23:42	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			10/29/20 23:42	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			10/29/20 23:42	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			10/29/20 23:42	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.090	ug/L			10/29/20 23:42	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			10/29/20 23:42	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			10/29/20 23:42	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			10/29/20 23:42	1
Naphthalene	0.67	U	0.67	0.080	ug/L			10/29/20 23:42	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			10/29/20 23:42	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40039-1
SDG: 42469

Client Sample ID: 42469-001

Date Collected: 10/21/20 09:40
Date Received: 10/22/20 08:59

Lab Sample ID: 160-40039-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			10/29/20 23:42	1
o-Xylene	0.50	U	0.50	0.090	ug/L			10/29/20 23:42	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			10/29/20 23:42	1
Styrene	0.50	U	0.50	0.090	ug/L			10/29/20 23:42	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			10/29/20 23:42	1
Tetrachloroethene	**4.5**		0.50	0.14	ug/L			10/29/20 23:42	1
Toluene	0.50	U	0.50	0.11	ug/L			10/29/20 23:42	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			10/29/20 23:42	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			10/29/20 23:42	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			10/29/20 23:42	1
Trichlorofluoromethane	**0.48**	**J**	0.50	0.27	ug/L			10/29/20 23:42	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			10/29/20 23:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*115*		*70 - 130*		*10/29/20 23:42*	*1*
4-Bromofluorobenzene	*119*		*70 - 130*		*10/29/20 23:42*	*1*

Client Sample ID: 42469-002

Date Collected: 10/21/20 09:45
Date Received: 10/22/20 08:59

Lab Sample ID: 160-40039-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/30/20 00:05	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/30/20 00:05	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			10/30/20 00:05	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			10/30/20 00:05	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			10/30/20 00:05	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			10/30/20 00:05	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/30/20 00:05	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			10/30/20 00:05	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			10/30/20 00:05	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			10/30/20 00:05	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			10/30/20 00:05	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			10/30/20 00:05	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			10/30/20 00:05	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			10/30/20 00:05	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			10/30/20 00:05	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			10/30/20 00:05	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			10/30/20 00:05	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			10/30/20 00:05	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			10/30/20 00:05	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			10/30/20 00:05	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			10/30/20 00:05	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			10/30/20 00:05	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			10/30/20 00:05	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			10/30/20 00:05	1
Benzene	0.50	U	0.50	0.11	ug/L			10/30/20 00:05	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			10/30/20 00:05	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			10/30/20 00:05	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40039-1
SDG: 42469

Client Sample ID: 42469-002
Date Collected: 10/21/20 09:45
Date Received: 10/22/20 08:59

Lab Sample ID: 160-40039-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			10/30/20 00:05	1
Bromoform	0.50	U	0.50	0.080	ug/L			10/30/20 00:05	1
Bromomethane	0.57	U	0.57	0.14	ug/L			10/30/20 00:05	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			10/30/20 00:05	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			10/30/20 00:05	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			10/30/20 00:05	1
Chloroethane	0.50	U	0.50	0.23	ug/L			10/30/20 00:05	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			10/30/20 00:05	1
Chloroform	0.50	U	0.50	0.12	ug/L			10/30/20 00:05	1
Chloromethane	0.50	U	0.50	0.18	ug/L			10/30/20 00:05	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			10/30/20 00:05	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.080	ug/L			10/30/20 00:05	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			10/30/20 00:05	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			10/30/20 00:05	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			10/30/20 00:05	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			10/30/20 00:05	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.090	ug/L			10/30/20 00:05	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			10/30/20 00:05	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			10/30/20 00:05	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			10/30/20 00:05	1
Naphthalene	0.67	U	0.67	0.080	ug/L			10/30/20 00:05	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			10/30/20 00:05	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			10/30/20 00:05	1
o-Xylene	0.50	U	0.50	0.090	ug/L			10/30/20 00:05	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			10/30/20 00:05	1
Styrene	0.50	U	0.50	0.090	ug/L			10/30/20 00:05	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			10/30/20 00:05	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			10/30/20 00:05	1
Toluene	0.50	U	0.50	0.11	ug/L			10/30/20 00:05	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			10/30/20 00:05	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			10/30/20 00:05	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			10/30/20 00:05	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			10/30/20 00:05	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			10/30/20 00:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*124*		*70 - 130*		*10/30/20 00:05*	*1*
4-Bromofluorobenzene	*120*		*70 - 130*		*10/30/20 00:05*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		10/30/20 10:27	11/02/20 21:03	2

Client Sample ID: 42469-003
Date Collected: 10/21/20 09:00
Date Received: 10/22/20 08:59

Lab Sample ID: 160-40039-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/30/20 00:29	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40039-1
SDG: 42469

Client Sample ID: 42469-003
Date Collected: 10/21/20 09:00
Date Received: 10/22/20 08:59

Lab Sample ID: 160-40039-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/30/20 00:29	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			10/30/20 00:29	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			10/30/20 00:29	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			10/30/20 00:29	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			10/30/20 00:29	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/30/20 00:29	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			10/30/20 00:29	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			10/30/20 00:29	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			10/30/20 00:29	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			10/30/20 00:29	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			10/30/20 00:29	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			10/30/20 00:29	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			10/30/20 00:29	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			10/30/20 00:29	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			10/30/20 00:29	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			10/30/20 00:29	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			10/30/20 00:29	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			10/30/20 00:29	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			10/30/20 00:29	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			10/30/20 00:29	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			10/30/20 00:29	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			10/30/20 00:29	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			10/30/20 00:29	1
Benzene	0.50	U	0.50	0.11	ug/L			10/30/20 00:29	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			10/30/20 00:29	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			10/30/20 00:29	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			10/30/20 00:29	1
Bromoform	0.50	U	0.50	0.080	ug/L			10/30/20 00:29	1
Bromomethane	0.57	U	0.57	0.14	ug/L			10/30/20 00:29	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			10/30/20 00:29	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			10/30/20 00:29	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			10/30/20 00:29	1
Chloroethane	0.50	U	0.50	0.23	ug/L			10/30/20 00:29	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			10/30/20 00:29	1
Chloroform	0.50	U	0.50	0.12	ug/L			10/30/20 00:29	1
Chloromethane	0.50	U	0.50	0.18	ug/L			10/30/20 00:29	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			10/30/20 00:29	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.080	ug/L			10/30/20 00:29	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			10/30/20 00:29	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			10/30/20 00:29	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			10/30/20 00:29	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			10/30/20 00:29	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.090	ug/L			10/30/20 00:29	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			10/30/20 00:29	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			10/30/20 00:29	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			10/30/20 00:29	1
Naphthalene	0.67	U	0.67	0.080	ug/L			10/30/20 00:29	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			10/30/20 00:29	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			10/30/20 00:29	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40039-1
SDG: 42469

Client Sample ID: 42469-003
Date Collected: 10/21/20 09:00
Date Received: 10/22/20 08:59

Lab Sample ID: 160-40039-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.090	ug/L			10/30/20 00:29	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			10/30/20 00:29	1
Styrene	0.50	U	0.50	0.090	ug/L			10/30/20 00:29	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			10/30/20 00:29	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			10/30/20 00:29	1
Toluene	0.50	U	0.50	0.11	ug/L			10/30/20 00:29	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			10/30/20 00:29	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			10/30/20 00:29	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			10/30/20 00:29	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			10/30/20 00:29	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			10/30/20 00:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*122*		*70 - 130*		*10/30/20 00:29*	*1*
4-Bromofluorobenzene	*118*		*70 - 130*		*10/30/20 00:29*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-735898/9
Matrix: Water
Analysis Batch: 735898

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			10/29/20 21:21	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			10/29/20 21:21	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			10/29/20 21:21	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			10/29/20 21:21	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			10/29/20 21:21	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			10/29/20 21:21	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			10/29/20 21:21	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			10/29/20 21:21	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			10/29/20 21:21	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			10/29/20 21:21	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			10/29/20 21:21	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			10/29/20 21:21	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			10/29/20 21:21	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			10/29/20 21:21	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			10/29/20 21:21	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			10/29/20 21:21	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			10/29/20 21:21	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			10/29/20 21:21	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			10/29/20 21:21	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			10/29/20 21:21	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			10/29/20 21:21	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			10/29/20 21:21	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			10/29/20 21:21	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			10/29/20 21:21	1
Benzene	0.50	U	0.50	0.11	ug/L			10/29/20 21:21	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			10/29/20 21:21	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			10/29/20 21:21	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			10/29/20 21:21	1
Bromoform	0.50	U	0.50	0.080	ug/L			10/29/20 21:21	1
Bromomethane	0.57	U	0.57	0.14	ug/L			10/29/20 21:21	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			10/29/20 21:21	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			10/29/20 21:21	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			10/29/20 21:21	1
Chloroethane	0.50	U	0.50	0.23	ug/L			10/29/20 21:21	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			10/29/20 21:21	1
Chloroform	0.50	U	0.50	0.12	ug/L			10/29/20 21:21	1
Chloromethane	0.50	U	0.50	0.18	ug/L			10/29/20 21:21	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			10/29/20 21:21	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.080	ug/L			10/29/20 21:21	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			10/29/20 21:21	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			10/29/20 21:21	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			10/29/20 21:21	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			10/29/20 21:21	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.090	ug/L			10/29/20 21:21	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			10/29/20 21:21	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			10/29/20 21:21	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			10/29/20 21:21	1
Naphthalene	0.67	U	0.67	0.080	ug/L			10/29/20 21:21	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-735898/9
Matrix: Water
Analysis Batch: 735898

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			10/29/20 21:21	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			10/29/20 21:21	1
o-Xylene	0.50	U	0.50	0.090	ug/L			10/29/20 21:21	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			10/29/20 21:21	1
Styrene	0.50	U	0.50	0.090	ug/L			10/29/20 21:21	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			10/29/20 21:21	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			10/29/20 21:21	1
Toluene	0.50	U	0.50	0.11	ug/L			10/29/20 21:21	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			10/29/20 21:21	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			10/29/20 21:21	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			10/29/20 21:21	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			10/29/20 21:21	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			10/29/20 21:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4	*121*		*70 - 130*		*10/29/20 21:21*	*1*
4-Bromofluorobenzene	*116*		*70 - 130*		*10/29/20 21:21*	*1*

Lab Sample ID: LCS 460-735898/4
Matrix: Water
Analysis Batch: 735898

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	2.28		ug/L		114	70 - 130
1,1,1-Trichloroethane	2.00	2.31		ug/L		115	70 - 130
1,1,2,2-Tetrachloroethane	2.00	2.46		ug/L		123	70 - 130
1,1,2-Trichloroethane	2.00	2.34		ug/L		117	70 - 130
1,1-Dichloroethane	2.00	2.51		ug/L		125	70 - 130
1,1-Dichloroethene	2.00	2.30		ug/L		115	70 - 130
1,1-Dichloropropene	2.00	2.29		ug/L		114	70 - 130
1,2,3-Trichlorobenzene	2.00	2.18		ug/L		109	70 - 130
1,2,3-Trichloropropane	2.00	2.15		ug/L		107	70 - 130
1,2,4-Trichlorobenzene	2.00	2.12		ug/L		106	70 - 130
1,2,4-Trimethylbenzene	2.00	2.25		ug/L		113	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	2.37		ug/L		118	70 - 130
1,2-Dibromoethane	2.00	2.28		ug/L		114	70 - 130
1,2-Dichlorobenzene	2.00	2.28		ug/L		114	70 - 130
1,2-Dichloroethane	2.00	2.49		ug/L		124	70 - 130
1,2-Dichloropropane	2.00	2.62		ug/L		131	70 - 130
1,3,5-Trimethylbenzene	2.00	2.30		ug/L		115	70 - 130
1,3-Dichlorobenzene	2.00	2.24		ug/L		112	70 - 130
1,3-Dichloropropane	2.00	2.44		ug/L		122	70 - 130
1,4-Dichlorobenzene	2.00	2.27		ug/L		114	70 - 130
2,2-Dichloropropane	2.00	2.34		ug/L		117	70 - 130
2-Chlorotoluene	2.00	2.28		ug/L		114	70 - 130
4-Chlorotoluene	2.00	2.26		ug/L		113	70 - 130
4-Isopropyltoluene	2.00	2.26		ug/L		113	70 - 130
Benzene	2.00	2.51		ug/L		126	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-735898/4
Matrix: Water
Analysis Batch: 735898

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	2.00	2.26		ug/L		113	70 - 130
Bromochloromethane	2.00	2.42		ug/L		121	70 - 130
Bromodichloromethane	2.00	2.30		ug/L		115	70 - 130
Bromoform	2.00	2.27		ug/L		113	70 - 130
Bromomethane	2.00	1.82		ug/L		91	70 - 130
Carbon tetrachloride	2.00	2.28		ug/L		114	70 - 130
Chlorobenzene	2.00	2.32		ug/L		116	70 - 130
Dibromochloromethane	2.00	2.31		ug/L		116	70 - 130
Chloroethane	2.00	2.69		ug/L		134	70 - 130
Vinyl chloride	2.00	2.39		ug/L		119	70 - 130
Chloroform	2.00	2.41		ug/L		120	70 - 130
Chloromethane	2.00	2.46		ug/L		123	70 - 130
cis-1,2-Dichloroethene	2.00	2.49		ug/L		124	70 - 130
cis-1,3-Dichloropropene	2.00	2.27		ug/L		114	70 - 130
Dibromomethane	2.00	2.43		ug/L		122	70 - 130
Dichlorodifluoromethane	2.00	1.65		ug/L		83	70 - 130
Ethylbenzene	2.00	2.26		ug/L		113	70 - 130
Hexachlorobutadiene	2.00	2.06		ug/L		103	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	2.24		ug/L		112	70 - 130
Methylene Chloride	2.00	2.44		ug/L		122	70 - 130
m-Xylene & p-Xylene	4.00	4.42		ug/L		110	70 - 130
Isopropylbenzene	2.00	2.31		ug/L		116	70 - 130
Naphthalene	2.00	2.23		ug/L		111	70 - 130
n-Butylbenzene	2.00	2.31		ug/L		115	70 - 130
N-Propylbenzene	2.00	2.30		ug/L		115	70 - 130
o-Xylene	2.00	2.24		ug/L		112	70 - 130
sec-Butylbenzene	2.00	2.40		ug/L		120	70 - 130
Styrene	2.00	2.20		ug/L		110	70 - 130
tert-Butylbenzene	2.00	2.19		ug/L		110	70 - 130
Tetrachloroethene	2.00	2.33		ug/L		116	70 - 130
Toluene	2.00	2.35		ug/L		118	70 - 130
trans-1,2-Dichloroethene	2.00	2.31		ug/L		115	70 - 130
trans-1,3-Dichloropropene	2.00	2.18		ug/L		109	70 - 130
Trichloroethene	2.00	2.45		ug/L		122	70 - 130
Trichlorofluoromethane	2.00	1.96		ug/L		98	70 - 130
Xylenes, Total	6.00	6.65		ug/L		111	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*122*		*70 - 130*
4-Bromofluorobenzene	*121*		*70 - 130*

Lab Sample ID: LCSD 460-735898/5
Matrix: Water
Analysis Batch: 735898

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	2.29		ug/L		114	70 - 130	0	30
1,1,1-Trichloroethane	2.00	2.16		ug/L		108	70 - 130	6	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-735898/5
Matrix: Water
Analysis Batch: 735898

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	2.00	2.59		ug/L		129	70 - 130	5	30
1,1,2-Trichloroethane	2.00	2.57		ug/L		129	70 - 130	9	30
1,1-Dichloroethane	2.00	2.38		ug/L		119	70 - 130	5	30
1,1-Dichloroethene	2.00	2.11		ug/L		105	70 - 130	9	30
1,1-Dichloropropene	2.00	2.14		ug/L		107	70 - 130	6	30
1,2,3-Trichlorobenzene	2.00	2.24		ug/L		112	70 - 130	3	30
1,2,3-Trichloropropane	2.00	2.34		ug/L		117	70 - 130	9	30
1,2,4-Trichlorobenzene	2.00	2.24		ug/L		112	70 - 130	5	30
1,2,4-Trimethylbenzene	2.00	2.22		ug/L		111	70 - 130	1	30
1,2-Dibromo-3-Chloropropane	2.00	2.23		ug/L		112	70 - 130	6	30
1,2-Dibromoethane	2.00	2.39		ug/L		120	70 - 130	5	30
1,2-Dichlorobenzene	2.00	2.30		ug/L		115	70 - 130	1	30
1,2-Dichloroethane	2.00	2.57		ug/L		128	70 - 130	3	30
1,2-Dichloropropane	2.00	2.59		ug/L		129	70 - 130	1	30
1,3,5-Trimethylbenzene	2.00	2.21		ug/L		110	70 - 130	4	30
1,3-Dichlorobenzene	2.00	2.26		ug/L		113	70 - 130	1	30
1,3-Dichloropropane	2.00	2.52		ug/L		126	70 - 130	3	30
1,4-Dichlorobenzene	2.00	2.25		ug/L		113	70 - 130	1	30
2,2-Dichloropropane	2.00	2.20		ug/L		110	70 - 130	6	30
2-Chlorotoluene	2.00	2.24		ug/L		112	70 - 130	2	30
4-Chlorotoluene	2.00	2.19		ug/L		110	70 - 130	3	30
4-Isopropyltoluene	2.00	2.17		ug/L		108	70 - 130	4	30
Benzene	2.00	2.35		ug/L		118	70 - 130	7	30
Bromobenzene	2.00	2.30		ug/L		115	70 - 130	2	30
Bromochloromethane	2.00	2.47		ug/L		124	70 - 130	2	30
Bromodichloromethane	2.00	2.39		ug/L		120	70 - 130	4	30
Bromoform	2.00	2.25		ug/L		113	70 - 130	1	30
Bromomethane	2.00	1.58		ug/L		79	70 - 130	14	30
Carbon tetrachloride	2.00	2.07		ug/L		103	70 - 130	10	30
Chlorobenzene	2.00	2.23		ug/L		112	70 - 130	4	30
Dibromochloromethane	2.00	2.33		ug/L		117	70 - 130	1	30
Chloroethane	2.00	2.48		ug/L		124	70 - 130	8	30
Vinyl chloride	2.00	2.25		ug/L		113	70 - 130	6	30
Chloroform	2.00	2.32		ug/L		116	70 - 130	4	30
Chloromethane	2.00	2.31		ug/L		116	70 - 130	6	30
cis-1,2-Dichloroethene	2.00	2.37		ug/L		118	70 - 130	5	30
cis-1,3-Dichloropropene	2.00	2.33		ug/L		116	70 - 130	2	30
Dibromomethane	2.00	2.45		ug/L		122	70 - 130	1	30
Dichlorodifluoromethane	2.00	1.53		ug/L		77	70 - 130	8	30
Ethylbenzene	2.00	2.22		ug/L		111	70 - 130	1	30
Hexachlorobutadiene	2.00	2.06		ug/L		103	70 - 130	0	30
Methyl-t-Butyl Ether (MTBE)	2.00	2.36		ug/L		118	70 - 130	5	30
Methylene Chloride	2.00	2.34		ug/L		117	70 - 130	4	30
m-Xylene & p-Xylene	4.00	4.25		ug/L		106	70 - 130	4	30
Isopropylbenzene	2.00	2.20		ug/L		110	70 - 130	5	30
Naphthalene	2.00	2.38		ug/L		119	70 - 130	7	30
n-Butylbenzene	2.00	2.23		ug/L		111	70 - 130	3	30
N-Propylbenzene	2.00	2.23		ug/L		111	70 - 130	3	30
o-Xylene	2.00	2.11		ug/L		105	70 - 130	6	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-735898/5
Matrix: Water
Analysis Batch: 735898

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			2.00	2.31		ug/L		116	70 - 130	4	30
Styrene			2.00	2.18		ug/L		109	70 - 130	1	30
tert-Butylbenzene			2.00	2.08		ug/L		104	70 - 130	5	30
Tetrachloroethene			2.00	2.17		ug/L		109	70 - 130	7	30
Toluene			2.00	2.27		ug/L		113	70 - 130	4	30
trans-1,2-Dichloroethene			2.00	2.16		ug/L		108	70 - 130	7	30
trans-1,3-Dichloropropene			2.00	2.24		ug/L		112	70 - 130	2	30
Trichloroethene			2.00	2.23		ug/L		112	70 - 130	9	30
Trichlorofluoromethane			2.00	1.65		ug/L		82	70 - 130	17	30
Xylenes, Total			6.00	6.36		ug/L		106	70 - 130	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichlorobenzene-d4	*124*		*70 - 130*
4-Bromofluorobenzene	*119*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-487321/1-A ^2
Matrix: Water
Analysis Batch: 487774

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 487321

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		10/30/20 10:27	11/02/20 20:56	2

Lab Sample ID: LCS 160-487321/2-A ^2
Matrix: Water
Analysis Batch: 487774

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 487321

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	191		ug/L		95	82 - 116		

Lab Sample ID: 160-40039-2 MS
Matrix: Water
Analysis Batch: 487774

Client Sample ID: 42469-002
Prep Type: Total/NA
Prep Batch: 487321

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	187		ug/L		93	82 - 116		

Lab Sample ID: 160-40039-2 MSD
Matrix: Water
Analysis Batch: 487774

Client Sample ID: 42469-002
Prep Type: Total/NA
Prep Batch: 487321

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	191		ug/L		95	82 - 116	2	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40039-1
SDG: 42469

GC/MS VOA

Analysis Batch: 735898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40039-1	42469-001	Total/NA	Water	524.2	
160-40039-2	42469-002	Total/NA	Water	524.2	
160-40039-3	42469-003	Total/NA	Water	524.2	
MB 460-735898/9	Method Blank	Total/NA	Water	524.2	
LCS 460-735898/4	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-735898/5	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 487321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40039-2	42469-002	Total/NA	Water	3010A	
MB 160-487321/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-487321/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-40039-2 MS	42469-002	Total/NA	Water	3010A	
160-40039-2 MSD	42469-002	Total/NA	Water	3010A	

Analysis Batch: 487774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40039-2	42469-002	Total/NA	Water	6020A	487321
MB 160-487321/1-A ^2	Method Blank	Total/NA	Water	6020A	487321
LCS 160-487321/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	487321
160-40039-2 MS	42469-002	Total/NA	Water	6020A	487321
160-40039-2 MSD	42469-002	Total/NA	Water	6020A	487321

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40039-1
SDG: 42469

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCZ	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-40039-1	42469-001	115	119
160-40039-2	42469-002	124	120
160-40039-3	42469-003	122	118
LCS 460-735898/4	Lab Control Sample	122	121
LCSD 460-735898/5	Lab Control Sample Dup	124	119
MB 460-735898/9	Method Blank	121	116

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4

BFB = 4-Bromofluorobenzene

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

November 24, 2020

Mr. Larry D. Singh
Brookhaven National Laboratory
Building 462
Upton, New York 11973-5000

Re: Project - OU3 B96
Chain of Custody - 42488
Project Manager -V. RACANIELLO
Account # - 22486
Release # -526093

SDG: 42488

Dear Mr. Singh:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 02, 2020. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4453.

Sincerely,

Meredith Boddiford

Meredith Boddiford for
Edith Kent
Project Manager

Purchase Order: 310464
Chain of Custody: 42488
Enclosures

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Case Narrative

Case Narrative
for
Brookhaven National Laboratory (310464)
SDG: 42488
Work Order: 526093

November 24, 2020

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample Receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on November 02, 2020 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
526093001	42488-001
526093002	42488-002
526093003	42488-003
526093004	42488-004
526093005	42488-005
526093006	42488-006

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: GC/MS Volatile.

Meredith Boddiford

Meredith Boddiford for
Edith Kent
Project Manager

Chain of Custody

524093

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42488

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: ~~Test America~~ GEL
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: ~~13715 Rider Trail N.~~
Acct. No: 22486/23395 Dept: ES	Phone: 631 344 7129	City: ~~Earth City~~ St: ~~MO~~ Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: ~~Ivan Vania~~ EDD Kent
1 E. Kramer	Sampler: S. Sullivan	Phone: ~~314-298-8566~~
2		Email/Fax:
Project Name:	**Project Manager:**	**Field Engineer:**
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD Re Samp Due to Lab error

Type			Sample Information					Additional Sample Information					Analysis Requested										
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium	
001	E	G	095-151	0	10/29/20	0855	W	RTW-1 Influent	40 ML	SC	3	HCL					X						
002	E	G	095-152	0	10/29/20	0900	W	RTW-1 Effluent	40 ML	SC	3	HCL					X						
~~002~~	~~E~~	~~G~~	~~095-152~~	0			W	~~RTW-1 Effluent~~	~~250 ML~~	P	1	~~Hno3~~										X	
003	E	G	095-153	0	10/29/20	0905	W	RTW-2 Influent	40 ML	SC	3	HCL					X						
004	E	G	095-155	0	10/29/20	0910	W	RTW-3 Influent	40 ML	SC	3	HCL					X						
005	E	G	095-157	0	10/29/20	0915	W	RTW-4 Influent	40 ML	SC	3	HCL					X						
006	E	G	TB-1	0	10/29/20	0800	W	Trip Blank	40 ML	SC	3	HCL					X						

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Miller 10/30/20	Print	Print
Signature 1400	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print L. Ames 11/2/20	Print	Print
Signature A. Ames 8:30	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☑ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☑ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

GEL Laboratories LLC

EK

SAMPLE RECEIPT & REVIEW FORM

Client: BRKL	**SDG/AR/COC/Work Order:** 540093
Received By: AJA	**Date Received:** 11/2/20
Carrier and Tracking Number	Circle Applicable: (FedEx Express) FedEx Ground UPS Field Services Courier Other 9096 3585 2344

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr **Classified as: Rad 1 Rad 2 Rad 3**
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: (Wet Ice) Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 5°
4	Daily check performed and passed on IR temperature gun?	✓			**Temperature Device Serial #:** IR4-16 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?			✓	Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	✓			If Yes, are Encores or Soil Kits present for solids? Yes___ No ✓ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ✓ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes ✓ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials CD Date 11/3/20 Page 1 of 1

GL-CHL-SR-001 Rev 7

Work Order Containers

Sample ID: **526093001**
Client Sample ID: **42488−001**
Description: **095−151 Water**

Label: 526093001.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
03−NOV−20 10:27:52	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
03−NOV−20 10:27:52	Patrick Yib	Transfered custody to batch 2058569
05−NOV−20 00:04:01	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 526093001.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
03−NOV−20 10:27:52	Patrick Yib	Transfered custody to batch 2058569
03−NOV−20 10:27:52	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
05−NOV−20 00:04:01	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 526093001.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
03−NOV−20 10:27:52	Patrick Yib	Transfered custody to batch 2058569
03−NOV−20 10:27:52	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
05−NOV−20 00:04:01	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Sample ID: **526093002**
Client Sample ID: **42488−002**
Description: **095−152 Water**

Label: 526093002.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
03−NOV−20 10:27:52	Patrick Yib	Transfered custody to batch 2058569
03−NOV−20 10:27:52	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
05−NOV−20 00:04:01	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 526093002.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
14−NOV−20 12:34:07	Kelle Bellamy	Changed sample location from Volatiles Cooler to Non−Rad Voa Vials5

Label: 526093002.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
14−NOV−20 12:34:07	Kelle Bellamy	Changed sample location from Volatiles Cooler to Non−Rad Voa Vials5

Work Order Containers

Sample ID: **526093003**
Client Sample ID: **42488−003**
Description: **095−153 Water**

Label: 526093003.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
03−NOV−20 10:27:52	Patrick Yib	Transfered custody to batch 2058569
03−NOV−20 10:27:52	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
05−NOV−20 00:04:01	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 526093003.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
14−NOV−20 12:34:07	Kelle Bellamy	Changed sample location from Volatiles Cooler to Non−Rad Voa Vials5

Label: 526093003.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
14−NOV−20 12:34:07	Kelle Bellamy	Changed sample location from Volatiles Cooler to Non−Rad Voa Vials5

Sample ID: **526093004**
Client Sample ID: **42488−004**
Description: **095−155 Water**

Label: 526093004.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
03−NOV−20 10:27:52	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
03−NOV−20 10:27:52	Patrick Yib	Transfered custody to batch 2058569
05−NOV−20 00:04:01	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 526093004.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
14−NOV−20 12:34:07	Kelle Bellamy	Changed sample location from Volatiles Cooler to Non−Rad Voa Vials5

Label: 526093004.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
14−NOV−20 12:34:07	Kelle Bellamy	Changed sample location from Volatiles Cooler to Non−Rad Voa Vials5

Work Order Containers

Sample ID: **526093005**
Client Sample ID: **42488−005**
Description: **095−157 Water**

Label: 526093005.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
03−NOV−20 10:27:52	Patrick Yib	Transfered custody to batch 2058569
03−NOV−20 10:27:52	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
05−NOV−20 00:04:01	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 526093005.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
14−NOV−20 12:34:07	Kelle Bellamy	Changed sample location from Volatiles Cooler to Non−Rad Voa Vials5

Label: 526093005.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
14−NOV−20 12:34:07	Kelle Bellamy	Changed sample location from Volatiles Cooler to Non−Rad Voa Vials5

Sample ID: **526093006**
Client Sample ID: **42488−006**
Description: **TB−1 Water**

Label: 526093006.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
03−NOV−20 10:27:52	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
03−NOV−20 10:27:52	Patrick Yib	Transfered custody to batch 2058569
05−NOV−20 00:04:01	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 526093006.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
14−NOV−20 12:34:07	Kelle Bellamy	Changed sample location from Volatiles Cooler to Non−Rad Voa Vials5

Label: 526093006.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2, 4C**

02−NOV−20 10:08:20	Alexandra Almers	Changed sample location from Barcode Generated to Volatiles Cooler
14−NOV−20 12:34:07	Kelle Bellamy	Changed sample location from Volatiles Cooler to Non−Rad Voa Vials5

Data Review Qualifier Definitions

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 24−NOV−20

Project Specific Qualifier Definitions for GEL Client Code: BRKL

Qualifier	Qualifier Definition	Department	Fraction
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.		
J	Value is estimated		
P	Organics−−The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.	Organics	
C	Analyte has been confirmed by GC/MS analysis	Organics	Pesticide
B	The target analyte was detected in the associated blank.	Organics	
E	Concentration of the target analyte exceeds the instrument calibration range	Organics	
A	The TIC is a suspected aldol−condensation product	Organics	Semi−Volatile
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
N	Metals−−The Matrix spike sample recovery is not within specified control limits	Inorganics	
*	A quality control analyte recovery is outside of specified acceptance criteria		
N	Organics−−Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor	Organics	Semi−Volatile
H	Analytical holding time was exceeded		
**	Analyte is a surrogate compound	Organics	
<	Result is less than value reported		
>	Result is greater than value reported		
UI	Gamma Spectroscopy−−Uncertain identification	Radiological	
BD	Results are either below the MDC or tracer recovery is low	Radiological	
h	Preparation or preservation holding time was exceeded		
R	Sample results are rejected		
Z	Paint Filter Test−−Particulates passed through the filter, however no free liquids were observed.	General Chemistry	General Chem
d	5−day BOD−−The 2:1 depletion requirement was not met for this sample	General Chemistry	
B	Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL	Inorganics	Metals
^	RPD of sample and duplicate evaluated using +/−RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.		
D	Results are reported from a diluted aliquot of the sample	Organics	
N/A	RPD or %Recovery limits do not apply.		
ND	Analyte concentration is not detected above the detection limit		
E	%difference of sample and SD is >10%. Sample concentration must meet flagging criteria	Inorganics	Metals
M	M if above MDC and less than LLD	Radiological	
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
FA	Failed analysis.	Radiological	Bioassay
E	General Chemistry−−Concentration of the target analyte exceeds the instrument calibration range	General Chemistry	General Chem
JNX	Non Calibrated Compound	Organics	Volatile
UJ	Compound cannot be extracted	Organics	Semi−Volatile

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 24−NOV−20

Project Specific Qualifier Definitions for GEL Client Code: BRKL

Qualifier	Qualifier Definition	Department	Fraction
UJ	Gamma Spectroscopy−−Uncertain identification	Radiological	Rad
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.		
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.	Radiological	
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.	Radiological	
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.	Radiological	
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies	Inorganics	Metals
N1	See case narrative		
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.	Inorganics	
Y	QC Samples were not spiked with this compound	Organics	
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.	General Chemistry	General Chem
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.	Radiological	Rad
**	Analyte is a Tracer compound	Radiological	
B	The target analyte was detected in the associated blank.	General Chemistry	
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor	Organics	Volatile
e	5−day BOD−−Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes	General Chemistry	General Chem
M	REMP Result > MDC/CL and < RDL	Radiological	
J	See case narrative for an explanation		

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Laboratory Certifications

List of current GEL Certifications as of 24 November 2020

State	Certification
Alabama	42200
Alaska	17−018
Alaska Drinking Water	SC00012
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M−SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122021−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	2019−165
Pennsylvania NELAP	68−00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−20−17
Utah NELAP	SC000122020−33
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Volatile Analysis

Case Narrative

GC/MS Volatile
Technical Case Narrative
Brookhaven National Laboratory
SDG #: 42488
Work Order #: 526093

Product: **Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometer Applicable to EPA Method 524.2**
Analytical Method: EPA 524.2
Analytical Procedure: GL-OA-E-022 REV# 14
Analytical Batch: 2058569

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
526093001	42488-001 095-151
526093002	42488-002 095-152
526093003	42488-003 095-153
526093004	42488-004 095-155
526093005	42488-005 095-157
526093006	42488-006 TB-1
1204684928	Method Blank (MB)
1204684929	Laboratory Control Sample (LCS)
1204684930	526093001(42488-001) Post Spike (PS)
1204684931	526093001(42488-001) Post Spike Duplicate (PSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Blank (MB) Statement
Target analytes were detected in the blank 1204684928 (MB) below the reporting limit.

Matrix Spike/Matrix Spike Duplicate Recovery Statement
The spike and/or spike duplicate (See Below) recoveries were not all within the acceptance limits. The associated spike and/or spike duplicate passed recoveries near the lower/upper end of the limits.

Sample	Analyte	Value
1204684930 (42488-001PS)	Methylene chloride	132* (70%-130%)
1204684931 (42488-001PSD)	1, 1-Dichloroethylene	132* (70%-130%)
	Chloromethane	134* (70%-130%)
	Dichlorodifluoromethane	153* (70%-130%)
	Methylene chloride	141* (70%-130%)
	Trichlorofluoromethane	137* (70%-130%)

Relative Percent Difference (RPD) Statement
The RPD between the matrix spike pair (See Below) were not all within the acceptance limits. The unacceptable RPD may be attributed to matrix interference and/or sample non-homogeneity.

Sample	Analyte	Value
1204684930PS and 1204684931PSD (42488-001)	Dichlorodifluoromethane	RPD 21* (0%-20%)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

BRKL007 Brookhaven National Laboratory (310464)

Client SDG: 42488 GEL Work Order: 526093

The Qualifiers in this report are defined as follows:

B Analyte found in the blank as well as the sample.
J Estimated value, the analyte concentration fell above the effective MDL and below the effective PQL.
U The analyte was analyzed for but not detected below the MDL.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Erin Haubert **Name: Erin Haubert**

Date: 30 NOV 2020 **Title: Data Validator**

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 08:55**	**Matrix:**	**W**
Lab Sample ID:	**526093001**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**095-151**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-001**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 11:38**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 11:38**				
Data File:	**110320V8\8D206.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
75-69-4	Trichlorofluoromethane	J	0.400	ug/L	0.300	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
67-66-3	Chloroform		0.570	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		3.86	ug/L	0.167	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 08:55**	**Matrix:**	**W**
Lab Sample ID:	**526093001**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**095-151**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-001**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 11:38**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 11:38**				
Data File:	**110320V8\8D206.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 09:00**	**Matrix:**	**W**
Lab Sample ID:	**526093002**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**095-152**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-002**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 12:08**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 12:08**				
Data File:	**110320V8\8D207.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 09:00**	**Matrix:**	**W**
Lab Sample ID:	**526093002**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**095-152**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-002**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 12:08**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 12:08**				
Data File:	**110320V8\8D207.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 09:05**	**Matrix:**	**W**
Lab Sample ID:	**526093003**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**095-153**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-003**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 12:40**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 12:40**				
Data File:	**110320V8\8D208.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
75-69-4	Trichlorofluoromethane		1.85	ug/L	0.300	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
67-66-3	Chloroform	J	0.470	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	J	0.230	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	J	0.320	ug/L	0.167	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	J	0.170	ug/L	0.167	1.00	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 09:05**	**Matrix:**	**W**
Lab Sample ID:	**526093003**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**095-153**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-003**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 12:40**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 12:40**				
Data File:	**110320V8\8D208.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 09:10**	**Matrix:**	**W**
Lab Sample ID:	**526093004**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**095-155**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-004**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 13:11**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 13:11**				
Data File:	**110320V8\8D209.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
67-66-3	Chloroform		0.720	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	J	0.190	ug/L	0.167	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 09:10**	**Matrix:**	**W**
Lab Sample ID:	**526093004**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**095-155**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-004**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 13:11**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 13:11**				
Data File:	**110320V8\8D209.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 09:15**	**Matrix:**	**W**
Lab Sample ID:	**526093005**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**095-157**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-005**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 13:43**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 13:43**				
Data File:	**110320V8\8D210.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
67-66-3	Chloroform		0.690	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 09:15**	**Matrix:**	**W**
Lab Sample ID:	**526093005**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**095-157**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-005**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 13:43**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 13:43**				
Data File:	**110320V8\8D210.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 08:00**	**Matrix:**	**W**
Lab Sample ID:	**526093006**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**TB-1**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-006**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 14:14**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 14:14**				
Data File:	**110320V8\8D211.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 08:00**	**Matrix:**	**W**
Lab Sample ID:	**526093006**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**TB-1**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-006**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 14:14**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 14:14**				
Data File:	**110320V8\8D211.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500

Quality Control Summary

Volatile

Surrogate Recovery Report

SDG Number: 42488

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1204684929	LCS for batch 2058569	99	101	98
1204684928	MB for batch 2058569	102	100	100
526093001	42488-001	103	99	101
526093002	42488-002	106	100	100
526093003	42488-003	105	100	101
526093004	42488-004	103	97	99
526093005	42488-005	108	99	103
526093006	42488-006	107	97	100
1204684930	42488-001PS	105	102	95
1204684931	42488-001PSD	109	99	95

Surrogate		Parmname	Acceptance Limits
DCED4	=	1,2-Dichloroethane-d4	(70%-130%)
TOL	=	Toluene-d8	(70%-130%)
BFB	=	Bromofluorobenzene	(70%-130%)

* Recovery outside Acceptance Limits

\# Column to be used to flag recovery values

D Sample Diluted

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 42488
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 2058569
Matrix: WATER
Lab Sample ID 1204684929
Instrument: VOA8.I
Analysis Date: 11/03/2020 10:04
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 2058569

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	20.0	0.0	18.6	93	70-130
74-87-3	LCS	Chloromethane	20.0	0.0	20.0	100	70-130
75-01-4	LCS	Vinyl chloride	20.0	0.0	18.3	92	70-130
74-83-9	LCS	Bromomethane	20.0	0.0	20.6	103	70-130
75-00-3	LCS	Chloroethane	20.0	0.0	17.5	88	70-130
75-69-4	LCS	Trichlorofluoromethane	20.0	0.0	19.5	97	70-130
75-35-4	LCS	1,1-Dichloroethylene	20.0	0.0	17.9	90	70-130
75-09-2	LCS	Methylene chloride	20.0	0.0	18.3	92	70-130
1634-04-4	LCS	tert-Butyl methyl ether	20.0	0.0	17.6	88	70-130
156-60-5	LCS	trans-1,2-Dichloroethylene	20.0	0.0	16.9	84	70-130
75-34-3	LCS	1,1-Dichloroethane	20.0	0.0	19.5	98	70-130
156-59-2	LCS	cis-1,2-Dichloroethylene	20.0	0.0	17.3	87	70-130
594-20-7	LCS	2,2-Dichloropropane	20.0	0.0	17.5	88	70-130
74-97-5	LCS	Bromochloromethane	20.0	0.0	18.3	91	70-130
67-66-3	LCS	Chloroform	20.0	0.0	18.0	90	70-130
71-55-6	LCS	1,1,1-Trichloroethane	20.0	0.0	18.4	92	70-130
563-58-6	LCS	1,1-Dichloropropene	20.0	0.0	17.8	89	70-130
56-23-5	LCS	Carbon tetrachloride	20.0	0.0	18.0	90	70-130
107-06-2	LCS	1,2-Dichloroethane	20.0	0.0	17.6	88	70-130
71-43-2	LCS	Benzene	20.0	0.0	18.3	91	70-130
79-01-6	LCS	Trichloroethylene	20.0	0.0	17.9	89	70-130
78-87-5	LCS	1,2-Dichloropropane	20.0	0.0	19.7	98	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 42488
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 2058569
Matrix: WATER
Lab Sample ID 1204684929
Instrument: VOA8.I
Analysis Date: 11/03/2020 10:04
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 2058569

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
74-95-3	LCS	Dibromomethane	20.0	0.0	18.5	93	70-130
75-27-4	LCS	Bromodichloromethane	20.0	0.0	17.9	90	70-130
10061-01-5	LCS	cis-1,3-Dichloropropylene	20.0	0.0	19.0	95	70-130
108-88-3	LCS	Toluene	20.0	0.0	18.4	92	70-130
10061-02-6	LCS	trans-1,3-Dichloropropylene	20.0	0.0	18.5	93	70-130
79-00-5	LCS	1,1,2-Trichloroethane	20.0	0.0	18.3	92	70-130
142-28-9	LCS	1,3-Dichloropropane	20.0	0.0	19.1	95	70-130
127-18-4	LCS	Tetrachloroethylene	20.0	0.0	17.7	88	70-130
124-48-1	LCS	Dibromochloromethane	20.0	0.0	18.4	92	70-130
106-93-4	LCS	1,2-Dibromoethane	20.0	0.0	18.0	90	70-130
108-90-7	LCS	Chlorobenzene	20.0	0.0	18.2	91	70-130
100-41-4	LCS	Ethylbenzene	20.0	0.0	18.6	93	70-130
95-47-6	LCS	o-Xylene	20.0	0.0	18.0	90	70-130
100-42-5	LCS	Styrene	20.0	0.0	18.7	93	70-130
75-25-2	LCS	Bromoform	20.0	0.0	17.4	87	70-130
98-82-8	LCS	Isopropylbenzene	20.0	0.0	18.6	93	70-130
79-34-5	LCS	1,1,2,2-Tetrachloroethane	20.0	0.0	18.7	94	70-130
96-18-4	LCS	1,2,3-Trichloropropane	20.0	0.0	18.1	91	70-130
108-86-1	LCS	Bromobenzene	20.0	0.0	17.8	89	70-130
103-65-1	LCS	n-Propylbenzene	20.0	0.0	18.1	91	70-130
108-67-8	LCS	1,3,5-Trimethylbenzene	20.0	0.0	17.6	88	70-130
95-49-8	LCS	2-Chlorotoluene	20.0	0.0	19.3	97	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 42488
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 2058569
Matrix: WATER
Lab Sample ID 1204684929
Instrument: VOA8.I
Analysis Date: 11/03/2020 10:04
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 2058569

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
106-43-4	LCS	4-Chlorotoluene	20.0	0.0	17.6	88	70-130
98-06-6	LCS	tert-Butylbenzene	20.0	0.0	17.7	88	70-130
95-63-6	LCS	1,2,4-Trimethylbenzene	20.0	0.0	17.4	87	70-130
135-98-8	LCS	sec-Butylbenzene	20.0	0.0	18.6	93	70-130
99-87-6	LCS	4-Isopropyltoluene	20.0	0.0	17.8	89	70-130
541-73-1	LCS	1,3-Dichlorobenzene	20.0	0.0	18.3	91	70-130
106-46-7	LCS	1,4-Dichlorobenzene	20.0	0.0	17.4	87	70-130
104-51-8	LCS	n-Butylbenzene	20.0	0.0	17.8	89	70-130
96-12-8	LCS	1,2-Dibromo-3-chloropropane	20.0	0.0	17.1	85	70-130
87-68-3	LCS	Hexachlorobutadiene	20.0	0.0	17.5	88	70-130
91-20-3	LCS	Naphthalene	20.0	0.0	18.8	94	70-130
87-61-6	LCS	1,2,3-Trichlorobenzene	20.0	0.0	18.1	91	70-130
120-82-1	LCS	1,2,4-Trichlorobenzene	20.0	0.0	17.8	89	70-130
630-20-6	LCS	1,1,1,2-Tetrachloroethane	20.0	0.0	18.1	91	70-130
95-50-1	LCS	1,2-Dichlorobenzene	20.0	0.0	18.2	91	70-130
179601-23-1	LCS	m,p-Xylenes	40.0	0.0	37.3	93	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 42488
Sample Type: Post Spike
Client ID: 42488-001PS
Matrix: W
Lab Sample ID 1204684930
Instrument: VOA8.I
Analysis Date: 11/03/2020 19:28
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 2058569

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
75-69-4	PS	Trichlorofluoromethane	20.0	0.400	J	26.4	130	70-130
75-71-8	PS	Dichlorodifluoromethane	20.0	0.000	U	24.8	124	70-130
74-87-3	PS	Chloromethane	20.0	0.000	U	21.9	110	70-130
75-01-4	PS	Vinyl chloride	20.0	0.000	U	21.7	108	70-130
74-83-9	PS	Bromomethane	20.0	0.000	U	21.8	109	70-130
75-00-3	PS	Chloroethane	20.0	0.000	U	20.8	104	70-130
75-35-4	PS	1,1-Dichloroethylene	20.0	0.000	U	25.7	129	70-130
75-09-2	PS	Methylene chloride	20.0	0.000	U	26.4	132 *	70-130
1634-04-4	PS	tert-Butyl methyl ether	20.0	0.000	U	22.8	114	70-130
156-60-5	PS	trans-1,2-Dichloroethylene	20.0	0.000	U	22.3	111	70-130
75-34-3	PS	1,1-Dichloroethane	20.0	0.000	U	24.0	120	70-130
156-59-2	PS	cis-1,2-Dichloroethylene	20.0	0.000	U	20.0	100	70-130
594-20-7	PS	2,2-Dichloropropane	20.0	0.000	U	16.7	84	70-130
74-97-5	PS	Bromochloromethane	20.0	0.000	U	20.4	102	70-130
71-55-6	PS	1,1,1-Trichloroethane	20.0	0.000	U	21.7	108	70-130
563-58-6	PS	1,1-Dichloropropene	20.0	0.000	U	21.3	107	70-130
56-23-5	PS	Carbon tetrachloride	20.0	0.000	U	22.1	110	70-130
107-06-2	PS	1,2-Dichloroethane	20.0	0.000	U	23.3	117	70-130
71-43-2	PS	Benzene	20.0	0.000	U	21.2	106	70-130
79-01-6	PS	Trichloroethylene	20.0	0.000	U	21.3	106	70-130
78-87-5	PS	1,2-Dichloropropane	20.0	0.000	U	24.5	122	70-130
74-95-3	PS	Dibromomethane	20.0	0.000	U	22.6	113	70-130

Quality Control Summary
Spike Recovery Report

SDG Number: **42488**
Sample Type: **Post Spike**
Client ID: **42488-001PS**
Matrix: **W**
Lab Sample ID **1204684930**
Instrument: **VOA8.I**
Analysis Date: **11/03/2020 19:28**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **2058569**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
75-27-4	PS	Bromodichloromethane	20.0	0.000	U	20.9	105	70-130
10061-01-5	PS	cis-1,3-Dichloropropylene	20.0	0.000	U	21.0	105	70-130
108-88-3	PS	Toluene	20.0	0.000	U	22.2	111	70-130
10061-02-6	PS	trans-1,3-Dichloropropylene	20.0	0.000	U	21.6	108	70-130
79-00-5	PS	1,1,2-Trichloroethane	20.0	0.000	U	23.7	118	70-130
142-28-9	PS	1,3-Dichloropropane	20.0	0.000	U	24.4	122	70-130
124-48-1	PS	Dibromochloromethane	20.0	0.000	U	21.1	105	70-130
106-93-4	PS	1,2-Dibromoethane	20.0	0.000	U	21.9	109	70-130
108-90-7	PS	Chlorobenzene	20.0	0.000	U	22.1	110	70-130
100-41-4	PS	Ethylbenzene	20.0	0.000	U	23.8	119	70-130
95-47-6	PS	o-Xylene	20.0	0.000	U	23.5	118	70-130
100-42-5	PS	Styrene	20.0	0.000	U	23.5	118	70-130
75-25-2	PS	Bromoform	20.0	0.000	U	18.8	94	70-130
98-82-8	PS	Isopropylbenzene	20.0	0.000	U	20.8	104	70-130
79-34-5	PS	1,1,2,2-Tetrachloroethane	20.0	0.000	U	24.3	121	70-130
96-18-4	PS	1,2,3-Trichloropropane	20.0	0.000	U	22.6	113	70-130
108-86-1	PS	Bromobenzene	20.0	0.000	U	20.2	101	70-130
103-65-1	PS	n-Propylbenzene	20.0	0.000	U	21.4	107	70-130
108-67-8	PS	1,3,5-Trimethylbenzene	20.0	0.000	U	20.2	101	70-130
95-49-8	PS	2-Chlorotoluene	20.0	0.000	U	21.7	108	70-130
106-43-4	PS	4-Chlorotoluene	20.0	0.000	U	21.5	107	70-130
98-06-6	PS	tert-Butylbenzene	20.0	0.000	U	20.2	101	70-130

Quality Control Summary
Spike Recovery Report

SDG Number: **42488**
Sample Type: **Post Spike**
Client ID: **42488-001PS**
Matrix: **W**
Lab Sample ID **1204684930**
Instrument: **VOA8.I**
Analysis Date: **11/03/2020 19:28**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **2058569**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
95-63-6	PS	1,2,4-Trimethylbenzene	20.0	0.000	U	20.0	100	70-130
135-98-8	PS	sec-Butylbenzene	20.0	0.000	U	21.7	109	70-130
99-87-6	PS	4-Isopropyltoluene	20.0	0.000	U	20.0	100	70-130
541-73-1	PS	1,3-Dichlorobenzene	20.0	0.000	U	22.0	110	70-130
106-46-7	PS	1,4-Dichlorobenzene	20.0	0.000	U	21.3	106	70-130
104-51-8	PS	n-Butylbenzene	20.0	0.000	U	20.4	102	70-130
96-12-8	PS	1,2-Dibromo-3-chloropropane	20.0	0.000	U	21.1	105	70-130
87-68-3	PS	Hexachlorobutadiene	20.0	0.000	U	17.6	88	70-130
91-20-3	PS	Naphthalene	20.0	0.000	U	22.2	111	70-130
87-61-6	PS	1,2,3-Trichlorobenzene	20.0	0.000	U	20.1	101	70-130
120-82-1	PS	1,2,4-Trichlorobenzene	20.0	0.000	U	19.0	95	70-130
630-20-6	PS	1,1,1,2-Tetrachloroethane	20.0	0.000	U	22.0	110	70-130
95-50-1	PS	1,2-Dichlorobenzene	20.0	0.000	U	22.2	111	70-130
67-66-3	PS	Chloroform	20.0	0.570		22.3	109	70-130
127-18-4	PS	Tetrachloroethylene	20.0	3.86		23.6	99	70-130
179601-23-1	PS	m,p-Xylenes	40.0	0.000	U	45.8	115	70-130

Quality Control Summary
Spike Recovery Report

SDG Number: **42488**
Sample Type: **Post Spike Duplicate**
Client ID: **42488-001PSD**
Matrix: **W**
Lab Sample ID **1204684931**
Instrument: **VOA8.I**
Analysis Date: **11/03/2020 19:59**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **2058569**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
75-69-4	PSD	Trichlorofluoromethane	20.0	0.400	J	27.9	137 *	70-130	5	0-20
75-71-8	PSD	Dichlorodifluoromethane	20.0	0.000	U	30.7	153 *	70-130	21 *	0-20
74-87-3	PSD	Chloromethane	20.0	0.000	U	26.8	134 *	70-130	20	0-20
75-01-4	PSD	Vinyl chloride	20.0	0.000	U	25.8	129	70-130	17	0-20
74-83-9	PSD	Bromomethane	20.0	0.000	U	24.8	124	70-130	13	0-20
75-00-3	PSD	Chloroethane	20.0	0.000	U	23.2	116	70-130	11	0-20
75-35-4	PSD	1,1-Dichloroethylene	20.0	0.000	U	26.5	132 *	70-130	3	0-20
75-09-2	PSD	Methylene chloride	20.0	0.000	U	28.2	141 *	70-130	7	0-20
1634-04-4	PSD	tert-Butyl methyl ether	20.0	0.000	U	23.6	118	70-130	4	0-20
156-60-5	PSD	trans-1,2-Dichloroethylene	20.0	0.000	U	22.8	114	70-130	2	0-20
75-34-3	PSD	1,1-Dichloroethane	20.0	0.000	U	24.3	122	70-130	1	0-20
156-59-2	PSD	cis-1,2-Dichloroethylene	20.0	0.000	U	20.6	103	70-130	3	0-20
594-20-7	PSD	2,2-Dichloropropane	20.0	0.000	U	17.0	85	70-130	2	0-20
74-97-5	PSD	Bromochloromethane	20.0	0.000	U	20.6	103	70-130	1	0-20
71-55-6	PSD	1,1,1-Trichloroethane	20.0	0.000	U	22.1	111	70-130	2	0-20
563-58-6	PSD	1,1-Dichloropropene	20.0	0.000	U	21.4	107	70-130	1	0-20
56-23-5	PSD	Carbon tetrachloride	20.0	0.000	U	22.4	112	70-130	2	0-20
107-06-2	PSD	1,2-Dichloroethane	20.0	0.000	U	22.8	114	70-130	2	0-20
71-43-2	PSD	Benzene	20.0	0.000	U	21.7	109	70-130	3	0-20
79-01-6	PSD	Trichloroethylene	20.0	0.000	U	21.5	108	70-130	1	0-20
78-87-5	PSD	1,2-Dichloropropane	20.0	0.000	U	24.8	124	70-130	1	0-20
74-95-3	PSD	Dibromomethane	20.0	0.000	U	23.1	116	70-130	2	0-20

Quality Control Summary
Spike Recovery Report

SDG Number: 42488
Sample Type: Post Spike Duplicate
Client ID: 42488-001PSD
Matrix: W
Lab Sample ID 1204684931
Instrument: VOA8.I
Analysis Date: 11/03/2020 19:59
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 2058569

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
75-27-4	PSD	Bromodichloromethane	20.0	0.000	U	21.3	106	70-130	2	0-20
10061-01-5	PSD	cis-1,3-Dichloropropylene	20.0	0.000	U	21.5	108	70-130	2	0-20
108-88-3	PSD	Toluene	20.0	0.000	U	21.5	107	70-130	3	0-20
10061-02-6	PSD	trans-1,3-Dichloropropylene	20.0	0.000	U	20.8	104	70-130	4	0-20
79-00-5	PSD	1,1,2-Trichloroethane	20.0	0.000	U	22.1	110	70-130	7	0-20
142-28-9	PSD	1,3-Dichloropropane	20.0	0.000	U	23.6	118	70-130	3	0-20
124-48-1	PSD	Dibromochloromethane	20.0	0.000	U	20.1	100	70-130	5	0-20
106-93-4	PSD	1,2-Dibromoethane	20.0	0.000	U	21.0	105	70-130	4	0-20
108-90-7	PSD	Chlorobenzene	20.0	0.000	U	21.2	106	70-130	4	0-20
100-41-4	PSD	Ethylbenzene	20.0	0.000	U	22.7	113	70-130	5	0-20
95-47-6	PSD	o-Xylene	20.0	0.000	U	22.4	112	70-130	5	0-20
100-42-5	PSD	Styrene	20.0	0.000	U	22.4	112	70-130	5	0-20
75-25-2	PSD	Bromoform	20.0	0.000	U	18.5	92	70-130	2	0-20
98-82-8	PSD	Isopropylbenzene	20.0	0.000	U	20.3	101	70-130	3	0-20
79-34-5	PSD	1,1,2,2-Tetrachloroethane	20.0	0.000	U	23.1	115	70-130	5	0-20
96-18-4	PSD	1,2,3-Trichloropropane	20.0	0.000	U	22.0	110	70-130	3	0-20
108-86-1	PSD	Bromobenzene	20.0	0.000	U	19.4	97	70-130	4	0-20
103-65-1	PSD	n-Propylbenzene	20.0	0.000	U	21.1	106	70-130	1	0-20
108-67-8	PSD	1,3,5-Trimethylbenzene	20.0	0.000	U	20.0	100	70-130	1	0-20
95-49-8	PSD	2-Chlorotoluene	20.0	0.000	U	21.5	107	70-130	1	0-20
106-43-4	PSD	4-Chlorotoluene	20.0	0.000	U	20.9	104	70-130	3	0-20
98-06-6	PSD	tert-Butylbenzene	20.0	0.000	U	20.1	100	70-130	0	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 42488 **Sample Type:** Post Spike Duplicate

Client ID: 42488-001PSD **Matrix:** W

Lab Sample ID 1204684931

Instrument: VOA8.I **Analysis Date:** 11/03/2020 19:59 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 2058569

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
95-63-6	PSD	1,2,4-Trimethylbenzene	20.0	0.000	U	19.5	97	70-130	3	0-20
135-98-8	PSD	sec-Butylbenzene	20.0	0.000	U	21.4	107	70-130	1	0-20
99-87-6	PSD	4-Isopropyltoluene	20.0	0.000	U	19.9	99	70-130	1	0-20
541-73-1	PSD	1,3-Dichlorobenzene	20.0	0.000	U	21.5	107	70-130	2	0-20
106-46-7	PSD	1,4-Dichlorobenzene	20.0	0.000	U	20.8	104	70-130	2	0-20
104-51-8	PSD	n-Butylbenzene	20.0	0.000	U	20.2	101	70-130	1	0-20
96-12-8	PSD	1,2-Dibromo-3-chloropropane	20.0	0.000	U	20.5	102	70-130	3	0-20
87-68-3	PSD	Hexachlorobutadiene	20.0	0.000	U	18.0	90	70-130	2	0-20
91-20-3	PSD	Naphthalene	20.0	0.000	U	21.8	109	70-130	2	0-20
87-61-6	PSD	1,2,3-Trichlorobenzene	20.0	0.000	U	19.7	98	70-130	2	0-20
120-82-1	PSD	1,2,4-Trichlorobenzene	20.0	0.000	U	18.9	94	70-130	1	0-20
630-20-6	PSD	1,1,1,2-Tetrachloroethane	20.0	0.000	U	20.4	102	70-130	8	0-20
95-50-1	PSD	1,2-Dichlorobenzene	20.0	0.000	U	21.9	109	70-130	2	0-20
67-66-3	PSD	Chloroform	20.0	0.570		22.5	110	70-130	1	0-20
127-18-4	PSD	Tetrachloroethylene	20.0	3.86		23.6	99	70-130	0	0-20
179601-23-1	PSD	m,p-Xylenes	40.0	0.000	U	44.3	111	70-130	3	0-20

Method Blank Summary

SDG Number:	**42488**	**Client:**	**BRKL007**	**Matrix:**	**WATER**
Client ID:	**MB for batch 2058569**	**Instrument ID:**	**VOA8.I**	**Data File:**	**110320V8\8D205B.D**
Lab Sample ID:	**1204684928**	**Prep Date:**	**11/03/2020 11:06**	**Analyzed:**	**11/03/20 11:06**
Column:	**DB-624**				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 2058569	1204684929	110320V8\8D203B.D	11/03/20	1004
02	42488-001	526093001	110320V8\8D206.D	11/03/20	1138
03	42488-002	526093002	110320V8\8D207.D	11/03/20	1208
04	42488-003	526093003	110320V8\8D208.D	11/03/20	1240
05	42488-004	526093004	110320V8\8D209.D	11/03/20	1311
06	42488-005	526093005	110320V8\8D210.D	11/03/20	1343
07	42488-006	526093006	110320V8\8D211.D	11/03/20	1414
08	42488-001PS	1204684930	110320V8\8D221.D	11/03/20	1928
09	42488-001PSD	1204684931	110320V8\8D222.D	11/03/20	1959

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 42488

Instrument ID: VOA8.I **Injection Date/Time:** 29-OCT-20 10:32

Column Description: DB-624 **Lab File ID** 102920V8\8C401.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	24.6
75	30.0 - 60.0% of mass 95	59.9
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.5
174	50.0 - 100.0% of mass 95	75.9
175	5.0 -9.0% of mass 174	7.2
176	95.0 - 101.0% of mass 174	96.5
177	5.0 - 9.0% of mass 176	6.9

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
ICALMIX[A]	W8VM201029-01	102920V8\8C402.D	29-OCT-20 11:03
ICALMIX[A]	W8VM201029-02	102920V8\8C403.D	29-OCT-20 11:35
ICALMIX[A]	W8VM201029-03	102920V8\8C404.D	29-OCT-20 12:06
ICALMIX[A]	W8VM201029-04	102920V8\8C405.D	29-OCT-20 12:37
ICALMIX[A]	W8VM201029-05	102920V8\8C406.D	29-OCT-20 13:09
ICALMIX[A]	W8VM201029-06	102920V8\8C407.D	29-OCT-20 13:40
ICALMIX[A]	W8VM201029-07	102920V8\8C408.D	29-OCT-20 14:11

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 42488

Instrument ID: VOA8.I **Injection Date/Time:** 03-NOV-20 09:02

Column Description: DB-624 **Lab File ID** 110320V8\8D201.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	27.3
75	30.0 - 60.0% of mass 95	59.6
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	7.7
173	Less than 2.0% of mass 174	0
174	50.0 - 100.0% of mass 95	62.9
175	5.0 -9.0% of mass 174	6.8
176	95.0 - 101.0% of mass 174	98.9
177	5.0 - 9.0% of mass 176	6.2

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCVMIX[A]01	W8VM201103-01	110320V8\8D202.D	03-NOV-20 09:33
BLK01LCS	1204684929	110320V8\8D203B.D	03-NOV-20 10:04
BLK01	1204684928	110320V8\8D205B.D	03-NOV-20 11:06
42488-001	526093001	110320V8\8D206.D	03-NOV-20 11:38
42488-002	526093002	110320V8\8D207.D	03-NOV-20 12:08
42488-003	526093003	110320V8\8D208.D	03-NOV-20 12:40
42488-004	526093004	110320V8\8D209.D	03-NOV-20 13:11
42488-005	526093005	110320V8\8D210.D	03-NOV-20 13:43
42488-006	526093006	110320V8\8D211.D	03-NOV-20 14:14
42488-001MS	1204684930	110320V8\8D221.D	03-NOV-20 19:28
42488-001MSD	1204684931	110320V8\8D222.D	03-NOV-20 19:59

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 42488

Instrument: VOA8.I

STD Analysis Time: 03-NOV-20 09:33

GC Column: DB-624

Data File: 110320V8\8D202.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	790569	11.0	620516	14.2	412661	16.7
Upper Limit	1581138	11.5	1241032	14.7	825322	17.2
Lower Limit	395285	10.5	310258	13.7	206331	16.2
Sample ID						
BLK01LCS	744368	11.0	598968	14.2	400022	16.7
BLK01	692568	11.0	563067	14.2	364074	16.8
42488-001	671551	11.0	554567	14.2	357916	16.7
42488-002	627736	11.0	522616	14.2	339119	16.8
42488-003	623322	11.0	513706	14.2	330431	16.8
42488-004	592449	11.0	496045	14.2	320064	16.7
42488-005	585715	11.0	479468	14.2	300279	16.8
42488-006	544354	11.0	466753	14.2	302343	16.8
42488-001MS	507216	11.0	409798	14.2	307660	16.7
42488-001MSD	530918	11.0	449507	14.2	326041	16.7

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Standards

Low level SW846 8260B and Regular level 8260B and EPA 624

Calibration Standard Concentration Levels

	Level 1	Level 1a	Level 2	Level 3	Level 4	Level 5	Level 6 #	Level 7 !	Level 7a
Fluorobenzene (IS)	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
1,2-Dichloroethane-d4(surr)		20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Dichlorodifluoromethane		0.5	1	2	5	10	20	50	100
Chloromethane		0.5	1	2	5	10	20	50	100
Vinyl chloride		0.5	1	2	5	10	20	50	100
Bromomethane		0.5	1	2	5	10	20	50	100
Chloroethane		0.5	1	2	5	10	20	50	100
Trichlorofluoromethane		0.5	1	2	5	10	20	50	100
1,1-Dichloroethene		0.5	1	2	5	10	20	50	100
Acetone	1	2.5	5	10	25	50	100	250	500
Iodomethane	1	2.5	5	10	25	50	100	250	500
Carbon disulfide	1	2.5	5	10	25	50	100	250	500
Methylene chloride		0.5	1	2	5	10	20	50	100
trans-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,1-Dichloroethane		0.5	1	2	5	10	20	50	100
Ethyl ether		0.5	1	2	5	10	20	50	100
Vinyl acetate	1	2.5	5	10	25	50	100	250	500
cis-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethene (total)		1	2	4	10	20	40	100	200
Cyclohexene		0.5	1	2	5	10	20	50	100
2-Chloroethylvinyl ether			5	10	25	50	100	250	500
2,2-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Butanone	1	2.5	5	10	25	50	100	250	500
Bromochloromethane		0.5	1	2	5	10	20	50	100
Chloroform		0.5	1	2	5	10	20	50	100
1,1,1-Trichloroethane		0.5	1	2	5	10	20	50	100
1,1-Dichloropropene		0.5	1	2	5	10	20	50	100
Carbon tetrachloride		0.5	1	2	5	10	20	50	100
Benzene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethane		0.5	1	2	5	10	20	50	100
Trichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloropropane		0.5	1	2	5	10	20	50	100
Dibromomethane		0.5	1	2	5	10	20	50	100
Bromodichloromethane		0.5	1	2	5	10	20	50	100
cis-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
tert-Butylmethylether		0.5	1	2	5	10	20	50	100
Ethyl Ether			1	2	5	10	20	50	100
Acetonitrile			25	50	125	250	500	1250	2500
Methyl acetate			5	10	25	50	100	250	500
Cyclohexane			1	2	5	10	20	50	100
Methylcyclohexane			1	2	5	10	20	50	100
n-Butyl alcohol		50	100	200	500	1000	2000	5000	10000
2-Nitropropane			5	10	25	50	100	250	500
Ethyl acetate			5	10	25	50	100	250	500
Acrolein			5	10	25	50	100	250	500
Trichlorotrifluoroethane		2	5	10	25	50	100	250	500
Allyl chloride			5	10	25	50	100	250	500
Acrylonitrile			5	10	25	50	100	250	500
1,4-Dioxane			50	100	250	500	1000	2500	5000
Isobutyl alcohol			50	100	250	500	1000	2500	5000
Methacrylonitrile			5	10	25	50	100	250	500
Propionitrile			5	10	25	50	100	250	500
Methyl methacrylate			5	10	25	50	100	250	500
Chlorotrifluoroethylene			5	10	25	50	100	150	200
2-Chloro-1,1,1-trifluoroethane			5	10	25	50	100	150	200
Tetrahydrofuran			5	10	25	50	100	250	500
tert-Butyl alcohol			50	100	250	500	1000	2500	5000
Isopropyl ether			1	2	5	10	20	50	100
Ethyl tert-butyl ether			1	2	5	10	20	50	100
Isopropyl alcohol			50	100	250	500	1000	2500	5000
Methyl tert-amyl ether			1	2	5	10	20	50	100
1-Chlorohexane			1	2	5	10	20	50	100
2-Chloro-1,3-butadiene(chloroprene)			1	2	5	10	20	50	100
Chlorobenzene-d5 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Toluene-d8 (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
4-Methyl-2-pentanone	1	2.5	5	10	25	50	100	250	500
Toluene		0.5	1	2	5	10	20	50	100
trans-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
1,1,2-Trichloroethane		0.5	1	2	5	10	20	50	100
Tetrachloroethene		0.5	1	2	5	10	20	50	100
1,3-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Hexanone	1	2.5	5	10	25	50	20	250	500
Dibromochloromethane		0.5	1	2	5	10	20	50	100
1,2-Dibromoethane		0.5	1	2	5	10	20	50	100
Chlorobenzene		0.5	1	2	5	10	20	50	100
1,1,1,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Ethylbenzene		0.5	1	2	5	10	20	50	100
m,p-Xylene		1	2	4	10	20	20	100	200
o-Xylene		0.5	1	2	5	10	20	50	100
Xylenes (total)		1.5	3	6	15	30	60	150	300
Stryene		0.5	1	2	5	10	20	50	100
Ethyl methacrylate			5	10	25	50	100	250	500
1,4-Dichlorobenzene-d4 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromofluorobenzene (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromoform		0.5	1	2	5	10	20	50	100
Isopropylbenzene		0.5	1	2	5	10	20	50	100
1,1,2,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Bromobenzene		0.5	1	2	5	10	20	50	100
1,2,3-Trichloropropane		0.5	1	2	5	10	20	50	100
n-Propylbenzene		0.5	1	2	5	10	20	50	100
2-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,3,5-Trimethylbenzene		0.5	1	2	5	10	20	50	100
4-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,2,4-Trimethylbenzene		0.5	1	2	5	10	20	50	100
sec-Butylbenzene		0.5	1	2	5	10	20	50	100
1,3-Dichlorobenzene		0.5	1	2	5	10	20	50	100
tert-Butylbenzene		0.5	1	2	5	10	20	50	100
Isopropyltoluene		0.5	1	2	5	10	20	50	100
1,4-Dichlorobenzene		0.5	1	2	5	10	20	50	100
n-Butylbenzene		0.5	1	2	5	10	20	50	100
1,2-Dichlorobenzene		0.5	1	2	5	10	20	50	100
1,2-Dibromo-3-chloropropa		0.5	1	2	5	10	20	50	100
1,2,4-Trichlorobenzene		0.5	1	2	5	10	20	50	100
Hexachlorobutadiene		0.5	1	2	5	10	20	50	100
Naphthalene		0.5	1	2	5	10	20	50	100
1,2,3-Trichlorobenzene		0.5	1	2	5	10	20	50	100
cis-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
trans-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
Pentachloroethane			5	10	25	50	100	250	500
Benzyl chloride			5	10	25	50	100	250	500
Cyclohexanone			25	50	125	250	500	1250	2500
bis(2-Chloro-isopropyl)ether			5	10	25	50	100	250	500

Method	PQL	Concentration range		
SW 846 8260B low level	Level 1 &1a	Levels 1-> 7a	IS/SS @ 20 ppb	
EPA 524.2	Level 1a	Levels 1a-> 7a	IS/SS @ 20 ppb	
SW846 8260B/624	Level 2	Levels 1a-> 7a	IS/SS @ 50 ppb	n-butyl alchol only in 1a

#: Indicates calibration verification concentration level used for low level analysis

!: Indicates calibration verification concentration level used for regular level analysis

Calibration History Report VOA8
GEL Laboratories, LLC

10/30/2020

Method File : C:\msdchem\1\DATA\102920V8\VOA8-524T-102920.M
Last Update : Fri Oct 30 10:05:05 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

10/30/2020

Cal Lvl:10 Amt:40.00 Last Updated with: C:\msdchem\1\DATA\102920V8\8C407.D

Injection Date	Mix	Calibration File
29 Oct 2020 13:40	A	C:\msdchem\1\DATA\102920V8\8C407.D

Cal Lvl:2 Amt:0.50 Last Updated with: C:\msdchem\1\DATA\102920V8\8C402.D

Injection Date	Mix	Calibration File
29 Oct 2020 11:03	A	C:\msdchem\1\DATA\102920V8\8C402.D

Cal Lvl:3 Amt:1.00 Last Updated with: C:\msdchem\1\DATA\102920V8\8C403.D

Injection Date	Mix	Calibration File
29 Oct 2020 11:35	A	C:\msdchem\1\DATA\102920V8\8C403.D

Cal Lvl:4 Amt:2.00 None of the compounds use this level.

Injection Date	Mix	Calibration File

Cal Lvl:5 Amt:5.00 Last Updated with: C:\msdchem\1\DATA\102920V8\8C404.D

Injection Date	Mix	Calibration File
29 Oct 2020 12:06	A	C:\msdchem\1\DATA\102920V8\8C404.D

Cal Lvl:6 Amt:10.00 Last Updated with: C:\msdchem\1\DATA\102920V8\8C405.D

Injection Date	Mix	Calibration File
29 Oct 2020 12:37	A	C:\msdchem\1\DATA\102920V8\8C405.D

Cal Lvl:7 Amt:20.00 Last Updated with: C:\msdchem\1\DATA\102920V8\8C406.D

Injection Date	Mix	Calibration File
29 Oct 2020 13:09	A	C:\msdchem\1\DATA\102920V8\8C406.D

Cal Lvl:8 Amt:50.00 Last Updated with: C:\msdchem\1\DATA\102920V8\8C408.D

Injection Date	Mix	Calibration File
29 Oct 2020 14:11	A	C:\msdchem\1\DATA\102920V8\8C408.D

Cal Lvl:9 Amt:0.00 None of the compounds use this level.

Injection Date	Mix	Calibration File

VOA8-524T-102920.M Fri Oct 30 10:08:55 2020

SDG: 42488

Response Factor Report VOA8
GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\102920V8\VOA8-524T-102920.M
Last Update : Fri Oct 30 10:05:05 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

10/30/2020

10/30/2020

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
2)MA Dichlorodifluoromethane	0.8610527 0.8884311	0.7238338 0.8476478	0.7401216		0.7184111	0.7221194	0.7859	AVRG		9.6542
3)MA Chloromethane 0.0105 | 0.7011 | 0.00	1075798 525209	22974 1368630	33692		118158	234497		1/x LINR	# #	0.9982
4)MA Vinyl chloride	0.6393613 0.6538863	0.6719822 0.6501641	0.6516321		0.5944539	0.6018780	0.6376	AVRG		4.5014
5)MA Bromomethane -0.0044 | 0.3664 | 0.00	537787 262240	305 709356	17191		60807	126563		1/x LINR	# #	0.9964
6)MA Chloroethane	0.3021611 0.3119631	0.3671931 0.3220480	0.3518584		0.3043075	0.3033927	0.3233	AVRG		8.0626
7)MA Trichlorofluoromethane	1.0212185 1.0561802	0.9903233 1.0375548	1.0278422		1.0505003	1.0094458	1.0276	AVRG		2.2475
8)MA 1,1-Dichloroethylene	0.6991336 0.7093734	0.7102281 0.6978020	0.7462845		0.7220641	0.7248694	0.7157	AVRG		2.3690
9)MA Methylene chloride 0.0062 | 0.3230 | 0.00	484746 241039	10372 626265	16920		61230	122291		1/x LINR	# #	0.9998
10)MA tert-Butyl methyl ether	0.9988258 1.0459403	1.1412716 1.0023577	1.0719370		1.0495480	1.0401000	1.0500	AVRG		4.5700
11)MA trans-1,2-Dichloroethyle	0.4865441 0.5097097	0.5461027 0.4884664	0.4960868		0.5139431	0.5140011	0.5078	AVRG		4.0273
12)MA 1,1-Dichloroethane	0.6109306 0.6416336	0.5991328 0.6131128	0.6416787		0.6598795	0.6498170	0.6309	AVRG		3.6338
13)MA cis-1,2-Dichloroethylene	0.3324869 0.3518096	0.3982077 0.3319302	0.3548308		0.3496860	0.3664505	0.3551	AVRG		6.3765
14)MA 2,2-Dichloropropane	0.3777010 0.4065676	0.4833236 0.3746972	0.4114968		0.4057451	0.4111841	0.4101	AVRG		8.7349
15)MA Bromochloromethane	0.1599748 0.1723776	0.1598937 0.1619545	0.1661804		0.1745200	0.1755275	0.1672	AVRG		4.1138
16)MA Chloroform	0.6781813 0.7114042	0.7721501 0.6772812	0.6965177		0.6974063	0.7164296	0.7071	AVRG		4.5714

Response Factor Report VOA8
GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\102920V8\VOA8-524T-102920.M
Last Update : Fri Oct 30 10:05:05 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

SDG: 42488

Compound	10	2	3	4	5	6	Avg	Curve	Exp	%RSD/r2
b m1 m2	7	8	9							
17)MA 1,1,1-Trichloroethane	0.6635320	0.6459492	0.6399607		0.6771199	0.7087947				
	0.7046852	0.6770457					0.6739	AVRG		3.9385
18)MA 1,1-Dichloropropene	0.4846817	0.5449242	0.5258379		0.5111978	0.5175446				
	0.5217711	0.4901075					0.5137	AVRG		4.0577
19)MA Carbon tetrachloride	0.5948647	0.5368358	0.5779226		0.6028792	0.6249672				
	0.6159139	0.6093881					0.5947	AVRG		4.9877
20)SA 1,2-Dichloroethane-d4	0.2320308	0.2319048	0.2350986		0.2313713	0.2400260				
	0.2393453	0.2248321					0.2335	AVRG		2.2367
21)MA 1,2-Dichloroethane	0.6955212	0.7162810	0.7193968		0.7401063	0.7415505				
	0.7383451	0.7062250					0.7225	AVRG		2.5048
22)MA Benzene	1.2281860	1.3638908	1.3080909		1.3192800	1.3230696				
	1.3106116	1.2384377					1.2988	AVRG		3.7326
23)MA Trichloroethylene	0.3684759	0.3971364	0.3930081		0.3794001	0.3879105				
	0.3834041	0.3680728					0.3825	AVRG		2.9602
24)MA 1,2-Dichloropropane	0.3568625	0.3546052	0.3555671		0.3565799	0.3798983				
	0.3702129	0.3575023					0.3616	AVRG		2.6687
25)MA Dibromomethane	0.2489120	0.2692214	0.2405170		0.2570189	0.2605902				
	0.2641376	0.2519747					0.2561	AVRG		3.8041
26)MA Bromodichloromethane	0.5580789	0.5478168	0.5533255		0.5593662	0.5721516				
	0.5780428	0.5620210					0.5615	AVRG		1.8644
27)MA cis-1,3-Dichloropropylen	0.5858187	0.5711715	0.5715143		0.5927722	0.5894559				
	0.6088651	0.5968334					0.5881	AVRG		2.3004
29)SA Toluene-d8	1.3074193	1.2878846	1.2638746		1.3187432	1.3131480				
	1.3095940	1.2853196					1.2980	AVRG		1.5118
30)MA Toluene	1.6995035	1.8700865	1.7722103		1.7970892	1.8198539				
	1.8283315	1.6710996					1.7797	AVRG		4.0212
31)MA trans-1,3-Dichloropropyl	0.7839389	0.7398443	0.6877108		0.7719869	0.7776116				
	0.8219588	0.7705560					0.7648	AVRG		5.4562
32)MA 1,1,2-Trichloroethane	0.3496800	0.3704645	0.3559309		0.3710799	0.3604408				
	0.3677719	0.3451195					0.3601	AVRG		2.8623

Response Factor Report VOA8
GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\102920V8\VOA8-524T-102920.M
Last Update : Fri Oct 30 10:05:05 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

SDG: 42488

Compound	10	2	3	4	5	6	Avg	Curve	Exp	%RSD/r2
b m1 m2	7	8	9							
33)MA 1,3-Dichloropropane	0.7149084	0.6925192	0.7056640		0.7353877	0.7462648				
	0.7587182	0.7094578					0.7233	AVRG		3.3146
34)MA Tetrachloroethylene	0.3441502	0.3388693	0.3351483		0.3424163	0.3522652				
	0.3552420	0.3356471					0.3434	AVRG		2.2840
35)MA Dibromochloromethane	0.4954744	0.4554870	0.4036263		0.4518814	0.4875128				
	0.5091909	0.4922017					0.4708	AVRG		7.7199
36)MA 1,2-Dibromoethane	0.4440606	0.4371807	0.4489640		0.4552710	0.4560951				
	0.4646250	0.4424420					0.4498	AVRG		2.1020
37)MA Chlorobenzene	1.1541687	1.1503114	1.1840335		1.2154556	1.2254887				
	1.2055087	1.1386786					1.1819	AVRG		2.9355
38)MA 1,1,1,2-Tetrachloroethan	0.4807723	0.4386723	0.4308761		0.4884661	0.4900504				
	0.5106596	0.4789913					0.4741	AVRG		6.0828
39)MA Ethylbenzene	2.1045604	2.0014848	2.1190130		2.1393971	2.1757574				
	2.2042236	2.0651865					2.1157	AVRG		3.2137
40)MA m,p-Xylenes	0.7543307	0.7488279	0.7589509		0.7855345	0.7887549				
	0.7906589	0.7479765					0.7679	AVRG		2.5436
41)MA o-Xylene	1.8500414	1.9854160	1.9146231		1.9115628	1.9553245				
	1.9591959	1.8319123					1.9154	AVRG		2.9893
42)MA Styrene	1.3014881	1.2573691	1.3120972		1.3441599	1.3657938				
	1.3578017	1.3014045					1.3200	AVRG		2.8985
44)MA Bromoform	0.5233185	0.4125297	0.3854403		0.4546736	0.4869574				
	0.5289984	0.5204065					0.4732	AVRG		12.1306
45)MA Isopropylbenzene	3.3479723	3.1304958	3.1388195		3.4020322	3.5021254				
	3.5648719	3.2339308					3.3315	AVRG		5.1391
46)SA Bromofluorobenzene	0.9311825	0.9351851	0.9178511		0.9658558	0.9445240				
	0.9273636	0.9158686					0.9340	AVRG		1.8382
47)MA 1,1,2,2-Tetrachloroethan	0.9496269	0.8363616	0.9614227		0.9791913	1.0096127				
	0.9958176	0.9293269					0.9516	AVRG		6.0607
48)MA 1,2,3-Trichloropropane	0.3082366	0.3044264	0.2765371		0.3113025	0.3185725				
	0.3252241	0.2966237					0.3058	AVRG		5.2024

Response Factor Report VOA8
GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\102920V8\VOA8-524T-102920.M
Last Update : Fri Oct 30 10:05:05 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

SDG: 42488

Compound	10	2	3	4	5	6	Avg	Curve	Exp	%RSD/r2
b m1 m2	7	8	9							
49)MA Bromobenzene	0.8568738	0.8424313	0.8380162		0.8604795	0.8971792				
	0.8963545	0.8450540					0.8623	AVRG		2.8762
50)MA n-Propylbenzene	4.1059718	4.3912126	4.1155142		4.1945696	4.2938913				
	4.3623853	3.9714005					4.2050	AVRG		3.6306
51)MA 1,3,5-Trimethylbenzene	3.1855306	3.0096252	2.9616533		3.1686653	3.2436390				
	3.3126115	3.1606678					3.1489	AVRG		3.9347
52)MA 2-Chlorotoluene	0.7990619	0.7557813	0.7228607		0.8204398	0.8421012				
	0.8490034	0.7915094					0.7973	AVRG		5.7291
53)MA 4-Chlorotoluene	2.7029242	3.0006253	2.6287940		2.7603198	2.7869292				
	2.8284516	2.6497708					2.7654	AVRG		4.5676
54)MA tert-Butylbenzene	0.6158856	0.6463175	0.6243097		0.6071037	0.6361280				
	0.6301475	0.6040645					0.6234	AVRG		2.4759
55)MA 1,2,4-Trimethylbenzene	3.3919330	3.3123772	3.3024048		3.3812978	3.4913464				
	3.5071152	3.3351677					3.3888	AVRG		2.4322
56)MA sec-Butylbenzene	3.9311235	3.8013013	3.5641824		3.9867084	4.0614791				
	4.1113118	3.8995911					3.9080	AVRG		4.6869
57)MA 4-Isopropyltoluene	3.5870784	3.4629683	3.4536393		3.5837500	3.6730364				
	3.7321806	3.5594782					3.5789	AVRG		2.8393
58)MA 1,3-Dichlorobenzene	1.7051489	1.7035950	1.7724308		1.7513131	1.8136777				
	1.7633833	1.6647493					1.7392	AVRG		2.9085
59)MA 1,4-Dichlorobenzene	1.7600369	2.0106377	1.9494433		1.7965639	1.8029706				
	1.8058128	1.7288520					1.8363	AVRG		5.6319
60)MA n-Butylbenzene	3.7004621	3.9810898	3.8346210		3.9045622	3.7998032				
	3.8834827	3.6373712					3.8202	AVRG		3.1229
61)MA 1,2-Dichlorobenzene	1.8172240	1.8939531	1.7393243		1.9058979	1.9041607				
	1.8999149	1.7818661					1.8489	AVRG		3.7236
62)MA 1,2-Dibromo-3-chloroprop	0.3106794		0.2524503		0.2932396	0.2968929				
	0.3216119	0.3086343					0.2973	AVRG		8.1391
63)MA 1,2,4-Trichlorobenzene	1.9383468	1.7958962	1.6577366		1.8746094	1.8813423				
	1.9668193	1.8830272					1.8568	AVRG		5.5490

Response Factor Report VOA8
GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\102920V8\VOA8-524T-102920.M
Last Update : Fri Oct 30 10:05:05 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	10	2	3	4	5	6	Avg	Curve	Exp	%RSD/r2
b m1 m2	7	8	9							
64)MA Hexachlorobutadiene	0.8427326	0.7936645	0.6756608		0.7744744	0.8089294				
	0.8619652	0.8347923					0.7989	AVRG		7.7667
65)MA Naphthalene	5.2578186	5.0001701	4.6446042		5.1973428	5.4028866				
	5.5822561	5.0437996					5.1613	AVRG		5.8817
66)MA 1,2,3-Trichlorobenzene	1.9717086	1.7932799	1.6225801		1.9362630	1.9799510				
	2.0497820	1.9168726					1.8958	AVRG		7.5768
68)B Trichlorotrifluoroethane							0.0000	AVRG	#	-1.0000
69)B 1,4-Dioxane							0.0000	AVRG	#	-1.0000

(#) = Out of Range ($) = Individual RF Out of Range
AVRG = Average, LINR = Linear Regression, 1/x = the inverse of concentration, 1/x^2 = the inverse square of concentration

Continuing Calibration Summary

Client SDG: 42488

Instrument ID: VOA8.I **Injection Date:** 03-NOV-20 09:33

Data File: 110320V8\8D202.D **Init. Cal. Date(s)** 29-OCT-20 11:03 - 29-OCT-20 14:1

Lab Sample ID W8VM201103-01 **Method:** 102920V8\VOA8-524T-102920.M

Quant Type ISTD **Method Update:** 30-OCT-20 10:05

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.2335	0.22988		.01		-1.55032	30		Averaged
S	Toluene-d8	1.298	1.31961		.01		1.66487	30		Averaged
S	Bromofluorobenzene	0.934	0.93082		.01		-0.34047	30		Averaged
	Dichlorodifluoromethane	0.7859	0.91542		.01		16.48047	30		Averaged
	Chloromethane	20	19.81	20			-0.95	30		Linear
	Vinyl chloride	0.6376	0.62751		.01		-1.5825	30		Averaged
	Bromomethane	20	19.5	20			-2.5	30		Linear
	Chloroethane	0.3233	0.31003		.01		-4.10455	30		Averaged
	Trichlorofluoromethane	1.0276	1.08874		.01		5.94979	30		Averaged
	1,1-Dichloroethylene	0.7157	0.67588		.01		-5.56378	30		Averaged
	Methylene chloride	20	20.89	20			4.45	30		Linear
	tert-Butyl methyl ether	1.05	1.0147		.01		-3.3619	30		Averaged
	trans-1,2-Dichloroethylene	0.5078	0.4863		.01		-4.23395	30		Averaged
	1,1-Dichloroethane	0.6309	0.70243		.1		11.33777	30		Averaged
	cis-1,2-Dichloroethylene	0.3551	0.36037		.01		1.48409	30		Averaged
	2,2-Dichloropropane	0.4101	0.45098		.01		9.9683	30		Averaged
	Bromochloromethane	0.1672	0.1782		.01		6.57895	30		Averaged
	Chloroform	0.7071	0.74155		.01		4.87201	30		Averaged
	1,1,1-Trichloroethane	0.6739	0.70568		.01		4.71583	30		Averaged
	1,1-Dichloropropene	0.5137	0.54161		.01		5.43313	30		Averaged
	Carbon tetrachloride	0.5947	0.64477		.01		8.41937	30		Averaged
	1,2-Dichloroethane	0.7225	0.75159		.01		4.0263	30		Averaged
	Benzene	1.2988	1.39067		.01		7.07345	30		Averaged
	Trichloroethylene	0.3825	0.39881		.01		4.26405	30		Averaged
	1,2-Dichloropropane	0.3616	0.41043		.01		13.50387	30		Averaged
	Dibromomethane	0.2561	0.27124		.01		5.91175	30		Averaged
	Bromodichloromethane	0.5615	0.55931		.01		-0.39003	30		Averaged
	cis-1,3-Dichloropropylene	0.5881	0.64268		.01		9.28073	30		Averaged
	Toluene	1.7797	1.97849		.01		11.16986	30		Averaged
	trans-1,3-Dichloropropylene	0.7648	0.85052		.01		11.20816	30		Averaged
	1,1,2-Trichloroethane	0.3601	0.3909		.01		8.55318	30		Averaged
	1,3-Dichloropropane	0.7233	0.80613		.01		11.45168	30		Averaged
	Tetrachloroethylene	0.3434	0.36108		.01		5.14851	30		Averaged
	Dibromochloromethane	0.4708	0.49123		.01		4.33942	30		Averaged
	1,2-Dibromoethane	0.4498	0.4694		.01		4.35749	30		Averaged
	Chlorobenzene	1.1819	1.28792		.3		8.9703	30		Averaged
	1,1,1,2-Tetrachloroethane	0.4741	0.50858		.01		7.27273	30		Averaged

Continuing Calibration Summary

Instrument ID: VOA8.I **Injection Date:** 03-NOV-20 09:33

Data File: 110320V8\8D202.D **Init. Cal. Date(s)** 29-OCT-20 11:03 29-OCT-20 14:1

Lab Sample ID W8VM201103-01 **Method:** 102920V8\VOA8-524T-102920.M

Quant Type ISTD

Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
Ethylbenzene	2.1157	2.40275		.01		13.56761	30		Averaged
m,p-Xylenes	0.7679	0.85486		.01		11.32439	30		Averaged
Styrene	1.32	1.43915		.01		9.02652	30		Averaged
o-Xylene	1.9154	2.08181		.01		8.688	30		Averaged
Bromoform	0.4732	0.49905		.1		5.46281	30		Averaged
Isopropylbenzene	3.3315	3.71382		.01		11.47591	30		Averaged
1,1,2,2-Tetrachloroethane	0.9516	1.06714		.3		12.14166	30		Averaged
1,2,3-Trichloropropane	0.3058	0.30824		.01		0.79791	30		Averaged
Bromobenzene	0.8623	0.91069		.01		5.61174	30		Averaged
n-Propylbenzene	4.205	4.61817		.01		9.82568	30		Averaged
1,3,5-Trimethylbenzene	3.1489	3.32389		.01		5.55718	30		Averaged
2-Chlorotoluene	0.7973	0.9046		.01		13.45792	30		Averaged
4-Chlorotoluene	2.7654	2.97643		.01		7.63108	30		Averaged
tert-Butylbenzene	0.6234	0.67211		.01		7.8136	30		Averaged
1,2,4-Trimethylbenzene	3.3888	3.47606		.01		2.57495	30		Averaged
sec-Butylbenzene	3.908	4.4328		.01		13.42886	30		Averaged
4-Isopropyltoluene	3.5789	3.75579		.01		4.94258	30		Averaged
1,3-Dichlorobenzene	1.7392	1.905		.01		9.53312	30		Averaged
1,4-Dichlorobenzene	1.8363	1.95434		.01		6.42814	30		Averaged
n-Butylbenzene	3.8202	3.94362		.01		3.23072	30		Averaged
1,2-Dichlorobenzene	1.8489	2.08516		.01		12.77841	30		Averaged
1,2-Dibromo-3-chloropropane	0.2973	0.28894		.01		-2.81197	30		Averaged
1,2,4-Trichlorobenzene	1.8568	1.96625		.01		5.89455	30		Averaged
Hexachlorobutadiene	0.7989	0.85558		.01		7.09476	30		Averaged
Naphthalene	5.1613	5.40252		.01		4.67363	30		Averaged
1,2,3-Trichlorobenzene	1.8958	2.06064		.01		8.69501	30		Averaged

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**			**Matrix:**	**WATER**
Lab Sample ID:	**1204684928**				
Client Sample:	**QC for batch 2058569**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**MB for batch 2058569**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 11:06**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 11:06**				
Data File:	**110320V8\8D205B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**			**Matrix:**	**WATER**
Lab Sample ID:	**1204684928**				
Client Sample:	**QC for batch 2058569**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**MB for batch 2058569**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 11:06**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 11:06**				
Data File:	**110320V8\8D205B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
91-20-3	Naphthalene	J	0.180	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**			**Matrix:**	**WATER**
Lab Sample ID:	**1204684929**				
Client Sample:	**QC for batch 2058569**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**LCS for batch 2058569**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 10:04**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 10:04**				
Data File:	**110320V8\8D203B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane		18.6	ug/L	0.300	0.500	0.500
74-87-3	Chloromethane		20.0	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		18.3	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		20.6	ug/L	0.300	0.500	0.500
75-00-3	Chloroethane		17.5	ug/L	0.300	0.500	0.500
75-69-4	Trichlorofluoromethane		19.5	ug/L	0.300	0.500	0.500
75-35-4	1,1-Dichloroethylene		17.9	ug/L	0.188	0.500	0.500
75-09-2	Methylene chloride		18.3	ug/L	0.200	0.500	0.500
1634-04-4	tert-Butyl methyl ether		17.6	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		16.9	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		19.5	ug/L	0.167	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		17.3	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		17.5	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		18.3	ug/L	0.167	0.500	0.500
67-66-3	Chloroform		18.0	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		18.4	ug/L	0.167	0.500	0.500
563-58-6	1,1-Dichloropropene		17.8	ug/L	0.167	0.500	0.500
56-23-5	Carbon tetrachloride		18.0	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		17.6	ug/L	0.167	0.500	0.500
71-43-2	Benzene		18.3	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		17.9	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		19.7	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		18.5	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		17.9	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		19.0	ug/L	0.167	0.500	0.500
108-88-3	Toluene		18.4	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		18.5	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		18.3	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		19.1	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		17.7	ug/L	0.167	0.500	0.500
124-48-1	Dibromochloromethane		18.4	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		18.0	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		18.2	ug/L	0.167	0.500	0.500
100-41-4	Ethylbenzene		18.6	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		37.3	ug/L	0.167	1.00	0.500
95-47-6	o-Xylene		18.0	ug/L	0.167	0.500	0.500
100-42-5	Styrene		18.7	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		17.4	ug/L	0.300	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**			**Matrix:**	**WATER**
Lab Sample ID:	**1204684929**				
Client Sample:	**QC for batch 2058569**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**LCS for batch 2058569**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 10:04**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 10:04**				
Data File:	**110320V8\8D203B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
98-82-8	Isopropylbenzene		18.6	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		18.7	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		18.1	ug/L	0.300	0.500	0.500
108-86-1	Bromobenzene		17.8	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		18.1	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		17.6	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		19.3	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		17.6	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		17.7	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		17.4	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		18.6	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		17.8	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		18.3	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		17.4	ug/L	0.167	0.500	0.500
104-51-8	n-Butylbenzene		17.8	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		17.1	ug/L	0.330	1.00	1.00
87-68-3	Hexachlorobutadiene		17.5	ug/L	0.167	0.500	0.500
91-20-3	Naphthalene	B	18.8	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		18.1	ug/L	0.167	0.500	0.500
630-20-6	1,1,1,2-Tetrachloroethane		18.1	ug/L	0.167	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		17.8	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		18.2	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 08:55**	**Matrix:**	**W**
Lab Sample ID:	**1204684930**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**QC for batch 2058569**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-001PS**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 19:28**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 19:28**				
Data File:	**110320V8\8D221.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane		24.8	ug/L	0.300	0.500	0.500
74-87-3	Chloromethane		21.9	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		21.7	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		21.8	ug/L	0.300	0.500	0.500
75-00-3	Chloroethane		20.8	ug/L	0.300	0.500	0.500
75-69-4	Trichlorofluoromethane		26.4	ug/L	0.300	0.500	0.500
75-35-4	1,1-Dichloroethylene		25.7	ug/L	0.188	0.500	0.500
75-09-2	Methylene chloride		26.4	ug/L	0.200	0.500	0.500
1634-04-4	tert-Butyl methyl ether		22.8	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		22.3	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		24.0	ug/L	0.167	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		20.0	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		16.7	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		20.4	ug/L	0.167	0.500	0.500
67-66-3	Chloroform		22.3	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		21.7	ug/L	0.167	0.500	0.500
563-58-6	1,1-Dichloropropene		21.3	ug/L	0.167	0.500	0.500
56-23-5	Carbon tetrachloride		22.1	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		23.3	ug/L	0.167	0.500	0.500
71-43-2	Benzene		21.2	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		21.3	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		24.5	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		22.6	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		20.9	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		21.0	ug/L	0.167	0.500	0.500
108-88-3	Toluene		22.2	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		21.6	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		23.7	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		24.4	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		23.6	ug/L	0.167	0.500	0.500
124-48-1	Dibromochloromethane		21.1	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		21.9	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		22.1	ug/L	0.167	0.500	0.500
100-41-4	Ethylbenzene		23.8	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		45.8	ug/L	0.167	1.00	0.500
95-47-6	o-Xylene		23.5	ug/L	0.167	0.500	0.500
100-42-5	Styrene		23.5	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		18.8	ug/L	0.300	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 08:55**	**Matrix:**	**W**
Lab Sample ID:	**1204684930**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**QC for batch 2058569**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-001PS**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 19:28**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 19:28**				
Data File:	**110320V8\8D221.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
98-82-8	Isopropylbenzene		20.8	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		24.3	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		22.6	ug/L	0.300	0.500	0.500
108-86-1	Bromobenzene		20.2	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		21.4	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		20.2	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		21.7	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		21.5	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		20.2	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		20.0	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		21.7	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		20.0	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		22.0	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		21.3	ug/L	0.167	0.500	0.500
104-51-8	n-Butylbenzene		20.4	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		21.1	ug/L	0.330	1.00	1.00
87-68-3	Hexachlorobutadiene		17.6	ug/L	0.167	0.500	0.500
91-20-3	Naphthalene	B	22.2	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		20.1	ug/L	0.167	0.500	0.500
630-20-6	1,1,1,2-Tetrachloroethane		22.0	ug/L	0.167	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		19.0	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		22.2	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 08:55**	**Matrix:**	**W**
Lab Sample ID:	**1204684931**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**QC for batch 2058569**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-001PSD**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 19:59**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 19:59**				
Data File:	**110320V8\8D222.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane		30.7	ug/L	0.300	0.500	0.500
74-87-3	Chloromethane		26.8	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		25.8	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		24.8	ug/L	0.300	0.500	0.500
75-00-3	Chloroethane		23.2	ug/L	0.300	0.500	0.500
75-69-4	Trichlorofluoromethane		27.9	ug/L	0.300	0.500	0.500
75-35-4	1,1-Dichloroethylene		26.5	ug/L	0.188	0.500	0.500
75-09-2	Methylene chloride		28.2	ug/L	0.200	0.500	0.500
1634-04-4	tert-Butyl methyl ether		23.6	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		22.8	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		24.3	ug/L	0.167	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		20.6	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		17.0	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		20.6	ug/L	0.167	0.500	0.500
67-66-3	Chloroform		22.5	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		22.1	ug/L	0.167	0.500	0.500
563-58-6	1,1-Dichloropropene		21.4	ug/L	0.167	0.500	0.500
56-23-5	Carbon tetrachloride		22.4	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		22.8	ug/L	0.167	0.500	0.500
71-43-2	Benzene		21.7	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		21.5	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		24.8	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		23.1	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		21.3	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		21.5	ug/L	0.167	0.500	0.500
108-88-3	Toluene		21.5	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		20.8	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		22.1	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		23.6	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		23.6	ug/L	0.167	0.500	0.500
124-48-1	Dibromochloromethane		20.1	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		21.0	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		21.2	ug/L	0.167	0.500	0.500
100-41-4	Ethylbenzene		22.7	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		44.3	ug/L	0.167	1.00	0.500
95-47-6	o-Xylene		22.4	ug/L	0.167	0.500	0.500
100-42-5	Styrene		22.4	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		18.5	ug/L	0.300	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**42488**	**Date Collected:**	**10/29/2020 08:55**	**Matrix:**	**W**
Lab Sample ID:	**1204684931**	**Date Received:**	**11/02/2020 08:30**		
Client Sample:	**QC for batch 2058569**	**Client:**	**BRKL007**	**Project:**	**BRKL00701**
Client ID:	**42488-001PSD**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**2058569**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**11/03/2020 19:59**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2020 19:59**				
Data File:	**110320V8\8D222.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
98-82-8	Isopropylbenzene		20.3	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		23.1	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		22.0	ug/L	0.300	0.500	0.500
108-86-1	Bromobenzene		19.4	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		21.1	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		20.0	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		21.5	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		20.9	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		20.1	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		19.5	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		21.4	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		19.9	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		21.5	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		20.8	ug/L	0.167	0.500	0.500
104-51-8	n-Butylbenzene		20.2	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		20.5	ug/L	0.330	1.00	1.00
87-68-3	Hexachlorobutadiene		18.0	ug/L	0.167	0.500	0.500
91-20-3	Naphthalene	B	21.8	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		19.7	ug/L	0.167	0.500	0.500
630-20-6	1,1,1,2-Tetrachloroethane		20.4	ug/L	0.167	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		18.9	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		21.9	ug/L	0.167	0.500	0.500

Miscellaneous

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

10/30/2020

10/30/2020

Date: 10/29/2020 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42

Daily Instrument Readings:
Multiplier Voltage: 1329

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 10/30/2020

Cl test lot # 85161C

Sequence Number: 102920V8

	Daily Standard Solution ID#	Volume Added for Purge (ul) Blk/ Smpl	CCV	MS/ LCS	BFB
IS/SS	IVM201029-01	1	1	1	
LCS/MS	W8VM201029-08			20uL ea.	
BFB	IVM201012-01				1

Purge Amount	
5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
10/29/2020 10:32	8C401.D	IVM201012-01	GEL	BFB	5ML	1	N/A	1	W	PXY1	N/A	O	
10/29/2020 11:03	8C402.D	W8VM201029-01	VSTD0005	ICAL	5UL	1	PH<2	2	W	PXY1	N/A	O	MIX[A] UVM200921-04/UVM200723-14A
10/29/2020 11:35	8C403.D	W8VM201029-02	VSTD001	ICAL	5UL	1	PH<2	3	W	PXY1	N/A	O	MIX[A] UVM200921-05/UVM200723-15A
10/29/2020 12:06	8C404.D	W8VM201029-03	VSTD005	ICAL	5UL	1	PH<2	4	W	PXY1	N/A	O	MIX[A] UVM200921-07/UVM200723-17A
10/29/2020 12:37	8C405.D	W8VM201029-04	VSTD010	ICAL	5UL	1	PH<2	5	W	PXY1	N/A	O	MIX[A] UVM200921-08/UVM200723-18A
10/29/2020 13:09	8C406.D	W8VM201029-05	VSTD020	ICAL	5UL	1	PH<2	6	W	PXY1	N/A	O	MIX[A] UVM200921-09/UVM200723-19A
10/29/2020 13:40	8C407.D	W8VM201029-06	VSTD040	ICAL	10UL	1	PH<2	7	W	PXY1	N/A	O	MIX[A] UVM200921-09/UVM200723-19A
10/29/2020 14:11	8C408.D	W8VM201029-07	VSTD050	ICAL	12.5UL	1	PH<2	8	W	PXY1	N/A	O	MIX[A] UVM200921-09/UVM200723-19A
10/29/2020 14:43	8C409.D	120455	GEL	BLANK	5ML	1	PH<2	9	W	PXY1	N/A	X	
10/29/2020 15:14	8C410.D	W8VM201029-01	VSTD0005	ICAL	5UL	1	PH<2	10	W	PXY1	N/A	X	MIX[A] UVM200921-04/UVM200723-14A
10/29/2020 15:46	8C411.D	W8VM201029-08	ICV020	ICV	20UL	1	PH<2	11	W	PXY1	N/A	O	MIX[A] UVM200723-10D/UVM200723-20B

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

11/04/2020

11/14/2020

Date: 11/3/2020 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42

Daily Instrument Readings:
Multiplier Voltage: 1329

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 10/30/2020

Cl test lot # 85161C

Sequence Number: 110320V8

Daily Standard Volume Added for Purge (ul)

	Solution ID#	Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W8VM201103-01		5uL ea.		
IS/SS	IVM201029-01	1	1	1	
LCS/MS	W8VM201103-02			20uL ea.	
BFB	IVM201012-01				1

Purge Amount

5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
3 Nov 2020 09:02	8D201.D	IVM201012-01	GEL	BFB	5ML	1	N/A	1	W	PXY1	N/A	O	
3 Nov 2020 09:33	8D202.D	W8VM201103-01	GEL	CCV	5ML	1	PH<2	2	W	PXY1	N/A	O	MIX[A]
3 Nov 2020 10:04	8D203.D	W8VM201103-02	GEL	LCS	5ML	1	PH<2	3	W	PXY1	N/A	O	MIX[A]
3 Nov 2020 10:35	8D204.D	120467	GEL	BLANK	5ML	1	PH<2	4	W	PXY1	N/A	X	
3 Nov 2020 11:06	8D205.D	120467	GEL	BLANK	5ML	1	PH<2	5	W	PXY1	N/A	O	
3 Nov 2020 11:38	8D206.D	526093001	BRKL	2058569	5ML	1	PH<2	6	W	PXY1	N	O	
3 Nov 2020 12:08	8D207.D	526093002	BRKL	2058569	5ML	1	PH<2	7	W	PXY1	N	O	
3 Nov 2020 12:40	8D208.D	526093003	BRKL	2058569	5ML	1	PH<2	8	W	PXY1	N	O	
3 Nov 2020 13:11	8D209.D	526093004	BRKL	2058569	5ML	1	PH<2	9	W	PXY1	N	O	
3 Nov 2020 13:43	8D210.D	526093005	BRKL	2058569	5ML	1	PH<2	10	W	PXY1	N	O	
3 Nov 2020 14:14	8D211.D	526093006	BRKL	2058569	5ML	1	PH<2	11	W	PXY1	N	O	
3 Nov 2020 14:45	8D212.D	526096001	BRKL	2058569	5ML	1	PH<2	12	W	PXY1	N	O	
3 Nov 2020 15:17	8D213.D	526096002	BRKL	2058569	5ML	1	PH<2	13	W	PXY1	N	O	
3 Nov 2020 15:48	8D214.D	526096003	BRKL	2058569	5ML	1	PH<2	14	W	PXY1	N	O	
3 Nov 2020 16:19	8D215.D	526096004	BRKL	2058569	5ML	1	PH<2	15	W	PXY1	N	O	
3 Nov 2020 16:51	8D216.D	526096005	BRKL	2058569	5ML	1	PH<2	16	W	PXY1	N	O	
3 Nov 2020 17:22	8D217.D	526096006	BRKL	2058569	5ML	1	PH<2	17	W	PXY1	N	O	
3 Nov 2020 17:53	8D218.D	526096007	BRKL	2058569	5ML	1	PH<2	18	W	PXY1	N	O	
3 Nov 2020 18:25	8D219.D	526096008	BRKL	2058569	5ML	1	PH<2	19	W	PXY1	N	O	
3 Nov 2020 18:56	8D220.D	526096009	BRKL	2058569	5ML	1	PH<2	20	W	PXY1	N	O	
3 Nov 2020 19:28	8D221.D	1204684930	BRKL	2058569	5ML	1	PH<2	21	W	PXY1	N	O	MIX[A] 526093001PS
3 Nov 2020 19:59	8D222.D	1204684931	BRKL	2058569	5ML	1	PH<2	22	W	PXY1	N	O	MIX[A] 526093001PSD

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-40565-1
Laboratory Sample Delivery Group: 42532
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
12/4/2020 7:30:35 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-40565-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-40565-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 11/25/2020 9:42 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.3º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42532-001 (160-40565-1), 42532-002 (160-40565-2) and 42532-003 (160-40565-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 12/01/2020.

Job ID: 160-40565-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Chloromethane and Methylene Chloride were detected in method blank MB 460-743637/7 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS

Sample 42532-002 (160-40565-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 11/30/2020 and analyzed on 12/01/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-40565 Chain of Custody

Requires EDD Y

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42532

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Milligan	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	11/23/20	1330	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1335	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1335	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0		0800	W	Trip Blank	40 ML	SC	3	HCL					X							

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milligan 11/24/20	Print FED EX	Print
Signature 1200	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print Leonel Maraciego 11/25/2020	Print
Signature	Signature 0942	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☒ Disposal by Lab
- ☐ Archive For ____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 160-204729.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 160-40565-1
Address: 777 New Durham Road, ,	Due Date Requested: 12/8/2020			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	524.2_Preserved/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
42532-001 (160-40565-1)	11/23/20	13:30 Eastern		Water			X	3	
42532-002 (160-40565-2)	11/23/20	13:35 Eastern		Water			X	3	
42532-003 (160-40565-3)	11/23/20	08:00 Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	NOV 27 2020 1540	ETA STL		11/28/20 1300	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: CS# tape	Cooler Temperature(s) °C and Other Remarks: IR11 2.0°C

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-40565-1
SDG Number: 42532

Login Number: 40565
List Number: 1
Creator: Greer, Diane A

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-40565-1
SDG Number: 42532

Login Number: 40565
List Number: 2
Creator: Acierno, Alexandra X

List Source: Eurofins TestAmerica, Edison
List Creation: 11/30/20 10:04 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	tape
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40565-1
SDG: 42532

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40565-1
SDG: 42532

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40565-1
SDG: 42532

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-40565-1	42532-001	Water	11/23/20 13:30	11/25/20 09:42	
160-40565-2	42532-002	Water	11/23/20 13:35	11/25/20 09:42	
160-40565-3	42532-003	Water	11/23/20 08:00	11/25/20 09:42	

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40565-1
SDG: 42532

Client Sample ID: 42532-001
Date Collected: 11/23/20 13:30
Date Received: 11/25/20 09:42

Lab Sample ID: 160-40565-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/01/20 13:07	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/01/20 13:07	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			12/01/20 13:07	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			12/01/20 13:07	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			12/01/20 13:07	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/01/20 13:07	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/01/20 13:07	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			12/01/20 13:07	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			12/01/20 13:07	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			12/01/20 13:07	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			12/01/20 13:07	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			12/01/20 13:07	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			12/01/20 13:07	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/01/20 13:07	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			12/01/20 13:07	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			12/01/20 13:07	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			12/01/20 13:07	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/01/20 13:07	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			12/01/20 13:07	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/01/20 13:07	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			12/01/20 13:07	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			12/01/20 13:07	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			12/01/20 13:07	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			12/01/20 13:07	1
Benzene	0.50	U	0.50	0.11	ug/L			12/01/20 13:07	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			12/01/20 13:07	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			12/01/20 13:07	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			12/01/20 13:07	1
Bromoform	0.50	U	0.50	0.080	ug/L			12/01/20 13:07	1
Bromomethane	0.57	U	0.57	0.31	ug/L			12/01/20 13:07	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			12/01/20 13:07	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			12/01/20 13:07	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			12/01/20 13:07	1
Chloroethane	0.50	U	0.50	0.23	ug/L			12/01/20 13:07	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			12/01/20 13:07	1
Chloroform	**0.56**		0.50	0.12	ug/L			12/01/20 13:07	1
Chloromethane	0.50	U	0.50	0.18	ug/L			12/01/20 13:07	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/01/20 13:07	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/01/20 13:07	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			12/01/20 13:07	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			12/01/20 13:07	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			12/01/20 13:07	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			12/01/20 13:07	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/01/20 13:07	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			12/01/20 13:07	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			12/01/20 13:07	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			12/01/20 13:07	1
Naphthalene	0.67	U	0.67	0.080	ug/L			12/01/20 13:07	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			12/01/20 13:07	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40565-1
SDG: 42532

Client Sample ID: 42532-001

Date Collected: 11/23/20 13:30
Date Received: 11/25/20 09:42

Lab Sample ID: 160-40565-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			12/01/20 13:07	1
o-Xylene	0.50	U	0.50	0.090	ug/L			12/01/20 13:07	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			12/01/20 13:07	1
Styrene	0.50	U	0.50	0.090	ug/L			12/01/20 13:07	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			12/01/20 13:07	1
Tetrachloroethene	**3.8**		0.50	0.14	ug/L			12/01/20 13:07	1
Toluene	0.50	U	0.50	0.11	ug/L			12/01/20 13:07	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			12/01/20 13:07	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			12/01/20 13:07	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			12/01/20 13:07	1
Trichlorofluoromethane	**0.39**	**J**	0.50	0.27	ug/L			12/01/20 13:07	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			12/01/20 13:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*70 - 130*		*12/01/20 13:07*	*1*
1,2-Dichlorobenzene-d4	*92*		*70 - 130*		*12/01/20 13:07*	*1*

Client Sample ID: 42532-002

Date Collected: 11/23/20 13:35
Date Received: 11/25/20 09:42

Lab Sample ID: 160-40565-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/01/20 13:30	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/01/20 13:30	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			12/01/20 13:30	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			12/01/20 13:30	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			12/01/20 13:30	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/01/20 13:30	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/01/20 13:30	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			12/01/20 13:30	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			12/01/20 13:30	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			12/01/20 13:30	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			12/01/20 13:30	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			12/01/20 13:30	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			12/01/20 13:30	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/01/20 13:30	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			12/01/20 13:30	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			12/01/20 13:30	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			12/01/20 13:30	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/01/20 13:30	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			12/01/20 13:30	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/01/20 13:30	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			12/01/20 13:30	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			12/01/20 13:30	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			12/01/20 13:30	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			12/01/20 13:30	1
Benzene	0.50	U	0.50	0.11	ug/L			12/01/20 13:30	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			12/01/20 13:30	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			12/01/20 13:30	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40565-1
SDG: 42532

Client Sample ID: 42532-002

Date Collected: 11/23/20 13:35
Date Received: 11/25/20 09:42

Lab Sample ID: 160-40565-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			12/01/20 13:30	1
Bromoform	0.50	U	0.50	0.080	ug/L			12/01/20 13:30	1
Bromomethane	0.57	U	0.57	0.31	ug/L			12/01/20 13:30	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			12/01/20 13:30	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			12/01/20 13:30	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			12/01/20 13:30	1
Chloroethane	0.50	U	0.50	0.23	ug/L			12/01/20 13:30	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			12/01/20 13:30	1
Chloroform	0.50	U	0.50	0.12	ug/L			12/01/20 13:30	1
Chloromethane	0.50	U	0.50	0.18	ug/L			12/01/20 13:30	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/01/20 13:30	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/01/20 13:30	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			12/01/20 13:30	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			12/01/20 13:30	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			12/01/20 13:30	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			12/01/20 13:30	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/01/20 13:30	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			12/01/20 13:30	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			12/01/20 13:30	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			12/01/20 13:30	1
Naphthalene	0.67	U	0.67	0.080	ug/L			12/01/20 13:30	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			12/01/20 13:30	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			12/01/20 13:30	1
o-Xylene	0.50	U	0.50	0.090	ug/L			12/01/20 13:30	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			12/01/20 13:30	1
Styrene	0.50	U	0.50	0.090	ug/L			12/01/20 13:30	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			12/01/20 13:30	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			12/01/20 13:30	1
Toluene	0.50	U	0.50	0.11	ug/L			12/01/20 13:30	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			12/01/20 13:30	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			12/01/20 13:30	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			12/01/20 13:30	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			12/01/20 13:30	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			12/01/20 13:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*70 - 130*		*12/01/20 13:30*	*1*
1,2-Dichlorobenzene-d4	*96*		*70 - 130*		*12/01/20 13:30*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		11/30/20 14:11	12/01/20 14:36	2

Client Sample ID: 42532-003

Date Collected: 11/23/20 08:00
Date Received: 11/25/20 09:42

Lab Sample ID: 160-40565-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/01/20 13:53	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40565-1
SDG: 42532

Client Sample ID: 42532-003
Date Collected: 11/23/20 08:00
Date Received: 11/25/20 09:42

Lab Sample ID: 160-40565-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/01/20 13:53	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			12/01/20 13:53	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			12/01/20 13:53	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			12/01/20 13:53	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/01/20 13:53	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/01/20 13:53	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			12/01/20 13:53	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			12/01/20 13:53	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			12/01/20 13:53	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			12/01/20 13:53	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			12/01/20 13:53	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			12/01/20 13:53	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/01/20 13:53	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			12/01/20 13:53	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			12/01/20 13:53	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			12/01/20 13:53	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/01/20 13:53	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			12/01/20 13:53	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/01/20 13:53	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			12/01/20 13:53	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			12/01/20 13:53	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			12/01/20 13:53	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			12/01/20 13:53	1
Benzene	0.50	U	0.50	0.11	ug/L			12/01/20 13:53	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			12/01/20 13:53	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			12/01/20 13:53	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			12/01/20 13:53	1
Bromoform	0.50	U	0.50	0.080	ug/L			12/01/20 13:53	1
Bromomethane	0.57	U	0.57	0.31	ug/L			12/01/20 13:53	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			12/01/20 13:53	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			12/01/20 13:53	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			12/01/20 13:53	1
Chloroethane	0.50	U	0.50	0.23	ug/L			12/01/20 13:53	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			12/01/20 13:53	1
Chloroform	0.50	U	0.50	0.12	ug/L			12/01/20 13:53	1
Chloromethane	0.50	U	0.50	0.18	ug/L			12/01/20 13:53	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/01/20 13:53	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/01/20 13:53	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			12/01/20 13:53	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			12/01/20 13:53	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			12/01/20 13:53	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			12/01/20 13:53	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/01/20 13:53	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			12/01/20 13:53	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			12/01/20 13:53	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			12/01/20 13:53	1
Naphthalene	0.67	U	0.67	0.080	ug/L			12/01/20 13:53	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			12/01/20 13:53	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			12/01/20 13:53	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40565-1
SDG: 42532

Client Sample ID: 42532-003
Date Collected: 11/23/20 08:00
Date Received: 11/25/20 09:42

Lab Sample ID: 160-40565-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.090	ug/L			12/01/20 13:53	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			12/01/20 13:53	1
Styrene	0.50	U	0.50	0.090	ug/L			12/01/20 13:53	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			12/01/20 13:53	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			12/01/20 13:53	1
Toluene	0.50	U	0.50	0.11	ug/L			12/01/20 13:53	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			12/01/20 13:53	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			12/01/20 13:53	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			12/01/20 13:53	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			12/01/20 13:53	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			12/01/20 13:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*70 - 130*		*12/01/20 13:53*	*1*
1,2-Dichlorobenzene-d4	*93*		*70 - 130*		*12/01/20 13:53*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-743637/7
Matrix: Water
Analysis Batch: 743637

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/01/20 08:50	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/01/20 08:50	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			12/01/20 08:50	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			12/01/20 08:50	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			12/01/20 08:50	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/01/20 08:50	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/01/20 08:50	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			12/01/20 08:50	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			12/01/20 08:50	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			12/01/20 08:50	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			12/01/20 08:50	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			12/01/20 08:50	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			12/01/20 08:50	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/01/20 08:50	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			12/01/20 08:50	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			12/01/20 08:50	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			12/01/20 08:50	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/01/20 08:50	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			12/01/20 08:50	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/01/20 08:50	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			12/01/20 08:50	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			12/01/20 08:50	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			12/01/20 08:50	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			12/01/20 08:50	1
Benzene	0.50	U	0.50	0.11	ug/L			12/01/20 08:50	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			12/01/20 08:50	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			12/01/20 08:50	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			12/01/20 08:50	1
Bromoform	0.50	U	0.50	0.080	ug/L			12/01/20 08:50	1
Bromomethane	0.57	U	0.57	0.31	ug/L			12/01/20 08:50	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			12/01/20 08:50	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			12/01/20 08:50	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			12/01/20 08:50	1
Chloroethane	0.50	U	0.50	0.23	ug/L			12/01/20 08:50	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			12/01/20 08:50	1
Chloroform	0.50	U	0.50	0.12	ug/L			12/01/20 08:50	1
Chloromethane	0.212	J	0.50	0.18	ug/L			12/01/20 08:50	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/01/20 08:50	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/01/20 08:50	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			12/01/20 08:50	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			12/01/20 08:50	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			12/01/20 08:50	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			12/01/20 08:50	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/01/20 08:50	1
Methylene Chloride	0.493	J	0.99	0.42	ug/L			12/01/20 08:50	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			12/01/20 08:50	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			12/01/20 08:50	1
Naphthalene	0.67	U	0.67	0.080	ug/L			12/01/20 08:50	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-743637/7
Matrix: Water
Analysis Batch: 743637

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			12/01/20 08:50	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			12/01/20 08:50	1
o-Xylene	0.50	U	0.50	0.090	ug/L			12/01/20 08:50	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			12/01/20 08:50	1
Styrene	0.50	U	0.50	0.090	ug/L			12/01/20 08:50	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			12/01/20 08:50	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			12/01/20 08:50	1
Toluene	0.50	U	0.50	0.11	ug/L			12/01/20 08:50	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			12/01/20 08:50	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			12/01/20 08:50	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			12/01/20 08:50	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			12/01/20 08:50	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			12/01/20 08:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*12/01/20 08:50*	*1*
1,2-Dichlorobenzene-d4	*95*		*70 - 130*		*12/01/20 08:50*	*1*

Lab Sample ID: LCS 460-743637/3
Matrix: Water
Analysis Batch: 743637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	1.77		ug/L		89	70 - 130
1,1,1-Trichloroethane	2.00	1.81		ug/L		90	70 - 130
1,1,2,2-Tetrachloroethane	2.00	1.77		ug/L		89	70 - 130
1,1,2-Trichloroethane	2.00	1.85		ug/L		92	70 - 130
1,1-Dichloroethane	2.00	1.91		ug/L		95	70 - 130
1,1-Dichloroethene	2.00	1.85		ug/L		92	70 - 130
1,1-Dichloropropene	2.00	1.98		ug/L		99	70 - 130
1,2,3-Trichlorobenzene	2.00	1.80		ug/L		90	70 - 130
1,2,3-Trichloropropane	2.00	1.71		ug/L		85	70 - 130
1,2,4-Trichlorobenzene	2.00	1.82		ug/L		91	70 - 130
1,2,4-Trimethylbenzene	2.00	1.83		ug/L		92	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	1.59		ug/L		79	70 - 130
1,2-Dibromoethane	2.00	1.84		ug/L		92	70 - 130
1,2-Dichlorobenzene	2.00	1.76		ug/L		88	70 - 130
1,2-Dichloroethane	2.00	1.85		ug/L		92	70 - 130
1,2-Dichloropropane	2.00	1.92		ug/L		96	70 - 130
1,3,5-Trimethylbenzene	2.00	1.83		ug/L		91	70 - 130
1,3-Dichlorobenzene	2.00	1.78		ug/L		89	70 - 130
1,3-Dichloropropane	2.00	1.83		ug/L		92	70 - 130
1,4-Dichlorobenzene	2.00	1.73		ug/L		86	70 - 130
2,2-Dichloropropane	2.00	1.89		ug/L		94	70 - 130
2-Chlorotoluene	2.00	1.78		ug/L		89	70 - 130
4-Chlorotoluene	2.00	1.83		ug/L		92	70 - 130
4-Isopropyltoluene	2.00	1.85		ug/L		92	70 - 130
Benzene	2.00	2.01		ug/L		100	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-743637/3
Matrix: Water
Analysis Batch: 743637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	2.00	1.80		ug/L		90	70 - 130
Bromochloromethane	2.00	1.90		ug/L		95	70 - 130
Bromodichloromethane	2.00	1.82		ug/L		91	70 - 130
Bromoform	2.00	1.74		ug/L		87	70 - 130
Bromomethane	2.00	1.88		ug/L		94	70 - 130
Carbon tetrachloride	2.00	1.76		ug/L		88	70 - 130
Chlorobenzene	2.00	1.80		ug/L		90	70 - 130
Dibromochloromethane	2.00	1.70		ug/L		85	70 - 130
Chloroethane	2.00	1.94		ug/L		97	70 - 130
Vinyl chloride	2.00	1.89		ug/L		95	70 - 130
Chloroform	2.00	1.85		ug/L		92	70 - 130
Chloromethane	2.00	1.75		ug/L		87	70 - 130
cis-1,2-Dichloroethene	2.00	2.02		ug/L		101	70 - 130
cis-1,3-Dichloropropene	2.00	1.86		ug/L		93	70 - 130
Dibromomethane	2.00	1.90		ug/L		95	70 - 130
Dichlorodifluoromethane	2.00	1.56		ug/L		78	70 - 130
Ethylbenzene	2.00	1.87		ug/L		93	70 - 130
Hexachlorobutadiene	2.00	1.77		ug/L		89	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	2.01		ug/L		101	70 - 130
Methylene Chloride	2.00	2.22		ug/L		111	70 - 130
m-Xylene & p-Xylene	4.00	3.76		ug/L		94	70 - 130
Isopropylbenzene	2.00	1.87		ug/L		93	70 - 130
Naphthalene	2.00	1.77		ug/L		88	70 - 130
n-Butylbenzene	2.00	1.89		ug/L		95	70 - 130
N-Propylbenzene	2.00	1.88		ug/L		94	70 - 130
o-Xylene	2.00	1.78		ug/L		89	70 - 130
sec-Butylbenzene	2.00	1.93		ug/L		96	70 - 130
Styrene	2.00	1.80		ug/L		90	70 - 130
tert-Butylbenzene	2.00	1.77		ug/L		88	70 - 130
Tetrachloroethene	2.00	1.88		ug/L		94	70 - 130
Toluene	2.00	1.95		ug/L		98	70 - 130
trans-1,2-Dichloroethene	2.00	1.89		ug/L		95	70 - 130
trans-1,3-Dichloropropene	2.00	1.93		ug/L		96	70 - 130
Trichloroethene	2.00	1.91		ug/L		96	70 - 130
Trichlorofluoromethane	2.00	1.61		ug/L		81	70 - 130
Xylenes, Total	6.00	5.54		ug/L		92	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*70 - 130*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*

Lab Sample ID: LCSD 460-743637/4
Matrix: Water
Analysis Batch: 743637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	1.76		ug/L		88	70 - 130	0	30
1,1,1-Trichloroethane	2.00	1.80		ug/L		90	70 - 130	0	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-743637/4
Matrix: Water
Analysis Batch: 743637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	2.00	1.75		ug/L		88	70 - 130	1	30
1,1,2-Trichloroethane	2.00	1.81		ug/L		90	70 - 130	2	30
1,1-Dichloroethane	2.00	1.89		ug/L		95	70 - 130	1	30
1,1-Dichloroethene	2.00	1.84		ug/L		92	70 - 130	0	30
1,1-Dichloropropene	2.00	1.96		ug/L		98	70 - 130	1	30
1,2,3-Trichlorobenzene	2.00	1.68		ug/L		84	70 - 130	7	30
1,2,3-Trichloropropane	2.00	1.75		ug/L		88	70 - 130	2	30
1,2,4-Trichlorobenzene	2.00	1.72		ug/L		86	70 - 130	6	30
1,2,4-Trimethylbenzene	2.00	1.81		ug/L		90	70 - 130	1	30
1,2-Dibromo-3-Chloropropane	2.00	1.57		ug/L		78	70 - 130	1	30
1,2-Dibromoethane	2.00	1.86		ug/L		93	70 - 130	1	30
1,2-Dichlorobenzene	2.00	1.71		ug/L		86	70 - 130	3	30
1,2-Dichloroethane	2.00	1.79		ug/L		89	70 - 130	3	30
1,2-Dichloropropane	2.00	1.93		ug/L		97	70 - 130	1	30
1,3,5-Trimethylbenzene	2.00	1.83		ug/L		92	70 - 130	0	30
1,3-Dichlorobenzene	2.00	1.77		ug/L		88	70 - 130	1	30
1,3-Dichloropropane	2.00	1.87		ug/L		94	70 - 130	2	30
1,4-Dichlorobenzene	2.00	1.72		ug/L		86	70 - 130	0	30
2,2-Dichloropropane	2.00	1.84		ug/L		92	70 - 130	2	30
2-Chlorotoluene	2.00	1.79		ug/L		90	70 - 130	1	30
4-Chlorotoluene	2.00	1.83		ug/L		92	70 - 130	0	30
4-Isopropyltoluene	2.00	1.87		ug/L		93	70 - 130	1	30
Benzene	2.00	1.99		ug/L		99	70 - 130	1	30
Bromobenzene	2.00	1.77		ug/L		89	70 - 130	2	30
Bromochloromethane	2.00	1.89		ug/L		95	70 - 130	0	30
Bromodichloromethane	2.00	1.79		ug/L		89	70 - 130	2	30
Bromoform	2.00	1.61		ug/L		80	70 - 130	8	30
Bromomethane	2.00	1.81		ug/L		91	70 - 130	4	30
Carbon tetrachloride	2.00	1.76		ug/L		88	70 - 130	0	30
Chlorobenzene	2.00	1.78		ug/L		89	70 - 130	1	30
Dibromochloromethane	2.00	1.69		ug/L		85	70 - 130	1	30
Chloroethane	2.00	1.91		ug/L		96	70 - 130	2	30
Vinyl chloride	2.00	1.84		ug/L		92	70 - 130	3	30
Chloroform	2.00	1.85		ug/L		93	70 - 130	0	30
Chloromethane	2.00	1.70		ug/L		85	70 - 130	2	30
cis-1,2-Dichloroethene	2.00	1.99		ug/L		99	70 - 130	2	30
cis-1,3-Dichloropropene	2.00	1.78		ug/L		89	70 - 130	4	30
Dibromomethane	2.00	1.86		ug/L		93	70 - 130	2	30
Dichlorodifluoromethane	2.00	1.53		ug/L		76	70 - 130	3	30
Ethylbenzene	2.00	1.86		ug/L		93	70 - 130	0	30
Hexachlorobutadiene	2.00	1.77		ug/L		89	70 - 130	0	30
Methyl-t-Butyl Ether (MTBE)	2.00	1.99		ug/L		100	70 - 130	1	30
Methylene Chloride	2.00	2.22		ug/L		111	70 - 130	0	30
m-Xylene & p-Xylene	4.00	3.76		ug/L		94	70 - 130	0	30
Isopropylbenzene	2.00	1.85		ug/L		93	70 - 130	1	30
Naphthalene	2.00	1.81		ug/L		90	70 - 130	2	30
n-Butylbenzene	2.00	1.88		ug/L		94	70 - 130	1	30
N-Propylbenzene	2.00	1.86		ug/L		93	70 - 130	1	30
o-Xylene	2.00	1.79		ug/L		89	70 - 130	1	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-743637/4
Matrix: Water
Analysis Batch: 743637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			2.00	1.94		ug/L		97	70 - 130	1	30
Styrene			2.00	1.76		ug/L		88	70 - 130	2	30
tert-Butylbenzene			2.00	1.78		ug/L		89	70 - 130	0	30
Tetrachloroethene			2.00	1.82		ug/L		91	70 - 130	3	30
Toluene			2.00	1.90		ug/L		95	70 - 130	3	30
trans-1,2-Dichloroethene			2.00	1.89		ug/L		94	70 - 130	0	30
trans-1,3-Dichloropropene			2.00	1.78		ug/L		89	70 - 130	8	30
Trichloroethene			2.00	1.90		ug/L		95	70 - 130	1	30
Trichlorofluoromethane			2.00	1.58		ug/L		79	70 - 130	2	30
Xylenes, Total			6.00	5.55		ug/L		93	70 - 130	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*70 - 130*
1,2-Dichlorobenzene-d4	*97*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-490569/1-A ^2
Matrix: Water
Analysis Batch: 490634

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 490569

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		11/30/20 14:11	12/01/20 14:29	2

Lab Sample ID: LCS 160-490569/2-A ^2
Matrix: Water
Analysis Batch: 490634

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 490569

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	192		ug/L		96	82 - 116		

Lab Sample ID: 160-40565-2 MS
Matrix: Water
Analysis Batch: 490634

Client Sample ID: 42532-002
Prep Type: Total/NA
Prep Batch: 490569

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	195		ug/L		97	82 - 116		

Lab Sample ID: 160-40565-2 MSD
Matrix: Water
Analysis Batch: 490634

Client Sample ID: 42532-002
Prep Type: Total/NA
Prep Batch: 490569

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	197		ug/L		98	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40565-1
SDG: 42532

GC/MS VOA

Analysis Batch: 743637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40565-1	42532-001	Total/NA	Water	524.2	
160-40565-2	42532-002	Total/NA	Water	524.2	
160-40565-3	42532-003	Total/NA	Water	524.2	
MB 460-743637/7	Method Blank	Total/NA	Water	524.2	
LCS 460-743637/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-743637/4	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 490569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40565-2	42532-002	Total/NA	Water	3010A	
MB 160-490569/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-490569/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-40565-2 MS	42532-002	Total/NA	Water	3010A	
160-40565-2 MSD	42532-002	Total/NA	Water	3010A	

Analysis Batch: 490634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40565-2	42532-002	Total/NA	Water	6020A	490569
MB 160-490569/1-A ^2	Method Blank	Total/NA	Water	6020A	490569
LCS 160-490569/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	490569
160-40565-2 MS	42532-002	Total/NA	Water	6020A	490569
160-40565-2 MSD	42532-002	Total/NA	Water	6020A	490569

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40565-1
SDG: 42532

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	DCZ								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-40565-1	42532-001	95	92								
160-40565-2	42532-002	97	96								
160-40565-3	42532-003	97	93								
LCS 460-743637/3	Lab Control Sample	100	98								
LCSD 460-743637/4	Lab Control Sample Dup	99	97								
MB 460-743637/7	Method Blank	99	95								

Surrogate Legend

BFB = 4-Bromofluorobenzene
DCZ = 1,2-Dichlorobenzene-d4

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-40629-1
Laboratory Sample Delivery Group: 42594
Client Project/Site: BNL - OU3-B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
12/14/2020 5:33:55 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-40629-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3-B96

Report Number: 160-40629-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 12/3/2020 9:55 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -0.1º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42594-001 (160-40629-1), 42594-002 (160-40629-2) and 42594-003 (160-40629-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 12/08/2020.

Job ID: 160-40629-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS

Sample 42594-002 (160-40629-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 12/07/2020 and analyzed on 12/09/2020.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-40629 Chain of Custody

Chain of Custody No. 42594

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext: 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
E. Kramer	Sampler: J Milliman	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	**Project Manager:**	**Field Engineer:**
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	12/1/20	1134	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0	↓	1140	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0	↓	1140	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0	12/1/20	0900	W	Trip Blank	40 ML	SC	3	HCL					X							

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milliman 12/2/20	Print FED EX	Print
Signature 1100	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print Leonel Maraviegas 12/3/2020	Print
Signature	Signature 0955	Signature

Contractor Lab Sample Disposal:
❑ Return To Client ☒ Disposal by Lab
❑ Archive For _____ Months

Data Package: ❑ Full ☒ Summary

Turn-Around Time Required:
❑ Rush (1 Day) ☒ 14 Days ❑ 30 Days
❑ 7 Days ❑ Other ( )

BNL F 3101F (rev. 6/13) Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 160-205076.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 160-40629-1
Address: 777 New Durham Road, ,	Due Date Requested: 12/16/2020			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3-B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	524.2_Preserved/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
42594-001 (160-40629-1)	12/1/20	11:34 Eastern		Water			X	3	
42594-002 (160-40629-2)	12/1/20	11:40 Eastern		Water			X	3	
42594-003 (160-40629-3)	12/1/20	09:00 Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	12/3/2020 1715	EMSTL	[signature] via FedEx	12/4/20 1100	EMSTL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: X Yes Δ No	Custody Seal No.: taper evident tape	Cooler Temperature(s) °C and Other Remarks: 4.9°C IR11

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-40629-1
SDG Number: 42594

Login Number: 40629
List Number: 1
Creator: Greer, Diane A

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-40629-1
SDG Number: 42594

Login Number: 40629
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 12/04/20 12:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	tamper evident tape
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.9°C IR11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-40629-1
SDG: 42594

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-40629-1
SDG: 42594

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-40629-1
SDG: 42594

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-40629-1	42594-001	Water	12/01/20 11:34	12/03/20 09:55	
160-40629-2	42594-002	Water	12/01/20 11:40	12/03/20 09:55	
160-40629-3	42594-003	Water	12/01/20 09:00	12/03/20 09:55	

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-40629-1
SDG: 42594

Client Sample ID: 42594-001
Date Collected: 12/01/20 11:34
Date Received: 12/03/20 09:55

Lab Sample ID: 160-40629-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/08/20 09:25	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/08/20 09:25	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			12/08/20 09:25	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			12/08/20 09:25	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			12/08/20 09:25	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/08/20 09:25	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/08/20 09:25	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			12/08/20 09:25	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			12/08/20 09:25	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			12/08/20 09:25	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			12/08/20 09:25	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			12/08/20 09:25	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			12/08/20 09:25	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/08/20 09:25	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			12/08/20 09:25	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			12/08/20 09:25	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			12/08/20 09:25	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/08/20 09:25	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			12/08/20 09:25	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/08/20 09:25	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			12/08/20 09:25	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			12/08/20 09:25	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			12/08/20 09:25	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			12/08/20 09:25	1
Benzene	0.50	U	0.50	0.11	ug/L			12/08/20 09:25	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			12/08/20 09:25	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			12/08/20 09:25	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			12/08/20 09:25	1
Bromoform	0.50	U	0.50	0.080	ug/L			12/08/20 09:25	1
Bromomethane	0.57	U	0.57	0.31	ug/L			12/08/20 09:25	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			12/08/20 09:25	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			12/08/20 09:25	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			12/08/20 09:25	1
Chloroethane	0.50	U	0.50	0.23	ug/L			12/08/20 09:25	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			12/08/20 09:25	1
Chloroform	**0.55**		0.50	0.12	ug/L			12/08/20 09:25	1
Chloromethane	0.50	U	0.50	0.18	ug/L			12/08/20 09:25	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/08/20 09:25	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/08/20 09:25	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			12/08/20 09:25	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			12/08/20 09:25	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			12/08/20 09:25	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			12/08/20 09:25	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/08/20 09:25	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			12/08/20 09:25	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			12/08/20 09:25	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			12/08/20 09:25	1
Naphthalene	0.67	U	0.67	0.080	ug/L			12/08/20 09:25	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			12/08/20 09:25	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-40629-1
SDG: 42594

Client Sample ID: 42594-001

Date Collected: 12/01/20 11:34
Date Received: 12/03/20 09:55

Lab Sample ID: 160-40629-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			12/08/20 09:25	1
o-Xylene	0.50	U	0.50	0.090	ug/L			12/08/20 09:25	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			12/08/20 09:25	1
Styrene	0.50	U	0.50	0.090	ug/L			12/08/20 09:25	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			12/08/20 09:25	1
Tetrachloroethene	**4.3**		0.50	0.14	ug/L			12/08/20 09:25	1
Toluene	0.50	U	0.50	0.11	ug/L			12/08/20 09:25	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			12/08/20 09:25	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			12/08/20 09:25	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			12/08/20 09:25	1
Trichlorofluoromethane	**0.37**	**J**	0.50	0.27	ug/L			12/08/20 09:25	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			12/08/20 09:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*70 - 130*		*12/08/20 09:25*	*1*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*		*12/08/20 09:25*	*1*

Client Sample ID: 42594-002

Date Collected: 12/01/20 11:40
Date Received: 12/03/20 09:55

Lab Sample ID: 160-40629-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/08/20 09:48	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/08/20 09:48	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			12/08/20 09:48	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			12/08/20 09:48	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			12/08/20 09:48	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/08/20 09:48	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/08/20 09:48	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			12/08/20 09:48	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			12/08/20 09:48	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			12/08/20 09:48	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			12/08/20 09:48	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			12/08/20 09:48	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			12/08/20 09:48	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/08/20 09:48	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			12/08/20 09:48	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			12/08/20 09:48	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			12/08/20 09:48	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/08/20 09:48	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			12/08/20 09:48	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/08/20 09:48	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			12/08/20 09:48	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			12/08/20 09:48	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			12/08/20 09:48	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			12/08/20 09:48	1
Benzene	0.50	U	0.50	0.11	ug/L			12/08/20 09:48	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			12/08/20 09:48	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			12/08/20 09:48	1

Client Sample ID: 42594-002

Date Collected: 12/01/20 11:40
Date Received: 12/03/20 09:55

Lab Sample ID: 160-40629-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			12/08/20 09:48	1
Bromoform	0.50	U	0.50	0.080	ug/L			12/08/20 09:48	1
Bromomethane	0.57	U	0.57	0.31	ug/L			12/08/20 09:48	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			12/08/20 09:48	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			12/08/20 09:48	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			12/08/20 09:48	1
Chloroethane	0.50	U	0.50	0.23	ug/L			12/08/20 09:48	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			12/08/20 09:48	1
Chloroform	0.50	U	0.50	0.12	ug/L			12/08/20 09:48	1
Chloromethane	0.50	U	0.50	0.18	ug/L			12/08/20 09:48	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/08/20 09:48	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/08/20 09:48	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			12/08/20 09:48	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			12/08/20 09:48	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			12/08/20 09:48	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			12/08/20 09:48	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/08/20 09:48	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			12/08/20 09:48	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			12/08/20 09:48	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			12/08/20 09:48	1
Naphthalene	0.67	U	0.67	0.080	ug/L			12/08/20 09:48	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			12/08/20 09:48	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			12/08/20 09:48	1
o-Xylene	0.50	U	0.50	0.090	ug/L			12/08/20 09:48	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			12/08/20 09:48	1
Styrene	0.50	U	0.50	0.090	ug/L			12/08/20 09:48	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			12/08/20 09:48	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			12/08/20 09:48	1
Toluene	0.50	U	0.50	0.11	ug/L			12/08/20 09:48	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			12/08/20 09:48	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			12/08/20 09:48	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			12/08/20 09:48	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			12/08/20 09:48	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			12/08/20 09:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*12/08/20 09:48*	*1*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*		*12/08/20 09:48*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		12/07/20 14:59	12/09/20 22:52	2

Client Sample ID: 42594-003

Date Collected: 12/01/20 09:00
Date Received: 12/03/20 09:55

Lab Sample ID: 160-40629-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/08/20 10:12	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-40629-1
SDG: 42594

Client Sample ID: 42594-003
Date Collected: 12/01/20 09:00
Date Received: 12/03/20 09:55

Lab Sample ID: 160-40629-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/08/20 10:12	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			12/08/20 10:12	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			12/08/20 10:12	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			12/08/20 10:12	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/08/20 10:12	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/08/20 10:12	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			12/08/20 10:12	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			12/08/20 10:12	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			12/08/20 10:12	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			12/08/20 10:12	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			12/08/20 10:12	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			12/08/20 10:12	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/08/20 10:12	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			12/08/20 10:12	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			12/08/20 10:12	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			12/08/20 10:12	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/08/20 10:12	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			12/08/20 10:12	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/08/20 10:12	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			12/08/20 10:12	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			12/08/20 10:12	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			12/08/20 10:12	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			12/08/20 10:12	1
Benzene	0.50	U	0.50	0.11	ug/L			12/08/20 10:12	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			12/08/20 10:12	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			12/08/20 10:12	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			12/08/20 10:12	1
Bromoform	0.50	U	0.50	0.080	ug/L			12/08/20 10:12	1
Bromomethane	0.57	U	0.57	0.31	ug/L			12/08/20 10:12	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			12/08/20 10:12	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			12/08/20 10:12	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			12/08/20 10:12	1
Chloroethane	0.50	U	0.50	0.23	ug/L			12/08/20 10:12	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			12/08/20 10:12	1
Chloroform	0.50	U	0.50	0.12	ug/L			12/08/20 10:12	1
Chloromethane	0.50	U	0.50	0.18	ug/L			12/08/20 10:12	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/08/20 10:12	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/08/20 10:12	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			12/08/20 10:12	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			12/08/20 10:12	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			12/08/20 10:12	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			12/08/20 10:12	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/08/20 10:12	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			12/08/20 10:12	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			12/08/20 10:12	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			12/08/20 10:12	1
Naphthalene	0.67	U	0.67	0.080	ug/L			12/08/20 10:12	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			12/08/20 10:12	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			12/08/20 10:12	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-40629-1
SDG: 42594

Client Sample ID: 42594-003
Date Collected: 12/01/20 09:00
Date Received: 12/03/20 09:55

Lab Sample ID: 160-40629-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.090	ug/L			12/08/20 10:12	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			12/08/20 10:12	1
Styrene	0.50	U	0.50	0.090	ug/L			12/08/20 10:12	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			12/08/20 10:12	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			12/08/20 10:12	1
Toluene	0.50	U	0.50	0.11	ug/L			12/08/20 10:12	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			12/08/20 10:12	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			12/08/20 10:12	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			12/08/20 10:12	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			12/08/20 10:12	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			12/08/20 10:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*70 - 130*		*12/08/20 10:12*	*1*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*		*12/08/20 10:12*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-745218/7
Matrix: Water
Analysis Batch: 745218

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/08/20 08:58	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/08/20 08:58	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			12/08/20 08:58	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			12/08/20 08:58	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			12/08/20 08:58	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/08/20 08:58	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/08/20 08:58	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			12/08/20 08:58	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			12/08/20 08:58	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			12/08/20 08:58	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			12/08/20 08:58	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			12/08/20 08:58	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			12/08/20 08:58	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/08/20 08:58	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			12/08/20 08:58	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			12/08/20 08:58	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			12/08/20 08:58	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/08/20 08:58	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			12/08/20 08:58	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/08/20 08:58	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			12/08/20 08:58	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			12/08/20 08:58	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			12/08/20 08:58	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			12/08/20 08:58	1
Benzene	0.50	U	0.50	0.11	ug/L			12/08/20 08:58	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			12/08/20 08:58	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			12/08/20 08:58	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			12/08/20 08:58	1
Bromoform	0.50	U	0.50	0.080	ug/L			12/08/20 08:58	1
Bromomethane	0.57	U	0.57	0.31	ug/L			12/08/20 08:58	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			12/08/20 08:58	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			12/08/20 08:58	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			12/08/20 08:58	1
Chloroethane	0.50	U	0.50	0.23	ug/L			12/08/20 08:58	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			12/08/20 08:58	1
Chloroform	0.50	U	0.50	0.12	ug/L			12/08/20 08:58	1
Chloromethane	0.50	U	0.50	0.18	ug/L			12/08/20 08:58	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/08/20 08:58	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/08/20 08:58	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			12/08/20 08:58	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			12/08/20 08:58	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			12/08/20 08:58	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			12/08/20 08:58	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/08/20 08:58	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			12/08/20 08:58	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			12/08/20 08:58	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			12/08/20 08:58	1
Naphthalene	0.67	U	0.67	0.080	ug/L			12/08/20 08:58	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-745218/7
Matrix: Water
Analysis Batch: 745218

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			12/08/20 08:58	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			12/08/20 08:58	1
o-Xylene	0.50	U	0.50	0.090	ug/L			12/08/20 08:58	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			12/08/20 08:58	1
Styrene	0.50	U	0.50	0.090	ug/L			12/08/20 08:58	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			12/08/20 08:58	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			12/08/20 08:58	1
Toluene	0.50	U	0.50	0.11	ug/L			12/08/20 08:58	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			12/08/20 08:58	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			12/08/20 08:58	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			12/08/20 08:58	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			12/08/20 08:58	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			12/08/20 08:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*102*		*70 - 130*		*12/08/20 08:58*	*1*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*		*12/08/20 08:58*	*1*

Lab Sample ID: LCS 460-745218/3
Matrix: Water
Analysis Batch: 745218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	1.90		ug/L		95	70 - 130
1,1,1-Trichloroethane	2.00	1.87		ug/L		94	70 - 130
1,1,2,2-Tetrachloroethane	2.00	1.96		ug/L		98	70 - 130
1,1,2-Trichloroethane	2.00	1.93		ug/L		96	70 - 130
1,1-Dichloroethane	2.00	2.03		ug/L		102	70 - 130
1,1-Dichloroethene	2.00	1.90		ug/L		95	70 - 130
1,1-Dichloropropene	2.00	2.07		ug/L		103	70 - 130
1,2,3-Trichlorobenzene	2.00	1.90		ug/L		95	70 - 130
1,2,3-Trichloropropane	2.00	1.78		ug/L		89	70 - 130
1,2,4-Trichlorobenzene	2.00	1.83		ug/L		91	70 - 130
1,2,4-Trimethylbenzene	2.00	1.93		ug/L		96	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	1.85		ug/L		92	70 - 130
1,2-Dibromoethane	2.00	1.96		ug/L		98	70 - 130
1,2-Dichlorobenzene	2.00	1.85		ug/L		93	70 - 130
1,2-Dichloroethane	2.00	1.99		ug/L		100	70 - 130
1,2-Dichloropropane	2.00	2.02		ug/L		101	70 - 130
1,3,5-Trimethylbenzene	2.00	1.93		ug/L		97	70 - 130
1,3-Dichlorobenzene	2.00	1.88		ug/L		94	70 - 130
1,3-Dichloropropane	2.00	1.99		ug/L		99	70 - 130
1,4-Dichlorobenzene	2.00	1.85		ug/L		93	70 - 130
2,2-Dichloropropane	2.00	1.93		ug/L		96	70 - 130
2-Chlorotoluene	2.00	1.90		ug/L		95	70 - 130
4-Chlorotoluene	2.00	1.95		ug/L		98	70 - 130
4-Isopropyltoluene	2.00	1.94		ug/L		97	70 - 130
Benzene	2.00	2.05		ug/L		102	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-745218/3
Matrix: Water
Analysis Batch: 745218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	2.00	1.90		ug/L		95	70 - 130
Bromochloromethane	2.00	1.96		ug/L		98	70 - 130
Bromodichloromethane	2.00	1.90		ug/L		95	70 - 130
Bromoform	2.00	1.72		ug/L		86	70 - 130
Bromomethane	2.00	1.92		ug/L		96	70 - 130
Carbon tetrachloride	2.00	1.88		ug/L		94	70 - 130
Chlorobenzene	2.00	1.88		ug/L		94	70 - 130
Dibromochloromethane	2.00	1.84		ug/L		92	70 - 130
Chloroethane	2.00	2.00		ug/L		100	70 - 130
Vinyl chloride	2.00	2.01		ug/L		100	70 - 130
Chloroform	2.00	1.96		ug/L		98	70 - 130
Chloromethane	2.00	1.79		ug/L		89	70 - 130
cis-1,2-Dichloroethene	2.00	2.09		ug/L		104	70 - 130
cis-1,3-Dichloropropene	2.00	2.03		ug/L		102	70 - 130
Dibromomethane	2.00	2.00		ug/L		100	70 - 130
Dichlorodifluoromethane	2.00	1.73		ug/L		86	70 - 130
Ethylbenzene	2.00	1.97		ug/L		98	70 - 130
Hexachlorobutadiene	2.00	1.76		ug/L		88	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	2.13		ug/L		107	70 - 130
Methylene Chloride	2.00	2.37		ug/L		119	70 - 130
m-Xylene & p-Xylene	4.00	3.92		ug/L		98	70 - 130
Isopropylbenzene	2.00	1.94		ug/L		97	70 - 130
Naphthalene	2.00	1.92		ug/L		96	70 - 130
n-Butylbenzene	2.00	1.97		ug/L		99	70 - 130
N-Propylbenzene	2.00	1.96		ug/L		98	70 - 130
o-Xylene	2.00	1.90		ug/L		95	70 - 130
sec-Butylbenzene	2.00	2.02		ug/L		101	70 - 130
Styrene	2.00	1.90		ug/L		95	70 - 130
tert-Butylbenzene	2.00	1.86		ug/L		93	70 - 130
Tetrachloroethene	2.00	1.85		ug/L		93	70 - 130
Toluene	2.00	2.02		ug/L		101	70 - 130
trans-1,2-Dichloroethene	2.00	1.97		ug/L		98	70 - 130
trans-1,3-Dichloropropene	2.00	2.03		ug/L		102	70 - 130
Trichloroethene	2.00	2.02		ug/L		101	70 - 130
Trichlorofluoromethane	2.00	1.68		ug/L		84	70 - 130
Xylenes, Total	6.00	5.82		ug/L		97	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*103*		*70 - 130*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*

Lab Sample ID: LCSD 460-745218/4
Matrix: Water
Analysis Batch: 745218

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	1.88		ug/L		94	70 - 130	1	30
1,1,1-Trichloroethane	2.00	1.90		ug/L		95	70 - 130	1	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-745218/4
Matrix: Water
Analysis Batch: 745218

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	2.00	1.92		ug/L		96	70 - 130	2	30
1,1,2-Trichloroethane	2.00	1.94		ug/L		97	70 - 130	1	30
1,1-Dichloroethane	2.00	2.03		ug/L		101	70 - 130	0	30
1,1-Dichloroethene	2.00	1.93		ug/L		96	70 - 130	2	30
1,1-Dichloropropene	2.00	2.02		ug/L		101	70 - 130	2	30
1,2,3-Trichlorobenzene	2.00	1.88		ug/L		94	70 - 130	1	30
1,2,3-Trichloropropane	2.00	1.88		ug/L		94	70 - 130	5	30
1,2,4-Trichlorobenzene	2.00	1.85		ug/L		93	70 - 130	2	30
1,2,4-Trimethylbenzene	2.00	1.93		ug/L		97	70 - 130	0	30
1,2-Dibromo-3-Chloropropane	2.00	1.78		ug/L		89	70 - 130	4	30
1,2-Dibromoethane	2.00	2.04		ug/L		102	70 - 130	4	30
1,2-Dichlorobenzene	2.00	1.87		ug/L		94	70 - 130	1	30
1,2-Dichloroethane	2.00	2.00		ug/L		100	70 - 130	1	30
1,2-Dichloropropane	2.00	2.03		ug/L		101	70 - 130	1	30
1,3,5-Trimethylbenzene	2.00	1.95		ug/L		98	70 - 130	1	30
1,3-Dichlorobenzene	2.00	1.92		ug/L		96	70 - 130	2	30
1,3-Dichloropropane	2.00	2.01		ug/L		101	70 - 130	1	30
1,4-Dichlorobenzene	2.00	1.88		ug/L		94	70 - 130	2	30
2,2-Dichloropropane	2.00	1.94		ug/L		97	70 - 130	1	30
2-Chlorotoluene	2.00	1.91		ug/L		96	70 - 130	0	30
4-Chlorotoluene	2.00	1.98		ug/L		99	70 - 130	1	30
4-Isopropyltoluene	2.00	1.97		ug/L		98	70 - 130	1	30
Benzene	2.00	2.09		ug/L		104	70 - 130	2	30
Bromobenzene	2.00	1.88		ug/L		94	70 - 130	1	30
Bromochloromethane	2.00	2.03		ug/L		101	70 - 130	3	30
Bromodichloromethane	2.00	1.94		ug/L		97	70 - 130	2	30
Bromoform	2.00	1.82		ug/L		91	70 - 130	6	30
Bromomethane	2.00	1.93		ug/L		97	70 - 130	1	30
Carbon tetrachloride	2.00	1.91		ug/L		95	70 - 130	1	30
Chlorobenzene	2.00	1.91		ug/L		95	70 - 130	1	30
Dibromochloromethane	2.00	1.80		ug/L		90	70 - 130	3	30
Chloroethane	2.00	2.04		ug/L		102	70 - 130	2	30
Vinyl chloride	2.00	2.04		ug/L		102	70 - 130	2	30
Chloroform	2.00	1.95		ug/L		97	70 - 130	0	30
Chloromethane	2.00	1.73		ug/L		86	70 - 130	3	30
cis-1,2-Dichloroethene	2.00	2.14		ug/L		107	70 - 130	2	30
cis-1,3-Dichloropropene	2.00	1.97		ug/L		99	70 - 130	3	30
Dibromomethane	2.00	2.04		ug/L		102	70 - 130	2	30
Dichlorodifluoromethane	2.00	1.67		ug/L		83	70 - 130	3	30
Ethylbenzene	2.00	2.00		ug/L		100	70 - 130	1	30
Hexachlorobutadiene	2.00	1.78		ug/L		89	70 - 130	1	30
Methyl-t-Butyl Ether (MTBE)	2.00	2.14		ug/L		107	70 - 130	0	30
Methylene Chloride	2.00	2.31		ug/L		116	70 - 130	2	30
m-Xylene & p-Xylene	4.00	3.95		ug/L		99	70 - 130	1	30
Isopropylbenzene	2.00	1.98		ug/L		99	70 - 130	2	30
Naphthalene	2.00	1.91		ug/L		95	70 - 130	0	30
n-Butylbenzene	2.00	2.05		ug/L		102	70 - 130	4	30
N-Propylbenzene	2.00	1.99		ug/L		100	70 - 130	2	30
o-Xylene	2.00	1.95		ug/L		97	70 - 130	3	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-745218/4
Matrix: Water
Analysis Batch: 745218

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			2.00	2.05		ug/L		103	70 - 130	2	30
Styrene			2.00	1.94		ug/L		97	70 - 130	2	30
tert-Butylbenzene			2.00	1.88		ug/L		94	70 - 130	1	30
Tetrachloroethene			2.00	1.93		ug/L		96	70 - 130	4	30
Toluene			2.00	2.09		ug/L		105	70 - 130	4	30
trans-1,2-Dichloroethene			2.00	1.95		ug/L		97	70 - 130	1	30
trans-1,3-Dichloropropene			2.00	1.97		ug/L		99	70 - 130	3	30
Trichloroethene			2.00	2.04		ug/L		102	70 - 130	1	30
Trichlorofluoromethane			2.00	1.71		ug/L		86	70 - 130	2	30
Xylenes, Total			6.00	5.90		ug/L		98	70 - 130	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*103*		*70 - 130*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-491013/1-A ^2
Matrix: Water
Analysis Batch: 491369

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 491013

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		12/07/20 14:59	12/09/20 22:35	2

Lab Sample ID: LCS 160-491013/2-A ^2
Matrix: Water
Analysis Batch: 491369

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 491013

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	179		ug/L		89	82 - 116		

Lab Sample ID: 160-40629-2 MS
Matrix: Water
Analysis Batch: 491369

Client Sample ID: 42594-002
Prep Type: Total/NA
Prep Batch: 491013

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	175		ug/L		87	82 - 116		

Lab Sample ID: 160-40629-2 MSD
Matrix: Water
Analysis Batch: 491369

Client Sample ID: 42594-002
Prep Type: Total/NA
Prep Batch: 491013

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	177		ug/L		89	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-40629-1
SDG: 42594

GC/MS VOA

Analysis Batch: 745218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40629-1	42594-001	Total/NA	Water	524.2	
160-40629-2	42594-002	Total/NA	Water	524.2	
160-40629-3	42594-003	Total/NA	Water	524.2	
MB 460-745218/7	Method Blank	Total/NA	Water	524.2	
LCS 460-745218/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-745218/4	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 491013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40629-2	42594-002	Total/NA	Water	3010A	
MB 160-491013/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-491013/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-40629-2 MS	42594-002	Total/NA	Water	3010A	
160-40629-2 MSD	42594-002	Total/NA	Water	3010A	

Analysis Batch: 491369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40629-2	42594-002	Total/NA	Water	6020A	491013
MB 160-491013/1-A ^2	Method Blank	Total/NA	Water	6020A	491013
LCS 160-491013/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	491013
160-40629-2 MS	42594-002	Total/NA	Water	6020A	491013
160-40629-2 MSD	42594-002	Total/NA	Water	6020A	491013

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3-B96

Job ID: 160-40629-1
SDG: 42594

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	DCZ								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-40629-1	42594-001	100	100								
160-40629-2	42594-002	99	100								
160-40629-3	42594-003	103	102								
LCS 460-745218/3	Lab Control Sample	103	102								
LCSD 460-745218/4	Lab Control Sample Dup	103	102								
MB 460-745218/7	Method Blank	102	101								

Surrogate Legend

BFB = 4-Bromofluorobenzene
DCZ = 1,2-Dichlorobenzene-d4

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-40863-1
Laboratory Sample Delivery Group: 42639
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Rhonda Ridenhower

Authorized for release by:
1/11/2021 10:36:34 AM
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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-40863-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-40863-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 12/19/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was -1.3 C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42639-001 (160-40863-1), 42639-002 (160-40863-2) and 42639-003 (160-40863-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 12/28/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 160-40863-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

ICP-MS

Sample 42639-002 (160-40863-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 12/29/2020 and analyzed on 01/07/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-40863 Chain of Custody

Requires EDD Y

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42639

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name E. Kramer	Name EPD Field Sampling Team	Name: Test America
Life: No. 20867 Ext 8826	Contact R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No. 22486/23396 Dept ES	Phone 631 344 7129	City Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax rlagattolla@bnl.gov	Contact Ivan Vania
E. Kramer	Sampler: J. Milligan	Phone 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	12/15/20	1120	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1125	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1125	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milligan 12/18/20	Print FedEx	Print
Signature 1300	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FedEx	Print Jacob Boyd	Print
Signature	Signature 12/19/20 09:25	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☒ Disposal by Lab
- ☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-40863-1
SDG Number: 42639

Login Number: 40863
List Number: 1
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-40863-1
SDG Number: 42639

Login Number: 40863
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 12/23/20 12:58 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	tamper evident tape
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.0°C IR11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40863-1
SDG: 42639

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40863-1
SDG: 42639

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40863-1
SDG: 42639

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-40863-1	42639-001	Water	12/15/20 11:20	12/19/20 09:25	
160-40863-2	42639-002	Water	12/15/20 11:25	12/19/20 09:25	
160-40863-3	42639-003	Water	12/15/20 09:00	12/19/20 09:25	

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40863-1
SDG: 42639

Client Sample ID: 42639-001
Date Collected: 12/15/20 11:20
Date Received: 12/19/20 09:25

Lab Sample ID: 160-40863-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/28/20 00:09	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/28/20 00:09	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			12/28/20 00:09	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			12/28/20 00:09	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			12/28/20 00:09	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/28/20 00:09	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/28/20 00:09	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			12/28/20 00:09	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			12/28/20 00:09	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			12/28/20 00:09	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			12/28/20 00:09	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			12/28/20 00:09	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			12/28/20 00:09	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/28/20 00:09	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			12/28/20 00:09	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			12/28/20 00:09	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			12/28/20 00:09	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/28/20 00:09	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			12/28/20 00:09	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/28/20 00:09	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			12/28/20 00:09	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			12/28/20 00:09	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			12/28/20 00:09	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			12/28/20 00:09	1
Benzene	0.50	U	0.50	0.11	ug/L			12/28/20 00:09	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			12/28/20 00:09	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			12/28/20 00:09	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			12/28/20 00:09	1
Bromoform	0.50	U	0.50	0.080	ug/L			12/28/20 00:09	1
Bromomethane	0.57	U	0.57	0.31	ug/L			12/28/20 00:09	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			12/28/20 00:09	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			12/28/20 00:09	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			12/28/20 00:09	1
Chloroethane	0.50	U	0.50	0.23	ug/L			12/28/20 00:09	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			12/28/20 00:09	1
Chloroform	**0.57**		0.50	0.12	ug/L			12/28/20 00:09	1
Chloromethane	0.50	U	0.50	0.18	ug/L			12/28/20 00:09	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/28/20 00:09	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/28/20 00:09	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			12/28/20 00:09	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			12/28/20 00:09	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			12/28/20 00:09	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			12/28/20 00:09	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/28/20 00:09	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			12/28/20 00:09	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			12/28/20 00:09	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			12/28/20 00:09	1
Naphthalene	0.67	U	0.67	0.080	ug/L			12/28/20 00:09	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			12/28/20 00:09	1

Client Sample ID: 42639-001

Lab Sample ID: 160-40863-1

Date Collected: 12/15/20 11:20

Matrix: Water

Date Received: 12/19/20 09:25

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			12/28/20 00:09	1
o-Xylene	0.50	U	0.50	0.090	ug/L			12/28/20 00:09	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			12/28/20 00:09	1
Styrene	0.50	U	0.50	0.090	ug/L			12/28/20 00:09	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			12/28/20 00:09	1
Tetrachloroethene	**4.2**		0.50	0.14	ug/L			12/28/20 00:09	1
Toluene	0.50	U	0.50	0.11	ug/L			12/28/20 00:09	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			12/28/20 00:09	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			12/28/20 00:09	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			12/28/20 00:09	1
Trichlorofluoromethane	**0.35**	**J**	0.50	0.27	ug/L			12/28/20 00:09	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			12/28/20 00:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*70 - 130*		*12/28/20 00:09*	*1*
1,2-Dichlorobenzene-d4	*97*		*70 - 130*		*12/28/20 00:09*	*1*

Client Sample ID: 42639-002

Lab Sample ID: 160-40863-2

Date Collected: 12/15/20 11:25

Matrix: Water

Date Received: 12/19/20 09:25

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/28/20 00:33	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/28/20 00:33	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			12/28/20 00:33	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			12/28/20 00:33	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			12/28/20 00:33	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/28/20 00:33	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/28/20 00:33	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			12/28/20 00:33	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			12/28/20 00:33	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			12/28/20 00:33	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			12/28/20 00:33	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			12/28/20 00:33	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			12/28/20 00:33	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/28/20 00:33	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			12/28/20 00:33	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			12/28/20 00:33	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			12/28/20 00:33	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/28/20 00:33	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			12/28/20 00:33	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/28/20 00:33	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			12/28/20 00:33	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			12/28/20 00:33	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			12/28/20 00:33	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			12/28/20 00:33	1
Benzene	0.50	U	0.50	0.11	ug/L			12/28/20 00:33	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			12/28/20 00:33	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			12/28/20 00:33	1

Client Sample ID: 42639-002

Date Collected: 12/15/20 11:25
Date Received: 12/19/20 09:25

Lab Sample ID: 160-40863-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			12/28/20 00:33	1
Bromoform	0.50	U	0.50	0.080	ug/L			12/28/20 00:33	1
Bromomethane	0.57	U	0.57	0.31	ug/L			12/28/20 00:33	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			12/28/20 00:33	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			12/28/20 00:33	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			12/28/20 00:33	1
Chloroethane	0.50	U	0.50	0.23	ug/L			12/28/20 00:33	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			12/28/20 00:33	1
Chloroform	0.50	U	0.50	0.12	ug/L			12/28/20 00:33	1
Chloromethane	0.50	U	0.50	0.18	ug/L			12/28/20 00:33	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/28/20 00:33	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/28/20 00:33	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			12/28/20 00:33	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			12/28/20 00:33	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			12/28/20 00:33	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			12/28/20 00:33	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/28/20 00:33	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			12/28/20 00:33	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			12/28/20 00:33	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			12/28/20 00:33	1
Naphthalene	0.67	U	0.67	0.080	ug/L			12/28/20 00:33	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			12/28/20 00:33	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			12/28/20 00:33	1
o-Xylene	0.50	U	0.50	0.090	ug/L			12/28/20 00:33	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			12/28/20 00:33	1
Styrene	0.50	U	0.50	0.090	ug/L			12/28/20 00:33	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			12/28/20 00:33	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			12/28/20 00:33	1
Toluene	0.50	U	0.50	0.11	ug/L			12/28/20 00:33	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			12/28/20 00:33	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			12/28/20 00:33	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			12/28/20 00:33	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			12/28/20 00:33	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			12/28/20 00:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*93*		*70 - 130*		*12/28/20 00:33*	*1*
1,2-Dichlorobenzene-d4	*94*		*70 - 130*		*12/28/20 00:33*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		12/29/20 14:03	01/07/21 12:40	2

Client Sample ID: 42639-003

Date Collected: 12/15/20 09:00
Date Received: 12/19/20 09:25

Lab Sample ID: 160-40863-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/28/20 00:56	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40863-1
SDG: 42639

Client Sample ID: 42639-003
Date Collected: 12/15/20 09:00
Date Received: 12/19/20 09:25

Lab Sample ID: 160-40863-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/28/20 00:56	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			12/28/20 00:56	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			12/28/20 00:56	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			12/28/20 00:56	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/28/20 00:56	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/28/20 00:56	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			12/28/20 00:56	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			12/28/20 00:56	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			12/28/20 00:56	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			12/28/20 00:56	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			12/28/20 00:56	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			12/28/20 00:56	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/28/20 00:56	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			12/28/20 00:56	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			12/28/20 00:56	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			12/28/20 00:56	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/28/20 00:56	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			12/28/20 00:56	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/28/20 00:56	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			12/28/20 00:56	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			12/28/20 00:56	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			12/28/20 00:56	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			12/28/20 00:56	1
Benzene	0.50	U	0.50	0.11	ug/L			12/28/20 00:56	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			12/28/20 00:56	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			12/28/20 00:56	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			12/28/20 00:56	1
Bromoform	0.50	U	0.50	0.080	ug/L			12/28/20 00:56	1
Bromomethane	0.57	U	0.57	0.31	ug/L			12/28/20 00:56	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			12/28/20 00:56	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			12/28/20 00:56	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			12/28/20 00:56	1
Chloroethane	0.50	U	0.50	0.23	ug/L			12/28/20 00:56	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			12/28/20 00:56	1
Chloroform	0.50	U	0.50	0.12	ug/L			12/28/20 00:56	1
Chloromethane	0.50	U	0.50	0.18	ug/L			12/28/20 00:56	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/28/20 00:56	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/28/20 00:56	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			12/28/20 00:56	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			12/28/20 00:56	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			12/28/20 00:56	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			12/28/20 00:56	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/28/20 00:56	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			12/28/20 00:56	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			12/28/20 00:56	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			12/28/20 00:56	1
Naphthalene	0.67	U	0.67	0.080	ug/L			12/28/20 00:56	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			12/28/20 00:56	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			12/28/20 00:56	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40863-1
SDG: 42639

Client Sample ID: 42639-003
Date Collected: 12/15/20 09:00
Date Received: 12/19/20 09:25

Lab Sample ID: 160-40863-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.090	ug/L			12/28/20 00:56	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			12/28/20 00:56	1
Styrene	0.50	U	0.50	0.090	ug/L			12/28/20 00:56	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			12/28/20 00:56	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			12/28/20 00:56	1
Toluene	0.50	U	0.50	0.11	ug/L			12/28/20 00:56	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			12/28/20 00:56	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			12/28/20 00:56	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			12/28/20 00:56	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			12/28/20 00:56	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			12/28/20 00:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*70 - 130*		*12/28/20 00:56*	*1*
1,2-Dichlorobenzene-d4	*95*		*70 - 130*		*12/28/20 00:56*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-749665/16
Matrix: Water
Analysis Batch: 749665

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			12/27/20 20:15	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			12/27/20 20:15	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			12/27/20 20:15	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			12/27/20 20:15	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			12/27/20 20:15	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/27/20 20:15	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/27/20 20:15	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			12/27/20 20:15	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			12/27/20 20:15	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			12/27/20 20:15	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			12/27/20 20:15	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			12/27/20 20:15	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			12/27/20 20:15	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/27/20 20:15	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			12/27/20 20:15	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			12/27/20 20:15	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			12/27/20 20:15	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/27/20 20:15	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			12/27/20 20:15	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			12/27/20 20:15	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			12/27/20 20:15	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			12/27/20 20:15	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			12/27/20 20:15	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			12/27/20 20:15	1
Benzene	0.50	U	0.50	0.11	ug/L			12/27/20 20:15	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			12/27/20 20:15	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			12/27/20 20:15	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			12/27/20 20:15	1
Bromoform	0.50	U	0.50	0.080	ug/L			12/27/20 20:15	1
Bromomethane	0.57	U	0.57	0.31	ug/L			12/27/20 20:15	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			12/27/20 20:15	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			12/27/20 20:15	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			12/27/20 20:15	1
Chloroethane	0.50	U	0.50	0.23	ug/L			12/27/20 20:15	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			12/27/20 20:15	1
Chloroform	0.50	U	0.50	0.12	ug/L			12/27/20 20:15	1
Chloromethane	0.50	U	0.50	0.18	ug/L			12/27/20 20:15	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/27/20 20:15	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			12/27/20 20:15	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			12/27/20 20:15	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			12/27/20 20:15	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			12/27/20 20:15	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			12/27/20 20:15	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			12/27/20 20:15	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			12/27/20 20:15	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			12/27/20 20:15	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			12/27/20 20:15	1
Naphthalene	0.67	U	0.67	0.080	ug/L			12/27/20 20:15	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-749665/16
Matrix: Water
Analysis Batch: 749665

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			12/27/20 20:15	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			12/27/20 20:15	1
o-Xylene	0.50	U	0.50	0.090	ug/L			12/27/20 20:15	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			12/27/20 20:15	1
Styrene	0.50	U	0.50	0.090	ug/L			12/27/20 20:15	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			12/27/20 20:15	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			12/27/20 20:15	1
Toluene	0.50	U	0.50	0.11	ug/L			12/27/20 20:15	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			12/27/20 20:15	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			12/27/20 20:15	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			12/27/20 20:15	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			12/27/20 20:15	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			12/27/20 20:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*70 - 130*		*12/27/20 20:15*	*1*
1,2-Dichlorobenzene-d4	*92*		*70 - 130*		*12/27/20 20:15*	*1*

Lab Sample ID: LCS 460-749665/12
Matrix: Water
Analysis Batch: 749665

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	1.87		ug/L		94	70 - 130
1,1,1-Trichloroethane	2.00	1.89		ug/L		95	70 - 130
1,1,2,2-Tetrachloroethane	2.00	1.90		ug/L		95	70 - 130
1,1,2-Trichloroethane	2.00	1.92		ug/L		96	70 - 130
1,1-Dichloroethane	2.00	1.87		ug/L		93	70 - 130
1,1-Dichloroethene	2.00	1.82		ug/L		91	70 - 130
1,1-Dichloropropene	2.00	1.90		ug/L		95	70 - 130
1,2,3-Trichlorobenzene	2.00	2.11		ug/L		106	70 - 130
1,2,3-Trichloropropane	2.00	1.94		ug/L		97	70 - 130
1,2,4-Trichlorobenzene	2.00	1.99		ug/L		99	70 - 130
1,2,4-Trimethylbenzene	2.00	1.80		ug/L		90	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	1.88		ug/L		94	70 - 130
1,2-Dibromoethane	2.00	1.96		ug/L		98	70 - 130
1,2-Dichlorobenzene	2.00	1.80		ug/L		90	70 - 130
1,2-Dichloroethane	2.00	1.93		ug/L		97	70 - 130
1,2-Dichloropropane	2.00	1.98		ug/L		99	70 - 130
1,3,5-Trimethylbenzene	2.00	1.84		ug/L		92	70 - 130
1,3-Dichlorobenzene	2.00	1.90		ug/L		95	70 - 130
1,3-Dichloropropane	2.00	1.88		ug/L		94	70 - 130
1,4-Dichlorobenzene	2.00	1.86		ug/L		93	70 - 130
2,2-Dichloropropane	2.00	1.76		ug/L		88	70 - 130
2-Chlorotoluene	2.00	1.90		ug/L		95	70 - 130
4-Chlorotoluene	2.00	1.84		ug/L		92	70 - 130
4-Isopropyltoluene	2.00	1.77		ug/L		89	70 - 130
Benzene	2.00	1.94		ug/L		97	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-749665/12
Matrix: Water
Analysis Batch: 749665

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	2.00	1.95		ug/L		98	70 - 130
Bromochloromethane	2.00	1.91		ug/L		96	70 - 130
Bromodichloromethane	2.00	1.89		ug/L		95	70 - 130
Bromoform	2.00	1.80		ug/L		90	70 - 130
Bromomethane	2.00	2.02		ug/L		101	70 - 130
Carbon tetrachloride	2.00	1.92		ug/L		96	70 - 130
Chlorobenzene	2.00	1.93		ug/L		96	70 - 130
Dibromochloromethane	2.00	1.84		ug/L		92	70 - 130
Chloroethane	2.00	1.75		ug/L		87	70 - 130
Vinyl chloride	2.00	1.79		ug/L		89	70 - 130
Chloroform	2.00	1.92		ug/L		96	70 - 130
Chloromethane	2.00	1.67		ug/L		84	70 - 130
cis-1,2-Dichloroethene	2.00	1.98		ug/L		99	70 - 130
cis-1,3-Dichloropropene	2.00	1.93		ug/L		96	70 - 130
Dibromomethane	2.00	1.90		ug/L		95	70 - 130
Dichlorodifluoromethane	2.00	1.50		ug/L		75	70 - 130
Ethylbenzene	2.00	1.96		ug/L		98	70 - 130
Hexachlorobutadiene	2.00	1.98		ug/L		99	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	1.96		ug/L		98	70 - 130
Methylene Chloride	2.00	1.87		ug/L		94	70 - 130
m-Xylene & p-Xylene	4.00	3.86		ug/L		97	70 - 130
Isopropylbenzene	2.00	1.94		ug/L		97	70 - 130
Naphthalene	2.00	2.21		ug/L		111	70 - 130
n-Butylbenzene	2.00	1.87		ug/L		94	70 - 130
N-Propylbenzene	2.00	1.88		ug/L		94	70 - 130
o-Xylene	2.00	1.91		ug/L		95	70 - 130
sec-Butylbenzene	2.00	1.98		ug/L		99	70 - 130
Styrene	2.00	1.88		ug/L		94	70 - 130
tert-Butylbenzene	2.00	1.87		ug/L		93	70 - 130
Tetrachloroethene	2.00	2.03		ug/L		102	70 - 130
Toluene	2.00	1.96		ug/L		98	70 - 130
trans-1,2-Dichloroethene	2.00	1.89		ug/L		94	70 - 130
trans-1,3-Dichloropropene	2.00	1.72		ug/L		86	70 - 130
Trichloroethene	2.00	1.95		ug/L		98	70 - 130
Trichlorofluoromethane	2.00	1.82		ug/L		91	70 - 130
Xylenes, Total	6.00	5.77		ug/L		96	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*70 - 130*
1,2-Dichlorobenzene-d4	*96*		*70 - 130*

Lab Sample ID: LCSD 460-749665/13
Matrix: Water
Analysis Batch: 749665

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	2.24		ug/L		112	70 - 130	18	30
1,1,1-Trichloroethane	2.00	2.24		ug/L		112	70 - 130	17	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-749665/13
Matrix: Water
Analysis Batch: 749665

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	2.00	2.17		ug/L		108	70 - 130	13	30
1,1,2-Trichloroethane	2.00	2.32		ug/L		116	70 - 130	19	30
1,1-Dichloroethane	2.00	2.22		ug/L		111	70 - 130	17	30
1,1-Dichloroethene	2.00	2.17		ug/L		109	70 - 130	18	30
1,1-Dichloropropene	2.00	2.27		ug/L		113	70 - 130	18	30
1,2,3-Trichlorobenzene	2.00	2.19		ug/L		110	70 - 130	4	30
1,2,3-Trichloropropane	2.00	2.20		ug/L		110	70 - 130	13	30
1,2,4-Trichlorobenzene	2.00	2.16		ug/L		108	70 - 130	8	30
1,2,4-Trimethylbenzene	2.00	2.05		ug/L		103	70 - 130	13	30
1,2-Dibromo-3-Chloropropane	2.00	2.07		ug/L		104	70 - 130	10	30
1,2-Dibromoethane	2.00	2.27		ug/L		113	70 - 130	15	30
1,2-Dichlorobenzene	2.00	2.12		ug/L		106	70 - 130	16	30
1,2-Dichloroethane	2.00	2.24		ug/L		112	70 - 130	15	30
1,2-Dichloropropane	2.00	2.32		ug/L		116	70 - 130	16	30
1,3,5-Trimethylbenzene	2.00	2.13		ug/L		107	70 - 130	15	30
1,3-Dichlorobenzene	2.00	2.19		ug/L		110	70 - 130	15	30
1,3-Dichloropropane	2.00	2.27		ug/L		114	70 - 130	19	30
1,4-Dichlorobenzene	2.00	2.18		ug/L		109	70 - 130	16	30
2,2-Dichloropropane	2.00	2.03		ug/L		101	70 - 130	14	30
2-Chlorotoluene	2.00	2.15		ug/L		108	70 - 130	12	30
4-Chlorotoluene	2.00	2.17		ug/L		109	70 - 130	17	30
4-Isopropyltoluene	2.00	2.06		ug/L		103	70 - 130	15	30
Benzene	2.00	2.31		ug/L		115	70 - 130	17	30
Bromobenzene	2.00	2.24		ug/L		112	70 - 130	14	30
Bromochloromethane	2.00	2.23		ug/L		112	70 - 130	16	30
Bromodichloromethane	2.00	2.21		ug/L		111	70 - 130	16	30
Bromoform	2.00	2.21		ug/L		110	70 - 130	21	30
Bromomethane	2.00	2.24		ug/L		112	70 - 130	10	30
Carbon tetrachloride	2.00	2.30		ug/L		115	70 - 130	18	30
Chlorobenzene	2.00	2.22		ug/L		111	70 - 130	14	30
Dibromochloromethane	2.00	2.17		ug/L		109	70 - 130	17	30
Chloroethane	2.00	2.02		ug/L		101	70 - 130	14	30
Vinyl chloride	2.00	2.14		ug/L		107	70 - 130	18	30
Chloroform	2.00	2.26		ug/L		113	70 - 130	16	30
Chloromethane	2.00	1.99		ug/L		99	70 - 130	17	30
cis-1,2-Dichloroethene	2.00	2.28		ug/L		114	70 - 130	14	30
cis-1,3-Dichloropropene	2.00	2.24		ug/L		112	70 - 130	15	30
Dibromomethane	2.00	2.29		ug/L		115	70 - 130	19	30
Dichlorodifluoromethane	2.00	1.85		ug/L		92	70 - 130	21	30
Ethylbenzene	2.00	2.27		ug/L		113	70 - 130	14	30
Hexachlorobutadiene	2.00	2.23		ug/L		112	70 - 130	12	30
Methyl-t-Butyl Ether (MTBE)	2.00	2.33		ug/L		117	70 - 130	17	30
Methylene Chloride	2.00	2.21		ug/L		111	70 - 130	17	30
m-Xylene & p-Xylene	4.00	4.51		ug/L		113	70 - 130	16	30
Isopropylbenzene	2.00	2.28		ug/L		114	70 - 130	16	30
Naphthalene	2.00	2.36		ug/L		118	70 - 130	7	30
n-Butylbenzene	2.00	2.13		ug/L		106	70 - 130	13	30
N-Propylbenzene	2.00	2.20		ug/L		110	70 - 130	16	30
o-Xylene	2.00	2.21		ug/L		111	70 - 130	15	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-749665/13
Matrix: Water
Analysis Batch: 749665

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			2.00	2.33		ug/L		117	70 - 130	16	30
Styrene			2.00	2.18		ug/L		109	70 - 130	14	30
tert-Butylbenzene			2.00	2.18		ug/L		109	70 - 130	15	30
Tetrachloroethene			2.00	2.41		ug/L		121	70 - 130	17	30
Toluene			2.00	2.27		ug/L		113	70 - 130	15	30
trans-1,2-Dichloroethene			2.00	2.19		ug/L		109	70 - 130	15	30
trans-1,3-Dichloropropene			2.00	2.00		ug/L		100	70 - 130	15	30
Trichloroethene			2.00	2.28		ug/L		114	70 - 130	15	30
Trichlorofluoromethane			2.00	2.18		ug/L		109	70 - 130	18	30
Xylenes, Total			6.00	6.73		ug/L		112	70 - 130	15	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*98*		*70 - 130*
1,2-Dichlorobenzene-d4	*96*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-493341/1-A ^2
Matrix: Water
Analysis Batch: 494264

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 493341

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		12/29/20 14:03	01/07/21 12:33	2

Lab Sample ID: LCS 160-493341/2-A ^2
Matrix: Water
Analysis Batch: 494264

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 493341

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	198		ug/L		99	82 - 116		

Lab Sample ID: 160-40863-2 MS
Matrix: Water
Analysis Batch: 494264

Client Sample ID: 42639-002
Prep Type: Total/NA
Prep Batch: 493341

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	190		ug/L		95	82 - 116		

Lab Sample ID: 160-40863-2 MSD
Matrix: Water
Analysis Batch: 494264

Client Sample ID: 42639-002
Prep Type: Total/NA
Prep Batch: 493341

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	188		ug/L		94	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40863-1
SDG: 42639

GC/MS VOA

Analysis Batch: 749665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40863-1	42639-001	Total/NA	Water	524.2	
160-40863-2	42639-002	Total/NA	Water	524.2	
160-40863-3	42639-003	Total/NA	Water	524.2	
MB 460-749665/16	Method Blank	Total/NA	Water	524.2	
LCS 460-749665/12	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-749665/13	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 493341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40863-2	42639-002	Total/NA	Water	3010A	
MB 160-493341/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-493341/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-40863-2 MS	42639-002	Total/NA	Water	3010A	
160-40863-2 MSD	42639-002	Total/NA	Water	3010A	

Analysis Batch: 494264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40863-2	42639-002	Total/NA	Water	6020A	493341
MB 160-493341/1-A ^2	Method Blank	Total/NA	Water	6020A	493341
LCS 160-493341/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	493341
160-40863-2 MS	42639-002	Total/NA	Water	6020A	493341
160-40863-2 MSD	42639-002	Total/NA	Water	6020A	493341

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-40863-1
SDG: 42639

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	DCZ								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-40863-1	42639-001	92	97								
160-40863-2	42639-002	93	94								
160-40863-3	42639-003	94	95								
LCS 460-749665/12	Lab Control Sample	99	96								
LCSD 460-749665/13	Lab Control Sample Dup	98	96								
MB 460-749665/16	Method Blank	92	92								

Surrogate Legend

BFB = 4-Bromofluorobenzene
DCZ = 1,2-Dichlorobenzene-d4

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-40960-1
Laboratory Sample Delivery Group: 42680
Client Project/Site: BNL - OU3 B98

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
2/2/2021 6:11:29 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-40960-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B98

Report Number: 160-40960-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 1/7/2021 9:08 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.1º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42680-001 (160-40960-1), 42680-002 (160-40960-2), 42680-003 (160-40960-3), 42680-004 (160-40960-4), 42680-005 (160-40960-5) and 42680-006 (160-40960-6) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2.

Job ID: 160-40960-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The samples were analyzed on 01/11/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS

Sample 42680-002 (160-40960-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 01/11/2021 and analyzed on 02/01/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-40960 Chain of Custody

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42680

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Millian	Phone: 314-298-8566
2		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	1/6/21	1045	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1050	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1050	W	RTW-1 Effluent	250 ML	p	1	Hno3										X
003	E	G	095-153	0		1106	W	RTW-2 Influent	40 ML	SC	3	HCL					X					
004	E	G	095-155	0		1110	W	RTW-3 Influent	40 ML	SC	3	HCL					X					
005	E	G	095-157	0		1112	W	RTW-4 Influent	40 ML	SC	3	HCL					X					
006	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Millian 1/8/21	Print Fed Ex	Print
Signature 1200	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Fed Ex	Print Mallory O'Gara 1/7/21	Print
Signature	Signature Mallory OGara 0908	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☑ Disposal by Lab
- ☐ Archive For _____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 160-207388.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 160-40960-1
Address: 777 New Durham Road, ,	Due Date Requested: 2/5/2021			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - Project Name	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	524.2_Preserved/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
42680-001 (160-40960-1)	1/6/21	10:45 Eastern		Water			X	3	
42680-002 (160-40960-2)	1/6/21	10:50 Eastern		Water			X	3	
42680-003 (160-40960-3)	1/6/21	11:06 Eastern		Water			X	3	
42680-004 (160-40960-4)	1/6/21	11:10 Eastern		Water			X	3	
42680-005 (160-40960-5)	1/6/21	11:12 Eastern		Water			X	3	
42680-006 (160-40960-6)	1/6/21	09:00 Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Mallory O'Dea	1/7/21 17:30	ETA-STL	[illegible]		
Relinquished by:	Date/Time:	Company	Received by: [illegible]	1/8/21 10:30	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.6 #1

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-40960-1
SDG Number: 42680

Login Number: 40960
List Number: 1
Creator: Greer, Diane A

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-40960-1
SDG Number: 42680

Login Number: 40960
List Number: 2
Creator: Rivera, Kenneth

List Source: Eurofins TestAmerica, Edison
List Creation: 01/09/21 02:04 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.6°C, IR #11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-40960-1	42680-001	Water	01/06/21 10:45	01/07/21 09:08	
160-40960-2	42680-002	Water	01/06/21 10:50	01/07/21 09:08	
160-40960-3	42680-003	Water	01/06/21 11:06	01/07/21 09:08	
160-40960-4	42680-004	Water	01/06/21 11:10	01/07/21 09:08	
160-40960-5	42680-005	Water	01/06/21 11:12	01/07/21 09:08	
160-40960-6	42680-006	Water	01/06/21 09:00	01/07/21 09:08	

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

Client Sample ID: 42680-001
Date Collected: 01/06/21 10:45
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/11/21 10:06	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/11/21 10:06	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			01/11/21 10:06	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			01/11/21 10:06	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			01/11/21 10:06	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			01/11/21 10:06	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 10:06	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			01/11/21 10:06	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			01/11/21 10:06	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			01/11/21 10:06	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			01/11/21 10:06	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			01/11/21 10:06	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			01/11/21 10:06	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			01/11/21 10:06	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			01/11/21 10:06	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			01/11/21 10:06	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			01/11/21 10:06	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 10:06	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			01/11/21 10:06	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 10:06	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			01/11/21 10:06	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			01/11/21 10:06	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			01/11/21 10:06	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			01/11/21 10:06	1
Benzene	0.50	U	0.50	0.11	ug/L			01/11/21 10:06	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			01/11/21 10:06	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			01/11/21 10:06	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			01/11/21 10:06	1
Bromoform	0.50	U	0.50	0.080	ug/L			01/11/21 10:06	1
Bromomethane	0.57	U	0.57	0.31	ug/L			01/11/21 10:06	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			01/11/21 10:06	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			01/11/21 10:06	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			01/11/21 10:06	1
Chloroethane	0.50	U	0.50	0.23	ug/L			01/11/21 10:06	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			01/11/21 10:06	1
Chloroform	**0.53**		0.50	0.12	ug/L			01/11/21 10:06	1
Chloromethane	0.50	U	0.50	0.18	ug/L			01/11/21 10:06	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			01/11/21 10:06	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 10:06	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			01/11/21 10:06	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			01/11/21 10:06	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			01/11/21 10:06	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			01/11/21 10:06	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/11/21 10:06	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			01/11/21 10:06	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			01/11/21 10:06	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 10:06	1
Naphthalene	0.67	U	0.67	0.080	ug/L			01/11/21 10:06	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 10:06	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

Client Sample ID: 42680-001

Date Collected: 01/06/21 10:45
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 10:06	1
o-Xylene	0.50	U	0.50	0.090	ug/L			01/11/21 10:06	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			01/11/21 10:06	1
Styrene	0.50	U	0.50	0.090	ug/L			01/11/21 10:06	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			01/11/21 10:06	1
Tetrachloroethene	**4.1**		0.50	0.14	ug/L			01/11/21 10:06	1
Toluene	0.50	U	0.50	0.11	ug/L			01/11/21 10:06	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			01/11/21 10:06	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			01/11/21 10:06	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			01/11/21 10:06	1
Trichlorofluoromethane	**0.32**	**J**	0.50	0.27	ug/L			01/11/21 10:06	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			01/11/21 10:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*70 - 130*		*01/11/21 10:06*	*1*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*		*01/11/21 10:06*	*1*

Client Sample ID: 42680-002

Date Collected: 01/06/21 10:50
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/11/21 10:30	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/11/21 10:30	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			01/11/21 10:30	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			01/11/21 10:30	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			01/11/21 10:30	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			01/11/21 10:30	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 10:30	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			01/11/21 10:30	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			01/11/21 10:30	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			01/11/21 10:30	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			01/11/21 10:30	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			01/11/21 10:30	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			01/11/21 10:30	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			01/11/21 10:30	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			01/11/21 10:30	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			01/11/21 10:30	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			01/11/21 10:30	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 10:30	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			01/11/21 10:30	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 10:30	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			01/11/21 10:30	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			01/11/21 10:30	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			01/11/21 10:30	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			01/11/21 10:30	1
Benzene	0.50	U	0.50	0.11	ug/L			01/11/21 10:30	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			01/11/21 10:30	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			01/11/21 10:30	1

Client Sample ID: 42680-002

Date Collected: 01/06/21 10:50
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			01/11/21 10:30	1
Bromoform	0.50	U	0.50	0.080	ug/L			01/11/21 10:30	1
Bromomethane	0.57	U	0.57	0.31	ug/L			01/11/21 10:30	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			01/11/21 10:30	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			01/11/21 10:30	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			01/11/21 10:30	1
Chloroethane	0.50	U	0.50	0.23	ug/L			01/11/21 10:30	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			01/11/21 10:30	1
Chloroform	0.50	U	0.50	0.12	ug/L			01/11/21 10:30	1
Chloromethane	0.50	U	0.50	0.18	ug/L			01/11/21 10:30	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			01/11/21 10:30	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 10:30	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			01/11/21 10:30	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			01/11/21 10:30	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			01/11/21 10:30	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			01/11/21 10:30	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/11/21 10:30	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			01/11/21 10:30	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			01/11/21 10:30	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 10:30	1
Naphthalene	0.67	U	0.67	0.080	ug/L			01/11/21 10:30	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 10:30	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 10:30	1
o-Xylene	0.50	U	0.50	0.090	ug/L			01/11/21 10:30	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			01/11/21 10:30	1
Styrene	0.50	U	0.50	0.090	ug/L			01/11/21 10:30	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			01/11/21 10:30	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			01/11/21 10:30	1
Toluene	0.50	U	0.50	0.11	ug/L			01/11/21 10:30	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			01/11/21 10:30	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			01/11/21 10:30	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			01/11/21 10:30	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			01/11/21 10:30	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			01/11/21 10:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*01/11/21 10:30*	*1*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*01/11/21 10:30*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		01/11/21 11:20	02/01/21 17:08	2

Client Sample ID: 42680-003

Date Collected: 01/06/21 11:06
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/11/21 10:53	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

Client Sample ID: 42680-003
Date Collected: 01/06/21 11:06
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/11/21 10:53	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			01/11/21 10:53	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			01/11/21 10:53	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			01/11/21 10:53	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			01/11/21 10:53	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 10:53	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			01/11/21 10:53	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			01/11/21 10:53	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			01/11/21 10:53	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			01/11/21 10:53	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			01/11/21 10:53	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			01/11/21 10:53	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			01/11/21 10:53	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			01/11/21 10:53	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			01/11/21 10:53	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			01/11/21 10:53	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 10:53	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			01/11/21 10:53	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 10:53	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			01/11/21 10:53	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			01/11/21 10:53	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			01/11/21 10:53	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			01/11/21 10:53	1
Benzene	0.50	U	0.50	0.11	ug/L			01/11/21 10:53	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			01/11/21 10:53	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			01/11/21 10:53	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			01/11/21 10:53	1
Bromoform	0.50	U	0.50	0.080	ug/L			01/11/21 10:53	1
Bromomethane	0.57	U	0.57	0.31	ug/L			01/11/21 10:53	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			01/11/21 10:53	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			01/11/21 10:53	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			01/11/21 10:53	1
Chloroethane	0.50	U	0.50	0.23	ug/L			01/11/21 10:53	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			01/11/21 10:53	1
Chloroform	**0.33**	**J**	0.50	0.12	ug/L			01/11/21 10:53	1
Chloromethane	0.50	U	0.50	0.18	ug/L			01/11/21 10:53	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			01/11/21 10:53	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 10:53	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			01/11/21 10:53	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			01/11/21 10:53	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			01/11/21 10:53	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			01/11/21 10:53	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/11/21 10:53	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			01/11/21 10:53	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			01/11/21 10:53	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 10:53	1
Naphthalene	0.67	U	0.67	0.080	ug/L			01/11/21 10:53	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 10:53	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 10:53	1

Client Sample ID: 42680-003

Date Collected: 01/06/21 11:06
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.090	ug/L			01/11/21 10:53	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			01/11/21 10:53	1
Styrene	0.50	U	0.50	0.090	ug/L			01/11/21 10:53	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			01/11/21 10:53	1
Tetrachloroethene	**0.39**	**J**	0.50	0.14	ug/L			01/11/21 10:53	1
Toluene	0.50	U	0.50	0.11	ug/L			01/11/21 10:53	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			01/11/21 10:53	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			01/11/21 10:53	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			01/11/21 10:53	1
Trichlorofluoromethane	**1.9**		0.50	0.27	ug/L			01/11/21 10:53	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			01/11/21 10:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*70 - 130*		*01/11/21 10:53*	*1*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*		*01/11/21 10:53*	*1*

Client Sample ID: 42680-004

Date Collected: 01/06/21 11:10
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/11/21 11:16	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/11/21 11:16	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			01/11/21 11:16	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			01/11/21 11:16	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			01/11/21 11:16	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			01/11/21 11:16	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 11:16	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			01/11/21 11:16	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			01/11/21 11:16	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			01/11/21 11:16	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			01/11/21 11:16	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			01/11/21 11:16	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			01/11/21 11:16	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			01/11/21 11:16	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			01/11/21 11:16	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			01/11/21 11:16	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			01/11/21 11:16	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 11:16	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			01/11/21 11:16	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 11:16	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			01/11/21 11:16	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			01/11/21 11:16	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			01/11/21 11:16	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			01/11/21 11:16	1
Benzene	0.50	U	0.50	0.11	ug/L			01/11/21 11:16	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			01/11/21 11:16	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			01/11/21 11:16	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			01/11/21 11:16	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

Client Sample ID: 42680-004
Date Collected: 01/06/21 11:10
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-4
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.080	ug/L			01/11/21 11:16	1
Bromomethane	0.57	U	0.57	0.31	ug/L			01/11/21 11:16	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			01/11/21 11:16	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			01/11/21 11:16	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			01/11/21 11:16	1
Chloroethane	0.50	U	0.50	0.23	ug/L			01/11/21 11:16	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			01/11/21 11:16	1
Chloroform	**1.0**		0.50	0.12	ug/L			01/11/21 11:16	1
Chloromethane	0.50	U	0.50	0.18	ug/L			01/11/21 11:16	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			01/11/21 11:16	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 11:16	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			01/11/21 11:16	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			01/11/21 11:16	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			01/11/21 11:16	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			01/11/21 11:16	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/11/21 11:16	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			01/11/21 11:16	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			01/11/21 11:16	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 11:16	1
Naphthalene	0.67	U	0.67	0.080	ug/L			01/11/21 11:16	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 11:16	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 11:16	1
o-Xylene	0.50	U	0.50	0.090	ug/L			01/11/21 11:16	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			01/11/21 11:16	1
Styrene	0.50	U	0.50	0.090	ug/L			01/11/21 11:16	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			01/11/21 11:16	1
Tetrachloroethene	**0.19**	**J**	0.50	0.14	ug/L			01/11/21 11:16	1
Toluene	0.50	U	0.50	0.11	ug/L			01/11/21 11:16	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			01/11/21 11:16	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			01/11/21 11:16	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			01/11/21 11:16	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			01/11/21 11:16	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			01/11/21 11:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*01/11/21 11:16*	*1*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*01/11/21 11:16*	*1*

Client Sample ID: 42680-005
Date Collected: 01/06/21 11:12
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/11/21 11:39	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/11/21 11:39	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			01/11/21 11:39	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			01/11/21 11:39	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			01/11/21 11:39	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			01/11/21 11:39	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

Client Sample ID: 42680-005
Date Collected: 01/06/21 11:12
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 11:39	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			01/11/21 11:39	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			01/11/21 11:39	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			01/11/21 11:39	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			01/11/21 11:39	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			01/11/21 11:39	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			01/11/21 11:39	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			01/11/21 11:39	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			01/11/21 11:39	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			01/11/21 11:39	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			01/11/21 11:39	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 11:39	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			01/11/21 11:39	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 11:39	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			01/11/21 11:39	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			01/11/21 11:39	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			01/11/21 11:39	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			01/11/21 11:39	1
Benzene	0.50	U	0.50	0.11	ug/L			01/11/21 11:39	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			01/11/21 11:39	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			01/11/21 11:39	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			01/11/21 11:39	1
Bromoform	0.50	U	0.50	0.080	ug/L			01/11/21 11:39	1
Bromomethane	0.57	U	0.57	0.31	ug/L			01/11/21 11:39	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			01/11/21 11:39	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			01/11/21 11:39	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			01/11/21 11:39	1
Chloroethane	0.50	U	0.50	0.23	ug/L			01/11/21 11:39	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			01/11/21 11:39	1
Chloroform	**1.0**		0.50	0.12	ug/L			01/11/21 11:39	1
Chloromethane	0.50	U	0.50	0.18	ug/L			01/11/21 11:39	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			01/11/21 11:39	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 11:39	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			01/11/21 11:39	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			01/11/21 11:39	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			01/11/21 11:39	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			01/11/21 11:39	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/11/21 11:39	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			01/11/21 11:39	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			01/11/21 11:39	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 11:39	1
Naphthalene	0.67	U	0.67	0.080	ug/L			01/11/21 11:39	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 11:39	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 11:39	1
o-Xylene	0.50	U	0.50	0.090	ug/L			01/11/21 11:39	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			01/11/21 11:39	1
Styrene	0.50	U	0.50	0.090	ug/L			01/11/21 11:39	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			01/11/21 11:39	1
Tetrachloroethene	**0.15**	**J**	0.50	0.14	ug/L			01/11/21 11:39	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

Client Sample ID: 42680-005

Date Collected: 01/06/21 11:12
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Toluene	0.50	U	0.50	0.11	ug/L			01/11/21 11:39	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			01/11/21 11:39	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			01/11/21 11:39	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			01/11/21 11:39	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			01/11/21 11:39	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			01/11/21 11:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*70 - 130*		*01/11/21 11:39*	*1*
1,2-Dichlorobenzene-d4	*110*		*70 - 130*		*01/11/21 11:39*	*1*

Client Sample ID: 42680-006

Date Collected: 01/06/21 09:00
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-6

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/11/21 12:03	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/11/21 12:03	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			01/11/21 12:03	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			01/11/21 12:03	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			01/11/21 12:03	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			01/11/21 12:03	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 12:03	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			01/11/21 12:03	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			01/11/21 12:03	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			01/11/21 12:03	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			01/11/21 12:03	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			01/11/21 12:03	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			01/11/21 12:03	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			01/11/21 12:03	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			01/11/21 12:03	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			01/11/21 12:03	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			01/11/21 12:03	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 12:03	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			01/11/21 12:03	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 12:03	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			01/11/21 12:03	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			01/11/21 12:03	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			01/11/21 12:03	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			01/11/21 12:03	1
Benzene	0.50	U	0.50	0.11	ug/L			01/11/21 12:03	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			01/11/21 12:03	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			01/11/21 12:03	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			01/11/21 12:03	1
Bromoform	0.50	U	0.50	0.080	ug/L			01/11/21 12:03	1
Bromomethane	0.57	U	0.57	0.31	ug/L			01/11/21 12:03	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			01/11/21 12:03	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			01/11/21 12:03	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			01/11/21 12:03	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

Client Sample ID: 42680-006
Date Collected: 01/06/21 09:00
Date Received: 01/07/21 09:08

Lab Sample ID: 160-40960-6
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	0.50	U	0.50	0.23	ug/L			01/11/21 12:03	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			01/11/21 12:03	1
Chloroform	**0.26**	**J**	0.50	0.12	ug/L			01/11/21 12:03	1
Chloromethane	0.50	U	0.50	0.18	ug/L			01/11/21 12:03	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			01/11/21 12:03	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 12:03	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			01/11/21 12:03	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			01/11/21 12:03	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			01/11/21 12:03	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			01/11/21 12:03	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/11/21 12:03	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			01/11/21 12:03	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			01/11/21 12:03	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 12:03	1
Naphthalene	0.67	U	0.67	0.080	ug/L			01/11/21 12:03	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 12:03	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 12:03	1
o-Xylene	0.50	U	0.50	0.090	ug/L			01/11/21 12:03	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			01/11/21 12:03	1
Styrene	0.50	U	0.50	0.090	ug/L			01/11/21 12:03	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			01/11/21 12:03	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			01/11/21 12:03	1
Toluene	0.50	U	0.50	0.11	ug/L			01/11/21 12:03	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			01/11/21 12:03	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			01/11/21 12:03	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			01/11/21 12:03	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			01/11/21 12:03	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			01/11/21 12:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*01/11/21 12:03*	*1*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*01/11/21 12:03*	*1*

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-751937/7
Matrix: Water
Analysis Batch: 751937

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/11/21 08:56	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/11/21 08:56	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			01/11/21 08:56	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			01/11/21 08:56	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			01/11/21 08:56	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			01/11/21 08:56	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 08:56	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			01/11/21 08:56	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			01/11/21 08:56	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			01/11/21 08:56	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			01/11/21 08:56	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			01/11/21 08:56	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			01/11/21 08:56	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			01/11/21 08:56	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			01/11/21 08:56	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			01/11/21 08:56	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			01/11/21 08:56	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 08:56	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			01/11/21 08:56	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/11/21 08:56	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			01/11/21 08:56	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			01/11/21 08:56	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			01/11/21 08:56	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			01/11/21 08:56	1
Benzene	0.50	U	0.50	0.11	ug/L			01/11/21 08:56	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			01/11/21 08:56	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			01/11/21 08:56	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			01/11/21 08:56	1
Bromoform	0.50	U	0.50	0.080	ug/L			01/11/21 08:56	1
Bromomethane	0.57	U	0.57	0.31	ug/L			01/11/21 08:56	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			01/11/21 08:56	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			01/11/21 08:56	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			01/11/21 08:56	1
Chloroethane	0.50	U	0.50	0.23	ug/L			01/11/21 08:56	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			01/11/21 08:56	1
Chloroform	0.50	U	0.50	0.12	ug/L			01/11/21 08:56	1
Chloromethane	0.50	U	0.50	0.18	ug/L			01/11/21 08:56	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			01/11/21 08:56	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/11/21 08:56	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			01/11/21 08:56	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			01/11/21 08:56	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			01/11/21 08:56	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			01/11/21 08:56	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/11/21 08:56	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			01/11/21 08:56	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			01/11/21 08:56	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 08:56	1
Naphthalene	0.67	U	0.67	0.080	ug/L			01/11/21 08:56	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-751937/7
Matrix: Water
Analysis Batch: 751937

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 08:56	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			01/11/21 08:56	1
o-Xylene	0.50	U	0.50	0.090	ug/L			01/11/21 08:56	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			01/11/21 08:56	1
Styrene	0.50	U	0.50	0.090	ug/L			01/11/21 08:56	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			01/11/21 08:56	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			01/11/21 08:56	1
Toluene	0.50	U	0.50	0.11	ug/L			01/11/21 08:56	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			01/11/21 08:56	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			01/11/21 08:56	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			01/11/21 08:56	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			01/11/21 08:56	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			01/11/21 08:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*01/11/21 08:56*	*1*
1,2-Dichlorobenzene-d4	*104*		*70 - 130*		*01/11/21 08:56*	*1*

Lab Sample ID: LCS 460-751937/3
Matrix: Water
Analysis Batch: 751937

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	2.02		ug/L		101	70 - 130
1,1,1-Trichloroethane	2.00	1.95		ug/L		98	70 - 130
1,1,2,2-Tetrachloroethane	2.00	1.85		ug/L		92	70 - 130
1,1,2-Trichloroethane	2.00	1.90		ug/L		95	70 - 130
1,1-Dichloroethane	2.00	1.85		ug/L		93	70 - 130
1,1-Dichloroethene	2.00	1.80		ug/L		90	70 - 130
1,1-Dichloropropene	2.00	1.98		ug/L		99	70 - 130
1,2,3-Trichlorobenzene	2.00	2.04		ug/L		102	70 - 130
1,2,3-Trichloropropane	2.00	2.01		ug/L		101	70 - 130
1,2,4-Trichlorobenzene	2.00	2.12		ug/L		106	70 - 130
1,2,4-Trimethylbenzene	2.00	2.12		ug/L		106	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	1.91		ug/L		95	70 - 130
1,2-Dibromoethane	2.00	1.89		ug/L		94	70 - 130
1,2-Dichlorobenzene	2.00	1.97		ug/L		99	70 - 130
1,2-Dichloroethane	2.00	1.93		ug/L		96	70 - 130
1,2-Dichloropropane	2.00	1.96		ug/L		98	70 - 130
1,3,5-Trimethylbenzene	2.00	2.14		ug/L		107	70 - 130
1,3-Dichlorobenzene	2.00	1.99		ug/L		100	70 - 130
1,3-Dichloropropane	2.00	1.93		ug/L		96	70 - 130
1,4-Dichlorobenzene	2.00	1.98		ug/L		99	70 - 130
2,2-Dichloropropane	2.00	1.92		ug/L		96	70 - 130
2-Chlorotoluene	2.00	1.94		ug/L		97	70 - 130
4-Chlorotoluene	2.00	1.93		ug/L		97	70 - 130
4-Isopropyltoluene	2.00	2.00		ug/L		100	70 - 130
Benzene	2.00	2.07		ug/L		103	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-751937/3
Matrix: Water
Analysis Batch: 751937

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	2.00	1.99		ug/L		99	70 - 130
Bromochloromethane	2.00	1.96		ug/L		98	70 - 130
Bromodichloromethane	2.00	1.85		ug/L		93	70 - 130
Bromoform	2.00	1.88		ug/L		94	70 - 130
Bromomethane	2.00	1.46		ug/L		73	70 - 130
Carbon tetrachloride	2.00	1.99		ug/L		100	70 - 130
Chlorobenzene	2.00	1.97		ug/L		99	70 - 130
Dibromochloromethane	2.00	1.90		ug/L		95	70 - 130
Chloroethane	2.00	1.66		ug/L		83	70 - 130
Vinyl chloride	2.00	1.76		ug/L		88	70 - 130
Chloroform	2.00	1.88		ug/L		94	70 - 130
Chloromethane	2.00	1.89		ug/L		94	70 - 130
cis-1,2-Dichloroethene	2.00	2.04		ug/L		102	70 - 130
cis-1,3-Dichloropropene	2.00	2.12		ug/L		106	70 - 130
Dibromomethane	2.00	1.89		ug/L		94	70 - 130
Dichlorodifluoromethane	2.00	1.66		ug/L		83	70 - 130
Ethylbenzene	2.00	2.03		ug/L		101	70 - 130
Hexachlorobutadiene	2.00	2.06		ug/L		103	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	2.01		ug/L		100	70 - 130
Methylene Chloride	2.00	2.04		ug/L		102	70 - 130
m-Xylene & p-Xylene	4.00	4.16		ug/L		104	70 - 130
Isopropylbenzene	2.00	2.08		ug/L		104	70 - 130
Naphthalene	2.00	2.11		ug/L		105	70 - 130
n-Butylbenzene	2.00	2.16		ug/L		108	70 - 130
N-Propylbenzene	2.00	2.00		ug/L		100	70 - 130
o-Xylene	2.00	2.04		ug/L		102	70 - 130
sec-Butylbenzene	2.00	2.14		ug/L		107	70 - 130
Styrene	2.00	2.04		ug/L		102	70 - 130
tert-Butylbenzene	2.00	2.05		ug/L		103	70 - 130
Tetrachloroethene	2.00	1.98		ug/L		99	70 - 130
Toluene	2.00	2.05		ug/L		103	70 - 130
trans-1,2-Dichloroethene	2.00	1.94		ug/L		97	70 - 130
trans-1,3-Dichloropropene	2.00	1.91		ug/L		96	70 - 130
Trichloroethene	2.00	1.94		ug/L		97	70 - 130
Trichlorofluoromethane	2.00	1.86		ug/L		93	70 - 130
Xylenes, Total	6.00	6.20		ug/L		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*70 - 130*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*

Lab Sample ID: LCSD 460-751937/4
Matrix: Water
Analysis Batch: 751937

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	1.99		ug/L		99	70 - 130	2	30
1,1,1-Trichloroethane	2.00	1.96		ug/L		98	70 - 130	0	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-751937/4
Matrix: Water
Analysis Batch: 751937

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	2.00	1.83		ug/L		91	70 - 130	1	30
1,1,2-Trichloroethane	2.00	1.95		ug/L		98	70 - 130	3	30
1,1-Dichloroethane	2.00	1.91		ug/L		95	70 - 130	3	30
1,1-Dichloroethene	2.00	1.83		ug/L		92	70 - 130	2	30
1,1-Dichloropropene	2.00	1.97		ug/L		99	70 - 130	0	30
1,2,3-Trichlorobenzene	2.00	2.21		ug/L		110	70 - 130	8	30
1,2,3-Trichloropropane	2.00	2.03		ug/L		102	70 - 130	1	30
1,2,4-Trichlorobenzene	2.00	2.19		ug/L		109	70 - 130	3	30
1,2,4-Trimethylbenzene	2.00	2.16		ug/L		108	70 - 130	2	30
1,2-Dibromo-3-Chloropropane	2.00	1.81		ug/L		90	70 - 130	5	30
1,2-Dibromoethane	2.00	1.99		ug/L		99	70 - 130	5	30
1,2-Dichlorobenzene	2.00	2.01		ug/L		100	70 - 130	2	30
1,2-Dichloroethane	2.00	1.91		ug/L		95	70 - 130	1	30
1,2-Dichloropropane	2.00	1.94		ug/L		97	70 - 130	1	30
1,3,5-Trimethylbenzene	2.00	2.14		ug/L		107	70 - 130	0	30
1,3-Dichlorobenzene	2.00	2.05		ug/L		102	70 - 130	3	30
1,3-Dichloropropane	2.00	1.99		ug/L		99	70 - 130	3	30
1,4-Dichlorobenzene	2.00	1.97		ug/L		99	70 - 130	0	30
2,2-Dichloropropane	2.00	1.94		ug/L		97	70 - 130	1	30
2-Chlorotoluene	2.00	1.96		ug/L		98	70 - 130	1	30
4-Chlorotoluene	2.00	1.96		ug/L		98	70 - 130	2	30
4-Isopropyltoluene	2.00	2.03		ug/L		102	70 - 130	2	30
Benzene	2.00	2.08		ug/L		104	70 - 130	1	30
Bromobenzene	2.00	2.07		ug/L		103	70 - 130	4	30
Bromochloromethane	2.00	2.02		ug/L		101	70 - 130	3	30
Bromodichloromethane	2.00	1.95		ug/L		97	70 - 130	5	30
Bromoform	2.00	1.94		ug/L		97	70 - 130	3	30
Bromomethane	2.00	1.53		ug/L		76	70 - 130	5	30
Carbon tetrachloride	2.00	1.99		ug/L		100	70 - 130	0	30
Chlorobenzene	2.00	2.03		ug/L		102	70 - 130	3	30
Dibromochloromethane	2.00	2.05		ug/L		103	70 - 130	8	30
Chloroethane	2.00	1.67		ug/L		84	70 - 130	1	30
Vinyl chloride	2.00	1.80		ug/L		90	70 - 130	3	30
Chloroform	2.00	1.92		ug/L		96	70 - 130	2	30
Chloromethane	2.00	1.93		ug/L		96	70 - 130	2	30
cis-1,2-Dichloroethene	2.00	2.10		ug/L		105	70 - 130	3	30
cis-1,3-Dichloropropene	2.00	2.06		ug/L		103	70 - 130	3	30
Dibromomethane	2.00	1.91		ug/L		96	70 - 130	1	30
Dichlorodifluoromethane	2.00	1.67		ug/L		84	70 - 130	1	30
Ethylbenzene	2.00	2.06		ug/L		103	70 - 130	2	30
Hexachlorobutadiene	2.00	1.92		ug/L		96	70 - 130	7	30
Methyl-t-Butyl Ether (MTBE)	2.00	2.07		ug/L		104	70 - 130	3	30
Methylene Chloride	2.00	2.05		ug/L		103	70 - 130	1	30
m-Xylene & p-Xylene	4.00	4.29		ug/L		107	70 - 130	3	30
Isopropylbenzene	2.00	2.08		ug/L		104	70 - 130	0	30
Naphthalene	2.00	2.25		ug/L		112	70 - 130	6	30
n-Butylbenzene	2.00	2.24		ug/L		112	70 - 130	4	30
N-Propylbenzene	2.00	1.99		ug/L		100	70 - 130	0	30
o-Xylene	2.00	2.06		ug/L		103	70 - 130	1	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-751937/4
Matrix: Water
Analysis Batch: 751937

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			2.00	2.16		ug/L		108	70 - 130	1	30
Styrene			2.00	2.10		ug/L		105	70 - 130	3	30
tert-Butylbenzene			2.00	2.05		ug/L		102	70 - 130	0	30
Tetrachloroethene			2.00	2.05		ug/L		103	70 - 130	4	30
Toluene			2.00	2.12		ug/L		106	70 - 130	3	30
trans-1,2-Dichloroethene			2.00	1.93		ug/L		96	70 - 130	1	30
trans-1,3-Dichloropropene			2.00	1.98		ug/L		99	70 - 130	3	30
Trichloroethene			2.00	1.98		ug/L		99	70 - 130	2	30
Trichlorofluoromethane			2.00	1.82		ug/L		91	70 - 130	2	30
Xylenes, Total			6.00	6.36		ug/L		106	70 - 130	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*70 - 130*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-494562/1-A ^2
Matrix: Water
Analysis Batch: 497377

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 494562

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		01/11/21 11:20	02/01/21 17:01	2

Lab Sample ID: LCS 160-494562/2-A ^2
Matrix: Water
Analysis Batch: 497377

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 494562

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	190		ug/L		95	82 - 116		

Lab Sample ID: 160-40960-2 MS
Matrix: Water
Analysis Batch: 497377

Client Sample ID: 42680-002
Prep Type: Total/NA
Prep Batch: 494562

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	188		ug/L		94	82 - 116		

Lab Sample ID: 160-40960-2 MSD
Matrix: Water
Analysis Batch: 497377

Client Sample ID: 42680-002
Prep Type: Total/NA
Prep Batch: 494562

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	187		ug/L		94	82 - 116	0	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

GC/MS VOA

Analysis Batch: 751937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40960-1	42680-001	Total/NA	Water	524.2	
160-40960-2	42680-002	Total/NA	Water	524.2	
160-40960-3	42680-003	Total/NA	Water	524.2	
160-40960-4	42680-004	Total/NA	Water	524.2	
160-40960-5	42680-005	Total/NA	Water	524.2	
160-40960-6	42680-006	Total/NA	Water	524.2	
MB 460-751937/7	Method Blank	Total/NA	Water	524.2	
LCS 460-751937/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-751937/4	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 494562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40960-2	42680-002	Total/NA	Water	3010A	
MB 160-494562/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-494562/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-40960-2 MS	42680-002	Total/NA	Water	3010A	
160-40960-2 MSD	42680-002	Total/NA	Water	3010A	

Analysis Batch: 497377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40960-2	42680-002	Total/NA	Water	6020A	494562
MB 160-494562/1-A ^2	Method Blank	Total/NA	Water	6020A	494562
LCS 160-494562/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	494562
160-40960-2 MS	42680-002	Total/NA	Water	6020A	494562
160-40960-2 MSD	42680-002	Total/NA	Water	6020A	494562

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 160-40960-1
SDG: 42680

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB	DCZ										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
160-40960-1	42680-001	97	100										
160-40960-2	42680-002	99	106										
160-40960-3	42680-003	98	105										
160-40960-4	42680-004	99	106										
160-40960-5	42680-005	101	110										
160-40960-6	42680-006	99	106										
LCS 460-751937/3	Lab Control Sample	99	102										
LCSD 460-751937/4	Lab Control Sample Dup	101	103										
MB 460-751937/7	Method Blank	99	104										

Surrogate Legend

BFB = 4-Bromofluorobenzene

DCZ = 1,2-Dichlorobenzene-d4

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-41083-1
Laboratory Sample Delivery Group: 42723
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
2/12/2021 9:48:51 AM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-41083-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-41083-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 1/22/2021 9:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -1.9º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42723-001 (160-41083-1) and 42723-002 (160-41083-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 01/27/2021.

Job ID: 160-41083-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Analytical Batch 460-755278:
The continuing calibration verification (CCV) recovered above the upper control limit for Chloromethane. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data was reported: CCVIS 460-755278/2.

The laboratory control sample duplicate (LCSD) recovered outside control limits for Bromomethane, Chloromethane, and Vinyl chloride. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data was reported: LCSD 460-755278/4.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 42723-002 (160-41083-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 02/08/2021 and analyzed on 02/10/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

Method 6020A: preparation batch
Preparation Batch 160-498085, Analytical Batch 160-498400:
Due to linear range check (LRC) failures, the linear range for thallium was lowered to the concentration of the highest calibration standard (40ppb). The LCS and MS/MSD were above the linear range, but were within acceptable recovery limits: (LCS 160-498085/2-A ^2), (280-144760-D-1-C MS ^2), and (280-144760-D-1-D MSD ^2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-41083 Chain of Custody

Requires EDD ☑

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42723

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Mill	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD USE TB-1 From CoC# 42722

Type UID	Smp	Coll	Sample Information: Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information: Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	1/21/21	1035	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1040	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	1040	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0			W	Trip Blank	40 ML	SC	3	HCL					X					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Mill 1/21/21	Print FED EX	Print
Signature 1200	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print Leonel Maravilegas 1/22/21	Print
Signature	Signature 0900	Signature

Contractor Lab Sample Disposal:
❑ Return To Client ☒ Disposal by Lab
❑ Archive For _____ Months

Data Package: ❑ Full ☒ Summary

Turn-Around Time Required:
❑ Rush (1 Day) ☒ 14 Days ❑ 30 Days
❑ 7 Days ❑ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 160-208250.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 160-41083-1
Address: 777 New Durham Road, ,	Due Date Requested: 2/4/2021			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	524.2_Preserved/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
42723-001 (160-41083-1)	1/21/21	10:35 Eastern		Water			X	3	
42723-002 (160-41083-2)	1/21/21	10:40 Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Mellly O Sr	1/22/21 1700	ETA-SR	Aaciemo HA Fedex	1-25-21 900	HAFedson

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.7C

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41083-1
SDG Number: 42723

Login Number: 41083
List Number: 1
Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41083-1
SDG Number: 42723

Login Number: 41083
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 01/25/21 11:49 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.7°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41083-1
SDG: 42723

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41083-1
SDG: 42723

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41083-1
SDG: 42723

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-41083-1	42723-001	Water	01/21/21 10:35	01/22/21 09:00	
160-41083-2	42723-002	Water	01/21/21 10:40	01/22/21 09:00	

Client Sample Results

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41083-1
SDG: 42723

Client Sample ID: 42723-001

Date Collected: 01/21/21 10:35
Date Received: 01/22/21 09:00

Lab Sample ID: 160-41083-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/27/21 05:48	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/27/21 05:48	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			01/27/21 05:48	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			01/27/21 05:48	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			01/27/21 05:48	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			01/27/21 05:48	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/27/21 05:48	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			01/27/21 05:48	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			01/27/21 05:48	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			01/27/21 05:48	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			01/27/21 05:48	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			01/27/21 05:48	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			01/27/21 05:48	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			01/27/21 05:48	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			01/27/21 05:48	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			01/27/21 05:48	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			01/27/21 05:48	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/27/21 05:48	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			01/27/21 05:48	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/27/21 05:48	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			01/27/21 05:48	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			01/27/21 05:48	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			01/27/21 05:48	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			01/27/21 05:48	1
Benzene	0.50	U	0.50	0.11	ug/L			01/27/21 05:48	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			01/27/21 05:48	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			01/27/21 05:48	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			01/27/21 05:48	1
Bromoform	0.50	U	0.50	0.080	ug/L			01/27/21 05:48	1
Bromomethane	0.57	U	0.57	0.31	ug/L			01/27/21 05:48	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			01/27/21 05:48	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			01/27/21 05:48	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			01/27/21 05:48	1
Chloroethane	0.50	U	0.50	0.23	ug/L			01/27/21 05:48	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			01/27/21 05:48	1
Chloroform	**0.58**		0.50	0.12	ug/L			01/27/21 05:48	1
Chloromethane	0.50	U	0.50	0.18	ug/L			01/27/21 05:48	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			01/27/21 05:48	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/27/21 05:48	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			01/27/21 05:48	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			01/27/21 05:48	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			01/27/21 05:48	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			01/27/21 05:48	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/27/21 05:48	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			01/27/21 05:48	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			01/27/21 05:48	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			01/27/21 05:48	1
Naphthalene	0.67	U	0.67	0.080	ug/L			01/27/21 05:48	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			01/27/21 05:48	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41083-1
SDG: 42723

Client Sample ID: 42723-001

Date Collected: 01/21/21 10:35
Date Received: 01/22/21 09:00

Lab Sample ID: 160-41083-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			01/27/21 05:48	1
o-Xylene	0.50	U	0.50	0.090	ug/L			01/27/21 05:48	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			01/27/21 05:48	1
Styrene	0.50	U	0.50	0.090	ug/L			01/27/21 05:48	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			01/27/21 05:48	1
Tetrachloroethene	**3.7**		0.50	0.14	ug/L			01/27/21 05:48	1
Toluene	0.50	U	0.50	0.11	ug/L			01/27/21 05:48	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			01/27/21 05:48	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			01/27/21 05:48	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			01/27/21 05:48	1
Trichlorofluoromethane	**0.32**	**J**	0.50	0.27	ug/L			01/27/21 05:48	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			01/27/21 05:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*70 - 130*		*01/27/21 05:48*	*1*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*		*01/27/21 05:48*	*1*

Client Sample ID: 42723-002

Date Collected: 01/21/21 10:40
Date Received: 01/22/21 09:00

Lab Sample ID: 160-41083-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/27/21 15:06	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/27/21 15:06	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			01/27/21 15:06	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			01/27/21 15:06	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			01/27/21 15:06	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			01/27/21 15:06	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/27/21 15:06	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			01/27/21 15:06	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			01/27/21 15:06	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			01/27/21 15:06	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			01/27/21 15:06	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			01/27/21 15:06	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			01/27/21 15:06	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			01/27/21 15:06	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			01/27/21 15:06	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			01/27/21 15:06	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			01/27/21 15:06	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/27/21 15:06	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			01/27/21 15:06	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/27/21 15:06	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			01/27/21 15:06	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			01/27/21 15:06	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			01/27/21 15:06	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			01/27/21 15:06	1
Benzene	0.50	U	0.50	0.11	ug/L			01/27/21 15:06	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			01/27/21 15:06	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			01/27/21 15:06	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41083-1
SDG: 42723

Client Sample ID: 42723-002
Date Collected: 01/21/21 10:40
Date Received: 01/22/21 09:00

Lab Sample ID: 160-41083-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			01/27/21 15:06	1
Bromoform	0.50	U	0.50	0.080	ug/L			01/27/21 15:06	1
Bromomethane	0.57	U	0.57	0.31	ug/L			01/27/21 15:06	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			01/27/21 15:06	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			01/27/21 15:06	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			01/27/21 15:06	1
Chloroethane	0.50	U	0.50	0.23	ug/L			01/27/21 15:06	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			01/27/21 15:06	1
Chloroform	0.50	U	0.50	0.12	ug/L			01/27/21 15:06	1
Chloromethane	0.50	U	0.50	0.18	ug/L			01/27/21 15:06	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			01/27/21 15:06	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/27/21 15:06	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			01/27/21 15:06	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			01/27/21 15:06	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			01/27/21 15:06	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			01/27/21 15:06	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/27/21 15:06	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			01/27/21 15:06	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			01/27/21 15:06	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			01/27/21 15:06	1
Naphthalene	0.67	U	0.67	0.080	ug/L			01/27/21 15:06	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			01/27/21 15:06	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			01/27/21 15:06	1
o-Xylene	0.50	U	0.50	0.090	ug/L			01/27/21 15:06	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			01/27/21 15:06	1
Styrene	0.50	U	0.50	0.090	ug/L			01/27/21 15:06	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			01/27/21 15:06	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			01/27/21 15:06	1
Toluene	0.50	U	0.50	0.11	ug/L			01/27/21 15:06	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			01/27/21 15:06	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			01/27/21 15:06	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			01/27/21 15:06	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			01/27/21 15:06	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			01/27/21 15:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*70 - 130*		*01/27/21 15:06*	*1*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*01/27/21 15:06*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		02/08/21 15:17	02/10/21 14:52	2

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-755278/8
Matrix: Water
Analysis Batch: 755278

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/26/21 21:25	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/26/21 21:25	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			01/26/21 21:25	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			01/26/21 21:25	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			01/26/21 21:25	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			01/26/21 21:25	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/26/21 21:25	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			01/26/21 21:25	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			01/26/21 21:25	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			01/26/21 21:25	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			01/26/21 21:25	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			01/26/21 21:25	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			01/26/21 21:25	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			01/26/21 21:25	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			01/26/21 21:25	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			01/26/21 21:25	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			01/26/21 21:25	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/26/21 21:25	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			01/26/21 21:25	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/26/21 21:25	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			01/26/21 21:25	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			01/26/21 21:25	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			01/26/21 21:25	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			01/26/21 21:25	1
Benzene	0.50	U	0.50	0.11	ug/L			01/26/21 21:25	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			01/26/21 21:25	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			01/26/21 21:25	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			01/26/21 21:25	1
Bromoform	0.50	U	0.50	0.080	ug/L			01/26/21 21:25	1
Bromomethane	0.57	U	0.57	0.31	ug/L			01/26/21 21:25	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			01/26/21 21:25	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			01/26/21 21:25	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			01/26/21 21:25	1
Chloroethane	0.50	U	0.50	0.23	ug/L			01/26/21 21:25	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			01/26/21 21:25	1
Chloroform	0.50	U	0.50	0.12	ug/L			01/26/21 21:25	1
Chloromethane	0.50	U	0.50	0.18	ug/L			01/26/21 21:25	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			01/26/21 21:25	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/26/21 21:25	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			01/26/21 21:25	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			01/26/21 21:25	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			01/26/21 21:25	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			01/26/21 21:25	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/26/21 21:25	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			01/26/21 21:25	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			01/26/21 21:25	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			01/26/21 21:25	1
Naphthalene	0.67	U	0.67	0.080	ug/L			01/26/21 21:25	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-755278/8
Matrix: Water
Analysis Batch: 755278

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			01/26/21 21:25	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			01/26/21 21:25	1
o-Xylene	0.50	U	0.50	0.090	ug/L			01/26/21 21:25	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			01/26/21 21:25	1
Styrene	0.50	U	0.50	0.090	ug/L			01/26/21 21:25	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			01/26/21 21:25	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			01/26/21 21:25	1
Toluene	0.50	U	0.50	0.11	ug/L			01/26/21 21:25	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			01/26/21 21:25	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			01/26/21 21:25	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			01/26/21 21:25	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			01/26/21 21:25	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			01/26/21 21:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*70 - 130*		*01/26/21 21:25*	*1*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*01/26/21 21:25*	*1*

Lab Sample ID: LCS 460-755278/3
Matrix: Water
Analysis Batch: 755278

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	2.00		ug/L		100	70 - 130
1,1,1-Trichloroethane	2.00	2.00		ug/L		100	70 - 130
1,1,2,2-Tetrachloroethane	2.00	2.15		ug/L		107	70 - 130
1,1,2-Trichloroethane	2.00	2.02		ug/L		101	70 - 130
1,1-Dichloroethane	2.00	2.18		ug/L		109	70 - 130
1,1-Dichloroethene	2.00	2.02		ug/L		101	70 - 130
1,1-Dichloropropene	2.00	2.09		ug/L		105	70 - 130
1,2,3-Trichlorobenzene	2.00	1.74		ug/L		87	70 - 130
1,2,3-Trichloropropane	2.00	2.02		ug/L		101	70 - 130
1,2,4-Trichlorobenzene	2.00	1.81		ug/L		90	70 - 130
1,2,4-Trimethylbenzene	2.00	1.91		ug/L		95	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	1.72		ug/L		86	70 - 130
1,2-Dibromoethane	2.00	1.98		ug/L		99	70 - 130
1,2-Dichlorobenzene	2.00	1.88		ug/L		94	70 - 130
1,2-Dichloroethane	2.00	2.17		ug/L		109	70 - 130
1,2-Dichloropropane	2.00	2.27		ug/L		114	70 - 130
1,3,5-Trimethylbenzene	2.00	1.90		ug/L		95	70 - 130
1,3-Dichlorobenzene	2.00	1.75		ug/L		87	70 - 130
1,3-Dichloropropane	2.00	2.15		ug/L		107	70 - 130
1,4-Dichlorobenzene	2.00	1.84		ug/L		92	70 - 130
2,2-Dichloropropane	2.00	1.92		ug/L		96	70 - 130
2-Chlorotoluene	2.00	1.98		ug/L		99	70 - 130
4-Chlorotoluene	2.00	1.89		ug/L		95	70 - 130
4-Isopropyltoluene	2.00	1.85		ug/L		92	70 - 130
Benzene	2.00	1.99		ug/L		100	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-755278/3
Matrix: Water
Analysis Batch: 755278

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	2.00	1.96		ug/L		98	70 - 130
Bromochloromethane	2.00	1.95		ug/L		97	70 - 130
Bromodichloromethane	2.00	2.07		ug/L		104	70 - 130
Bromoform	2.00	1.97		ug/L		98	70 - 130
Bromomethane	2.00	2.52		ug/L		126	70 - 130
Carbon tetrachloride	2.00	1.94		ug/L		97	70 - 130
Chlorobenzene	2.00	1.84		ug/L		92	70 - 130
Dibromochloromethane	2.00	1.89		ug/L		95	70 - 130
Chloroethane	2.00	2.26		ug/L		113	70 - 130
Vinyl chloride	2.00	2.42		ug/L		121	70 - 130
Chloroform	2.00	2.09		ug/L		105	70 - 130
Chloromethane	2.00	2.45		ug/L		122	70 - 130
cis-1,2-Dichloroethene	2.00	2.06		ug/L		103	70 - 130
cis-1,3-Dichloropropene	2.00	1.95		ug/L		98	70 - 130
Dibromomethane	2.00	2.23		ug/L		112	70 - 130
Dichlorodifluoromethane	2.00	1.81		ug/L		90	70 - 130
Ethylbenzene	2.00	1.83		ug/L		91	70 - 130
Hexachlorobutadiene	2.00	1.68		ug/L		84	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	2.14		ug/L		107	70 - 130
Methylene Chloride	2.00	2.10		ug/L		105	70 - 130
m-Xylene & p-Xylene	4.00	3.70		ug/L		92	70 - 130
Isopropylbenzene	2.00	1.97		ug/L		99	70 - 130
Naphthalene	2.00	1.84		ug/L		92	70 - 130
n-Butylbenzene	2.00	1.94		ug/L		97	70 - 130
N-Propylbenzene	2.00	1.95		ug/L		97	70 - 130
o-Xylene	2.00	1.87		ug/L		94	70 - 130
sec-Butylbenzene	2.00	2.01		ug/L		101	70 - 130
Styrene	2.00	1.87		ug/L		93	70 - 130
tert-Butylbenzene	2.00	1.80		ug/L		90	70 - 130
Tetrachloroethene	2.00	1.79		ug/L		90	70 - 130
Toluene	2.00	1.92		ug/L		96	70 - 130
trans-1,2-Dichloroethene	2.00	1.87		ug/L		93	70 - 130
trans-1,3-Dichloropropene	2.00	1.95		ug/L		98	70 - 130
Trichloroethene	2.00	2.04		ug/L		102	70 - 130
Trichlorofluoromethane	2.00	1.95		ug/L		98	70 - 130
Xylenes, Total	6.00	5.57		ug/L		93	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*106*		*70 - 130*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*

Lab Sample ID: LCSD 460-755278/4
Matrix: Water
Analysis Batch: 755278

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	2.16		ug/L		108	70 - 130	8	30
1,1,1-Trichloroethane	2.00	2.12		ug/L		106	70 - 130	6	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-755278/4
Matrix: Water
Analysis Batch: 755278

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	2.00	2.32		ug/L		116	70 - 130	8	30
1,1,2-Trichloroethane	2.00	2.38		ug/L		119	70 - 130	16	30
1,1-Dichloroethane	2.00	2.37		ug/L		119	70 - 130	9	30
1,1-Dichloroethene	2.00	2.31		ug/L		116	70 - 130	14	30
1,1-Dichloropropene	2.00	2.24		ug/L		112	70 - 130	7	30
1,2,3-Trichlorobenzene	2.00	2.10		ug/L		105	70 - 130	19	30
1,2,3-Trichloropropane	2.00	2.22		ug/L		111	70 - 130	10	30
1,2,4-Trichlorobenzene	2.00	2.04		ug/L		102	70 - 130	12	30
1,2,4-Trimethylbenzene	2.00	2.11		ug/L		106	70 - 130	10	30
1,2-Dibromo-3-Chloropropane	2.00	2.19		ug/L		109	70 - 130	24	30
1,2-Dibromoethane	2.00	2.24		ug/L		112	70 - 130	12	30
1,2-Dichlorobenzene	2.00	2.11		ug/L		106	70 - 130	12	30
1,2-Dichloroethane	2.00	2.27		ug/L		114	70 - 130	4	30
1,2-Dichloropropane	2.00	2.38		ug/L		119	70 - 130	5	30
1,3,5-Trimethylbenzene	2.00	2.13		ug/L		107	70 - 130	12	30
1,3-Dichlorobenzene	2.00	1.99		ug/L		100	70 - 130	13	30
1,3-Dichloropropane	2.00	2.27		ug/L		113	70 - 130	5	30
1,4-Dichlorobenzene	2.00	2.02		ug/L		101	70 - 130	10	30
2,2-Dichloropropane	2.00	2.11		ug/L		105	70 - 130	9	30
2-Chlorotoluene	2.00	2.14		ug/L		107	70 - 130	8	30
4-Chlorotoluene	2.00	2.13		ug/L		107	70 - 130	12	30
4-Isopropyltoluene	2.00	2.13		ug/L		107	70 - 130	14	30
Benzene	2.00	2.19		ug/L		109	70 - 130	9	30
Bromobenzene	2.00	1.94		ug/L		97	70 - 130	1	30
Bromochloromethane	2.00	2.07		ug/L		104	70 - 130	6	30
Bromodichloromethane	2.00	2.32		ug/L		116	70 - 130	11	30
Bromoform	2.00	2.03		ug/L		101	70 - 130	3	30
Bromomethane	2.00	2.79		ug/L		139	70 - 130	10	30
Carbon tetrachloride	2.00	2.08		ug/L		104	70 - 130	7	30
Chlorobenzene	2.00	2.02		ug/L		101	70 - 130	9	30
Dibromochloromethane	2.00	2.07		ug/L		103	70 - 130	9	30
Chloroethane	2.00	2.50		ug/L		125	70 - 130	10	30
Vinyl chloride	2.00	2.65		ug/L		133	70 - 130	9	30
Chloroform	2.00	2.24		ug/L		112	70 - 130	7	30
Chloromethane	2.00	2.64		ug/L		132	70 - 130	7	30
cis-1,2-Dichloroethene	2.00	2.24		ug/L		112	70 - 130	9	30
cis-1,3-Dichloropropene	2.00	2.11		ug/L		106	70 - 130	8	30
Dibromomethane	2.00	2.42		ug/L		121	70 - 130	8	30
Dichlorodifluoromethane	2.00	1.92		ug/L		96	70 - 130	6	30
Ethylbenzene	2.00	2.09		ug/L		105	70 - 130	13	30
Hexachlorobutadiene	2.00	1.96		ug/L		98	70 - 130	15	30
Methyl-t-Butyl Ether (MTBE)	2.00	2.30		ug/L		115	70 - 130	7	30
Methylene Chloride	2.00	2.23		ug/L		111	70 - 130	6	30
m-Xylene & p-Xylene	4.00	4.09		ug/L		102	70 - 130	10	30
Isopropylbenzene	2.00	2.14		ug/L		107	70 - 130	8	30
Naphthalene	2.00	2.12		ug/L		106	70 - 130	14	30
n-Butylbenzene	2.00	2.24		ug/L		112	70 - 130	15	30
N-Propylbenzene	2.00	2.17		ug/L		108	70 - 130	11	30
o-Xylene	2.00	2.07		ug/L		104	70 - 130	10	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-755278/4
Matrix: Water
Analysis Batch: 755278

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			2.00	2.29		ug/L		115	70 - 130	13	30
Styrene			2.00	2.07		ug/L		103	70 - 130	10	30
tert-Butylbenzene			2.00	2.12		ug/L		106	70 - 130	16	30
Tetrachloroethene			2.00	1.95		ug/L		97	70 - 130	8	30
Toluene			2.00	2.13		ug/L		106	70 - 130	10	30
trans-1,2-Dichloroethene			2.00	2.10		ug/L		105	70 - 130	12	30
trans-1,3-Dichloropropene			2.00	2.10		ug/L		105	70 - 130	7	30
Trichloroethene			2.00	2.21		ug/L		111	70 - 130	8	30
Trichlorofluoromethane			2.00	2.18		ug/L		109	70 - 130	11	30
Xylenes, Total			6.00	6.16		ug/L		103	70 - 130	10	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*105*		*70 - 130*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*

Lab Sample ID: MB 460-755372/10
Matrix: Water
Analysis Batch: 755372

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			01/27/21 10:19	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			01/27/21 10:19	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			01/27/21 10:19	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			01/27/21 10:19	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			01/27/21 10:19	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			01/27/21 10:19	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/27/21 10:19	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			01/27/21 10:19	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			01/27/21 10:19	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			01/27/21 10:19	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			01/27/21 10:19	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			01/27/21 10:19	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			01/27/21 10:19	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			01/27/21 10:19	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			01/27/21 10:19	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			01/27/21 10:19	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			01/27/21 10:19	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/27/21 10:19	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			01/27/21 10:19	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			01/27/21 10:19	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			01/27/21 10:19	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			01/27/21 10:19	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			01/27/21 10:19	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			01/27/21 10:19	1
Benzene	0.50	U	0.50	0.11	ug/L			01/27/21 10:19	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			01/27/21 10:19	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			01/27/21 10:19	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			01/27/21 10:19	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-755372/10
Matrix: Water
Analysis Batch: 755372

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.080	ug/L			01/27/21 10:19	1
Bromomethane	0.57	U	0.57	0.31	ug/L			01/27/21 10:19	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			01/27/21 10:19	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			01/27/21 10:19	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			01/27/21 10:19	1
Chloroethane	0.50	U	0.50	0.23	ug/L			01/27/21 10:19	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			01/27/21 10:19	1
Chloroform	0.50	U	0.50	0.12	ug/L			01/27/21 10:19	1
Chloromethane	0.50	U	0.50	0.18	ug/L			01/27/21 10:19	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			01/27/21 10:19	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			01/27/21 10:19	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			01/27/21 10:19	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			01/27/21 10:19	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			01/27/21 10:19	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			01/27/21 10:19	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			01/27/21 10:19	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			01/27/21 10:19	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			01/27/21 10:19	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			01/27/21 10:19	1
Naphthalene	0.67	U	0.67	0.080	ug/L			01/27/21 10:19	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			01/27/21 10:19	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			01/27/21 10:19	1
o-Xylene	0.50	U	0.50	0.090	ug/L			01/27/21 10:19	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			01/27/21 10:19	1
Styrene	0.50	U	0.50	0.090	ug/L			01/27/21 10:19	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			01/27/21 10:19	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			01/27/21 10:19	1
Toluene	0.50	U	0.50	0.11	ug/L			01/27/21 10:19	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			01/27/21 10:19	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			01/27/21 10:19	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			01/27/21 10:19	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			01/27/21 10:19	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			01/27/21 10:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*70 - 130*		*01/27/21 10:19*	*1*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*		*01/27/21 10:19*	*1*

Lab Sample ID: LCS 460-755372/6
Matrix: Water
Analysis Batch: 755372

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	1.94		ug/L		97	70 - 130
1,1,1-Trichloroethane	2.00	1.98		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	2.00	2.15		ug/L		107	70 - 130
1,1,2-Trichloroethane	2.00	2.03		ug/L		101	70 - 130
1,1-Dichloroethane	2.00	2.16		ug/L		108	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-755372/6
Matrix: Water
Analysis Batch: 755372

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	2.00	2.04		ug/L		102	70 - 130
1,1-Dichloropropene	2.00	2.07		ug/L		103	70 - 130
1,2,3-Trichlorobenzene	2.00	2.24		ug/L		112	70 - 130
1,2,3-Trichloropropane	2.00	1.93		ug/L		96	70 - 130
1,2,4-Trichlorobenzene	2.00	2.18		ug/L		109	70 - 130
1,2,4-Trimethylbenzene	2.00	2.18		ug/L		109	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	2.21		ug/L		111	70 - 130
1,2-Dibromoethane	2.00	2.04		ug/L		102	70 - 130
1,2-Dichlorobenzene	2.00	1.94		ug/L		97	70 - 130
1,2-Dichloroethane	2.00	2.16		ug/L		108	70 - 130
1,2-Dichloropropane	2.00	2.24		ug/L		112	70 - 130
1,3,5-Trimethylbenzene	2.00	2.11		ug/L		106	70 - 130
1,3-Dichlorobenzene	2.00	1.88		ug/L		94	70 - 130
1,3-Dichloropropane	2.00	2.17		ug/L		108	70 - 130
1,4-Dichlorobenzene	2.00	1.94		ug/L		97	70 - 130
2,2-Dichloropropane	2.00	1.98		ug/L		99	70 - 130
2-Chlorotoluene	2.00	2.04		ug/L		102	70 - 130
4-Chlorotoluene	2.00	2.00		ug/L		100	70 - 130
4-Isopropyltoluene	2.00	2.30		ug/L		115	70 - 130
Benzene	2.00	1.95		ug/L		97	70 - 130
Bromobenzene	2.00	1.92		ug/L		96	70 - 130
Bromochloromethane	2.00	1.91		ug/L		95	70 - 130
Bromodichloromethane	2.00	2.09		ug/L		105	70 - 130
Bromoform	2.00	1.90		ug/L		95	70 - 130
Bromomethane	2.00	2.16		ug/L		108	70 - 130
Carbon tetrachloride	2.00	1.92		ug/L		96	70 - 130
Chlorobenzene	2.00	1.85		ug/L		92	70 - 130
Dibromochloromethane	2.00	1.95		ug/L		97	70 - 130
Chloroethane	2.00	1.87		ug/L		93	70 - 130
Vinyl chloride	2.00	1.99		ug/L		100	70 - 130
Chloroform	2.00	2.07		ug/L		103	70 - 130
Chloromethane	2.00	1.88		ug/L		94	70 - 130
cis-1,2-Dichloroethene	2.00	2.00		ug/L		100	70 - 130
cis-1,3-Dichloropropene	2.00	1.87		ug/L		94	70 - 130
Dibromomethane	2.00	2.18		ug/L		109	70 - 130
Dichlorodifluoromethane	2.00	1.63		ug/L		81	70 - 130
Ethylbenzene	2.00	1.92		ug/L		96	70 - 130
Hexachlorobutadiene	2.00	1.95		ug/L		97	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	2.04		ug/L		102	70 - 130
Methylene Chloride	2.00	2.00		ug/L		100	70 - 130
m-Xylene & p-Xylene	4.00	3.63		ug/L		91	70 - 130
Isopropylbenzene	2.00	2.01		ug/L		101	70 - 130
Naphthalene	2.00	2.19		ug/L		110	70 - 130
n-Butylbenzene	2.00	2.48		ug/L		124	70 - 130
N-Propylbenzene	2.00	2.08		ug/L		104	70 - 130
o-Xylene	2.00	1.95		ug/L		97	70 - 130
sec-Butylbenzene	2.00	2.33		ug/L		117	70 - 130
Styrene	2.00	1.93		ug/L		96	70 - 130
tert-Butylbenzene	2.00	2.08		ug/L		104	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-755372/6
Matrix: Water
Analysis Batch: 755372

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tetrachloroethene	2.00	1.76		ug/L		88	70 - 130
Toluene	2.00	1.88		ug/L		94	70 - 130
trans-1,2-Dichloroethene	2.00	1.93		ug/L		96	70 - 130
trans-1,3-Dichloropropene	2.00	1.82		ug/L		91	70 - 130
Trichloroethene	2.00	1.97		ug/L		98	70 - 130
Trichlorofluoromethane	2.00	1.67		ug/L		83	70 - 130
Xylenes, Total	6.00	5.57		ug/L		93	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*104*		*70 - 130*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*

Lab Sample ID: LCSD 460-755372/7
Matrix: Water
Analysis Batch: 755372

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	2.00		ug/L		100	70 - 130	3	30
1,1,1-Trichloroethane	2.00	2.02		ug/L		101	70 - 130	2	30
1,1,2,2-Tetrachloroethane	2.00	2.31		ug/L		115	70 - 130	7	30
1,1,2-Trichloroethane	2.00	2.19		ug/L		109	70 - 130	8	30
1,1-Dichloroethane	2.00	2.16		ug/L		108	70 - 130	0	30
1,1-Dichloroethene	2.00	2.18		ug/L		109	70 - 130	7	30
1,1-Dichloropropene	2.00	2.15		ug/L		107	70 - 130	4	30
1,2,3-Trichlorobenzene	2.00	2.29		ug/L		115	70 - 130	2	30
1,2,3-Trichloropropane	2.00	1.88		ug/L		94	70 - 130	3	30
1,2,4-Trichlorobenzene	2.00	2.30		ug/L		115	70 - 130	6	30
1,2,4-Trimethylbenzene	2.00	2.25		ug/L		112	70 - 130	3	30
1,2-Dibromo-3-Chloropropane	2.00	1.85		ug/L		93	70 - 130	18	30
1,2-Dibromoethane	2.00	2.11		ug/L		105	70 - 130	3	30
1,2-Dichlorobenzene	2.00	1.96		ug/L		98	70 - 130	1	30
1,2-Dichloroethane	2.00	2.14		ug/L		107	70 - 130	1	30
1,2-Dichloropropane	2.00	2.21		ug/L		110	70 - 130	2	30
1,3,5-Trimethylbenzene	2.00	2.20		ug/L		110	70 - 130	4	30
1,3-Dichlorobenzene	2.00	1.90		ug/L		95	70 - 130	1	30
1,3-Dichloropropane	2.00	2.16		ug/L		108	70 - 130	0	30
1,4-Dichlorobenzene	2.00	2.04		ug/L		102	70 - 130	5	30
2,2-Dichloropropane	2.00	1.92		ug/L		96	70 - 130	3	30
2-Chlorotoluene	2.00	2.12		ug/L		106	70 - 130	4	30
4-Chlorotoluene	2.00	2.07		ug/L		104	70 - 130	4	30
4-Isopropyltoluene	2.00	2.35		ug/L		118	70 - 130	2	30
Benzene	2.00	2.00		ug/L		100	70 - 130	3	30
Bromobenzene	2.00	1.95		ug/L		97	70 - 130	2	30
Bromochloromethane	2.00	1.81		ug/L		90	70 - 130	6	30
Bromodichloromethane	2.00	2.17		ug/L		109	70 - 130	4	30
Bromoform	2.00	1.98		ug/L		99	70 - 130	4	30
Bromomethane	2.00	2.19		ug/L		109	70 - 130	1	30
Carbon tetrachloride	2.00	1.98		ug/L		99	70 - 130	3	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-755372/7
Matrix: Water
Analysis Batch: 755372

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene	2.00	1.89		ug/L		95	70 - 130	2	30
Dibromochloromethane	2.00	1.98		ug/L		99	70 - 130	2	30
Chloroethane	2.00	1.86		ug/L		93	70 - 130	0	30
Vinyl chloride	2.00	2.07		ug/L		103	70 - 130	4	30
Chloroform	2.00	2.06		ug/L		103	70 - 130	0	30
Chloromethane	2.00	1.86		ug/L		93	70 - 130	1	30
cis-1,2-Dichloroethene	2.00	2.04		ug/L		102	70 - 130	2	30
cis-1,3-Dichloropropene	2.00	1.90		ug/L		95	70 - 130	1	30
Dibromomethane	2.00	2.24		ug/L		112	70 - 130	3	30
Dichlorodifluoromethane	2.00	1.63		ug/L		81	70 - 130	0	30
Ethylbenzene	2.00	1.95		ug/L		98	70 - 130	2	30
Hexachlorobutadiene	2.00	2.08		ug/L		104	70 - 130	6	30
Methyl-t-Butyl Ether (MTBE)	2.00	2.13		ug/L		106	70 - 130	4	30
Methylene Chloride	2.00	1.98		ug/L		99	70 - 130	1	30
m-Xylene & p-Xylene	4.00	3.82		ug/L		95	70 - 130	5	30
Isopropylbenzene	2.00	2.11		ug/L		106	70 - 130	5	30
Naphthalene	2.00	2.28		ug/L		114	70 - 130	4	30
n-Butylbenzene	2.00	2.54		ug/L		127	70 - 130	2	30
N-Propylbenzene	2.00	2.13		ug/L		106	70 - 130	2	30
o-Xylene	2.00	1.98		ug/L		99	70 - 130	1	30
sec-Butylbenzene	2.00	2.39		ug/L		120	70 - 130	3	30
Styrene	2.00	1.98		ug/L		99	70 - 130	3	30
tert-Butylbenzene	2.00	2.22		ug/L		111	70 - 130	7	30
Tetrachloroethene	2.00	1.83		ug/L		91	70 - 130	4	30
Toluene	2.00	2.00		ug/L		100	70 - 130	6	30
trans-1,2-Dichloroethene	2.00	1.90		ug/L		95	70 - 130	1	30
trans-1,3-Dichloropropene	2.00	1.87		ug/L		94	70 - 130	3	30
Trichloroethene	2.00	2.00		ug/L		100	70 - 130	2	30
Trichlorofluoromethane	2.00	1.72		ug/L		86	70 - 130	3	30
Xylenes, Total	6.00	5.79		ug/L		97	70 - 130	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*102*		*70 - 130*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-498085/1-A ^2
Matrix: Water
Analysis Batch: 498400

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 498085

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		02/08/21 15:12	02/10/21 13:20	2

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 160-498085/2-A ^2
Matrix: Water
Analysis Batch: 498400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 498085

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	188		ug/L		94	82 - 116		

Lab Sample ID: 280-144760-D-1-C MS ^2
Matrix: Water
Analysis Batch: 498400

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 498085

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	192		ug/L		96	82 - 116		

Lab Sample ID: 280-144760-D-1-D MSD ^2
Matrix: Water
Analysis Batch: 498400

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 498085

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	205		ug/L		102	82 - 116	6	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41083-1
SDG: 42723

GC/MS VOA

Analysis Batch: 755278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41083-1	42723-001	Total/NA	Water	524.2	
MB 460-755278/8	Method Blank	Total/NA	Water	524.2	
LCS 460-755278/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-755278/4	Lab Control Sample Dup	Total/NA	Water	524.2	

Analysis Batch: 755372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41083-2	42723-002	Total/NA	Water	524.2	
MB 460-755372/10	Method Blank	Total/NA	Water	524.2	
LCS 460-755372/6	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-755372/7	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 498085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41083-2	42723-002	Total/NA	Water	3010A	
MB 160-498085/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-498085/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
280-144760-D-1-C MS ^2	Matrix Spike	Total/NA	Water	3010A	
280-144760-D-1-D MSD ^2	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 498400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41083-2	42723-002	Total/NA	Water	6020A	498085
MB 160-498085/1-A ^2	Method Blank	Total/NA	Water	6020A	498085
LCS 160-498085/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	498085
280-144760-D-1-C MS ^2	Matrix Spike	Total/NA	Water	6020A	498085
280-144760-D-1-D MSD ^2	Matrix Spike Duplicate	Total/NA	Water	6020A	498085

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41083-1
SDG: 42723

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	DCZ								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-41083-1	42723-001	103	101								
160-41083-2	42723-002	105	103								
LCS 460-755278/3	Lab Control Sample	106	101								
LCS 460-755372/6	Lab Control Sample	104	102								
LCSD 460-755278/4	Lab Control Sample Dup	105	103								
LCSD 460-755372/7	Lab Control Sample Dup	102	101								
MB 460-755278/8	Method Blank	101	99								
MB 460-755372/10	Method Blank	104	101								

Surrogate Legend

BFB = 4-Bromofluorobenzene
DCZ = 1,2-Dichlorobenzene-d4

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-41223-1
Laboratory Sample Delivery Group: 42768
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
2/24/2021 11:46:38 AM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-41223-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-41223-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 2/12/2021 9:10 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -0.4° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42768-001 (160-41223-1) and 42768-002 (160-41223-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 02/15/2021 and 02/18/2021.

Job ID: 160-41223-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS

Sample 42768-002 (160-41223-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 02/18/2021 and analyzed on 02/22/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-41223 Chain of Custody

Requires EDD ☑

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42768

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Mulligan	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD use TB-1 from Coc# 42767

Type UID	Smp	Coll	Sample Information: Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information: Name/Description	Cont. Vol/Units	Cont. Type	# of Cont	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	2/10/21	1105	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1110	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1110	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0			W	Trip Blank	40 ML	SC	3	HCL					X					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Howe 2/11/21 1430	Print FedEx	Print
Signature	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FedEx	Print Sierra Worthington 2/12/21	Print
Signature	Signature 0910	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☑ Disposal by Lab
- ☐ Archive For _____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☑ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 160-209625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 160-41223-1
Address: 777 New Durham Road, ,	Due Date Requested: 2/25/2021			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	524.2_Preserved/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
42768-001 (160-41223-1)	2/10/21	11:05 Eastern		Water			X	3	
42768-002 (160-41223-2)	2/10/21	11:10 Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/12/21 1607	EIASTL		2/13/21 1435	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.9°C IR#17

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41223-1
SDG Number: 42768

Login Number: 41223
List Number: 1
Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41223-1
SDG Number: 42768

Login Number: 41223
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 02/15/21 12:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.9°C IR11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41223-1
SDG: 42768

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41223-1
SDG: 42768

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41223-1
SDG: 42768

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-41223-1	42768-001	Water	02/10/21 11:05	02/12/21 09:10	
160-41223-2	42768-002	Water	02/10/21 11:10	02/12/21 09:10	

Client Sample Results

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41223-1
SDG: 42768

Client Sample ID: 42768-001

Date Collected: 02/10/21 11:05
Date Received: 02/12/21 09:10

Lab Sample ID: 160-41223-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/18/21 12:17	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/18/21 12:17	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			02/18/21 12:17	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			02/18/21 12:17	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			02/18/21 12:17	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			02/18/21 12:17	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/18/21 12:17	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			02/18/21 12:17	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			02/18/21 12:17	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			02/18/21 12:17	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			02/18/21 12:17	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			02/18/21 12:17	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			02/18/21 12:17	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			02/18/21 12:17	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			02/18/21 12:17	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			02/18/21 12:17	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			02/18/21 12:17	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/18/21 12:17	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			02/18/21 12:17	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/18/21 12:17	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			02/18/21 12:17	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			02/18/21 12:17	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			02/18/21 12:17	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			02/18/21 12:17	1
Benzene	0.50	U	0.50	0.11	ug/L			02/18/21 12:17	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			02/18/21 12:17	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			02/18/21 12:17	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			02/18/21 12:17	1
Bromoform	0.50	U	0.50	0.080	ug/L			02/18/21 12:17	1
Bromomethane	0.57	U	0.57	0.31	ug/L			02/18/21 12:17	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			02/18/21 12:17	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			02/18/21 12:17	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			02/18/21 12:17	1
Chloroethane	0.50	U	0.50	0.23	ug/L			02/18/21 12:17	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			02/18/21 12:17	1
Chloroform	**0.56**		0.50	0.12	ug/L			02/18/21 12:17	1
Chloromethane	0.50	U	0.50	0.18	ug/L			02/18/21 12:17	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			02/18/21 12:17	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/18/21 12:17	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			02/18/21 12:17	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			02/18/21 12:17	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			02/18/21 12:17	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			02/18/21 12:17	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/18/21 12:17	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			02/18/21 12:17	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			02/18/21 12:17	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			02/18/21 12:17	1
Naphthalene	0.67	U	0.67	0.080	ug/L			02/18/21 12:17	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			02/18/21 12:17	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41223-1
SDG: 42768

Client Sample ID: 42768-001

Date Collected: 02/10/21 11:05
Date Received: 02/12/21 09:10

Lab Sample ID: 160-41223-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			02/18/21 12:17	1
o-Xylene	0.50	U	0.50	0.090	ug/L			02/18/21 12:17	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			02/18/21 12:17	1
Styrene	0.50	U	0.50	0.090	ug/L			02/15/21 21:59	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			02/18/21 12:17	1
Tetrachloroethene	**3.8**		0.50	0.14	ug/L			02/18/21 12:17	1
Toluene	0.50	U	0.50	0.11	ug/L			02/18/21 12:17	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			02/18/21 12:17	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			02/18/21 12:17	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			02/18/21 12:17	1
Trichlorofluoromethane	**0.36**	**J**	0.50	0.27	ug/L			02/18/21 12:17	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			02/18/21 12:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*02/18/21 12:17*	*1*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*02/18/21 12:17*	*1*

Client Sample ID: 42768-002

Date Collected: 02/10/21 11:10
Date Received: 02/12/21 09:10

Lab Sample ID: 160-41223-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/18/21 11:56	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/18/21 11:56	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			02/18/21 11:56	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			02/18/21 11:56	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			02/18/21 11:56	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			02/18/21 11:56	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/18/21 11:56	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			02/18/21 11:56	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			02/18/21 11:56	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			02/18/21 11:56	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			02/18/21 11:56	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			02/18/21 11:56	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			02/18/21 11:56	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			02/18/21 11:56	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			02/18/21 11:56	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			02/18/21 11:56	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			02/18/21 11:56	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/18/21 11:56	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			02/18/21 11:56	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/18/21 11:56	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			02/18/21 11:56	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			02/18/21 11:56	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			02/18/21 11:56	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			02/18/21 11:56	1
Benzene	0.50	U	0.50	0.11	ug/L			02/18/21 11:56	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			02/18/21 11:56	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			02/18/21 11:56	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41223-1
SDG: 42768

Client Sample ID: 42768-002
Date Collected: 02/10/21 11:10
Date Received: 02/12/21 09:10

Lab Sample ID: 160-41223-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			02/18/21 11:56	1
Bromoform	0.50	U	0.50	0.080	ug/L			02/18/21 11:56	1
Bromomethane	0.57	U	0.57	0.31	ug/L			02/18/21 11:56	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			02/18/21 11:56	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			02/18/21 11:56	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			02/18/21 11:56	1
Chloroethane	0.50	U	0.50	0.23	ug/L			02/18/21 11:56	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			02/18/21 11:56	1
Chloroform	0.50	U	0.50	0.12	ug/L			02/18/21 11:56	1
Chloromethane	0.50	U	0.50	0.18	ug/L			02/18/21 11:56	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			02/18/21 11:56	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/18/21 11:56	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			02/18/21 11:56	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			02/18/21 11:56	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			02/18/21 11:56	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			02/18/21 11:56	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/18/21 11:56	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			02/18/21 11:56	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			02/18/21 11:56	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			02/18/21 11:56	1
Naphthalene	0.67	U	0.67	0.080	ug/L			02/18/21 11:56	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			02/18/21 11:56	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			02/18/21 11:56	1
o-Xylene	0.50	U	0.50	0.090	ug/L			02/18/21 11:56	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			02/18/21 11:56	1
Styrene	0.50	U	0.50	0.090	ug/L			02/15/21 22:20	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			02/18/21 11:56	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			02/18/21 11:56	1
Toluene	0.50	U	0.50	0.11	ug/L			02/18/21 11:56	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			02/18/21 11:56	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			02/18/21 11:56	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			02/18/21 11:56	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			02/18/21 11:56	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			02/18/21 11:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*02/18/21 11:56*	*1*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*		*02/18/21 11:56*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		02/18/21 19:04	02/22/21 22:26	2

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-759176/8
Matrix: Water
Analysis Batch: 759176

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/15/21 19:14	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/15/21 19:14	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			02/15/21 19:14	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			02/15/21 19:14	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			02/15/21 19:14	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			02/15/21 19:14	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/15/21 19:14	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			02/15/21 19:14	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			02/15/21 19:14	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			02/15/21 19:14	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			02/15/21 19:14	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			02/15/21 19:14	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			02/15/21 19:14	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			02/15/21 19:14	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			02/15/21 19:14	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			02/15/21 19:14	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			02/15/21 19:14	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/15/21 19:14	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			02/15/21 19:14	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/15/21 19:14	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			02/15/21 19:14	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			02/15/21 19:14	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			02/15/21 19:14	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			02/15/21 19:14	1
Benzene	0.50	U	0.50	0.11	ug/L			02/15/21 19:14	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			02/15/21 19:14	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			02/15/21 19:14	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			02/15/21 19:14	1
Bromoform	0.50	U	0.50	0.080	ug/L			02/15/21 19:14	1
Bromomethane	0.57	U	0.57	0.31	ug/L			02/15/21 19:14	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			02/15/21 19:14	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			02/15/21 19:14	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			02/15/21 19:14	1
Chloroethane	0.50	U	0.50	0.23	ug/L			02/15/21 19:14	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			02/15/21 19:14	1
Chloroform	0.50	U	0.50	0.12	ug/L			02/15/21 19:14	1
Chloromethane	0.50	U	0.50	0.18	ug/L			02/15/21 19:14	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			02/15/21 19:14	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/15/21 19:14	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			02/15/21 19:14	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			02/15/21 19:14	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			02/15/21 19:14	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			02/15/21 19:14	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/15/21 19:14	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			02/15/21 19:14	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			02/15/21 19:14	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			02/15/21 19:14	1
Naphthalene	0.67	U	0.67	0.080	ug/L			02/15/21 19:14	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-759176/8
Matrix: Water
Analysis Batch: 759176

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			02/15/21 19:14	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			02/15/21 19:14	1
o-Xylene	0.50	U	0.50	0.090	ug/L			02/15/21 19:14	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			02/15/21 19:14	1
Styrene	0.50	U	0.50	0.090	ug/L			02/15/21 19:14	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			02/15/21 19:14	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			02/15/21 19:14	1
Toluene	0.50	U	0.50	0.11	ug/L			02/15/21 19:14	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			02/15/21 19:14	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			02/15/21 19:14	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			02/15/21 19:14	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			02/15/21 19:14	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			02/15/21 19:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*70 - 130*		*02/15/21 19:14*	*1*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*		*02/15/21 19:14*	*1*

Lab Sample ID: LCS 460-759176/4
Matrix: Water
Analysis Batch: 759176

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	2.02		ug/L		101	70 - 130
1,1,1-Trichloroethane	2.00	1.82		ug/L		91	70 - 130
1,1,2,2-Tetrachloroethane	2.00	1.88		ug/L		94	70 - 130
1,1,2-Trichloroethane	2.00	2.03		ug/L		101	70 - 130
1,1-Dichloroethane	2.00	1.76		ug/L		88	70 - 130
1,1-Dichloroethene	2.00	1.55		ug/L		78	70 - 130
1,1-Dichloropropene	2.00	1.62		ug/L		81	70 - 130
1,2,3-Trichlorobenzene	2.00	1.85		ug/L		92	70 - 130
1,2,3-Trichloropropane	2.00	1.98		ug/L		99	70 - 130
1,2,4-Trichlorobenzene	2.00	1.76		ug/L		88	70 - 130
1,2,4-Trimethylbenzene	2.00	1.82		ug/L		91	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	1.92		ug/L		96	70 - 130
1,2-Dibromoethane	2.00	1.81		ug/L		91	70 - 130
1,2-Dichlorobenzene	2.00	1.87		ug/L		93	70 - 130
1,2-Dichloroethane	2.00	2.07		ug/L		103	70 - 130
1,2-Dichloropropane	2.00	1.88		ug/L		94	70 - 130
1,3,5-Trimethylbenzene	2.00	1.76		ug/L		88	70 - 130
1,3-Dichlorobenzene	2.00	1.88		ug/L		94	70 - 130
1,3-Dichloropropane	2.00	1.87		ug/L		93	70 - 130
1,4-Dichlorobenzene	2.00	1.93		ug/L		96	70 - 130
2,2-Dichloropropane	2.00	1.81		ug/L		91	70 - 130
2-Chlorotoluene	2.00	1.81		ug/L		91	70 - 130
4-Chlorotoluene	2.00	1.80		ug/L		90	70 - 130
4-Isopropyltoluene	2.00	1.79		ug/L		89	70 - 130
Benzene	2.00	1.78		ug/L		89	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-759176/4
Matrix: Water
Analysis Batch: 759176

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	2.00	1.85		ug/L		92	70 - 130
Bromochloromethane	2.00	1.89		ug/L		94	70 - 130
Bromodichloromethane	2.00	2.07		ug/L		104	70 - 130
Bromoform	2.00	2.18		ug/L		109	70 - 130
Bromomethane	2.00	1.97		ug/L		99	70 - 130
Carbon tetrachloride	2.00	1.88		ug/L		94	70 - 130
Chlorobenzene	2.00	1.83		ug/L		91	70 - 130
Dibromochloromethane	2.00	2.06		ug/L		103	70 - 130
Chloroethane	2.00	1.54		ug/L		77	70 - 130
Vinyl chloride	2.00	1.89		ug/L		94	70 - 130
Chloroform	2.00	1.94		ug/L		97	70 - 130
Chloromethane	2.00	2.75		ug/L		138	70 - 130
cis-1,2-Dichloroethene	2.00	1.75		ug/L		88	70 - 130
cis-1,3-Dichloropropene	2.00	1.99		ug/L		99	70 - 130
Dibromomethane	2.00	1.92		ug/L		96	70 - 130
Dichlorodifluoromethane	2.00	1.39		ug/L		70	70 - 130
Ethylbenzene	2.00	1.87		ug/L		94	70 - 130
Hexachlorobutadiene	2.00	2.00		ug/L		100	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	1.91		ug/L		95	70 - 130
Methylene Chloride	2.00	1.82		ug/L		91	70 - 130
m-Xylene & p-Xylene	4.00	3.50		ug/L		88	70 - 130
Isopropylbenzene	2.00	1.77		ug/L		88	70 - 130
Naphthalene	2.00	1.65		ug/L		83	70 - 130
n-Butylbenzene	2.00	1.82		ug/L		91	70 - 130
N-Propylbenzene	2.00	1.81		ug/L		91	70 - 130
o-Xylene	2.00	1.78		ug/L		89	70 - 130
sec-Butylbenzene	2.00	1.89		ug/L		94	70 - 130
Styrene	2.00	1.50		ug/L		75	70 - 130
tert-Butylbenzene	2.00	1.73		ug/L		87	70 - 130
Tetrachloroethene	2.00	1.81		ug/L		91	70 - 130
Toluene	2.00	1.82		ug/L		91	70 - 130
trans-1,2-Dichloroethene	2.00	1.71		ug/L		86	70 - 130
trans-1,3-Dichloropropene	2.00	2.00		ug/L		100	70 - 130
Trichloroethene	2.00	1.97		ug/L		99	70 - 130
Trichlorofluoromethane	2.00	1.70		ug/L		85	70 - 130
Xylenes, Total	6.00	5.29		ug/L		88	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*106*		*70 - 130*
1,2-Dichlorobenzene-d4	*102*		*70 - 130*

Lab Sample ID: LCSD 460-759176/5
Matrix: Water
Analysis Batch: 759176

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	2.02		ug/L		101	70 - 130	0	30
1,1,1-Trichloroethane	2.00	1.88		ug/L		94	70 - 130	3	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-759176/5
Matrix: Water
Analysis Batch: 759176

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	2.00	1.95		ug/L		97	70 - 130	4	30
1,1,2-Trichloroethane	2.00	1.87		ug/L		94	70 - 130	8	30
1,1-Dichloroethane	2.00	1.76		ug/L		88	70 - 130	0	30
1,1-Dichloroethene	2.00	1.47		ug/L		74	70 - 130	5	30
1,1-Dichloropropene	2.00	1.79		ug/L		90	70 - 130	10	30
1,2,3-Trichlorobenzene	2.00	1.95		ug/L		98	70 - 130	5	30
1,2,3-Trichloropropane	2.00	1.89		ug/L		95	70 - 130	4	30
1,2,4-Trichlorobenzene	2.00	1.92		ug/L		96	70 - 130	9	30
1,2,4-Trimethylbenzene	2.00	1.80		ug/L		90	70 - 130	2	30
1,2-Dibromo-3-Chloropropane	2.00	1.94		ug/L		97	70 - 130	1	30
1,2-Dibromoethane	2.00	1.87		ug/L		93	70 - 130	3	30
1,2-Dichlorobenzene	2.00	1.97		ug/L		99	70 - 130	5	30
1,2-Dichloroethane	2.00	1.97		ug/L		98	70 - 130	5	30
1,2-Dichloropropane	2.00	2.00		ug/L		100	70 - 130	6	30
1,3,5-Trimethylbenzene	2.00	1.75		ug/L		88	70 - 130	0	30
1,3-Dichlorobenzene	2.00	1.92		ug/L		96	70 - 130	2	30
1,3-Dichloropropane	2.00	1.86		ug/L		93	70 - 130	1	30
1,4-Dichlorobenzene	2.00	1.98		ug/L		99	70 - 130	3	30
2,2-Dichloropropane	2.00	1.80		ug/L		90	70 - 130	1	30
2-Chlorotoluene	2.00	1.89		ug/L		95	70 - 130	4	30
4-Chlorotoluene	2.00	1.82		ug/L		91	70 - 130	1	30
4-Isopropyltoluene	2.00	1.80		ug/L		90	70 - 130	1	30
Benzene	2.00	1.78		ug/L		89	70 - 130	0	30
Bromobenzene	2.00	1.90		ug/L		95	70 - 130	3	30
Bromochloromethane	2.00	2.03		ug/L		101	70 - 130	7	30
Bromodichloromethane	2.00	1.96		ug/L		98	70 - 130	5	30
Bromoform	2.00	1.99		ug/L		99	70 - 130	9	30
Bromomethane	2.00	1.93		ug/L		96	70 - 130	2	30
Carbon tetrachloride	2.00	1.79		ug/L		89	70 - 130	5	30
Chlorobenzene	2.00	1.83		ug/L		91	70 - 130	0	30
Dibromochloromethane	2.00	2.02		ug/L		101	70 - 130	2	30
Chloroethane	2.00	1.80		ug/L		90	70 - 130	15	30
Vinyl chloride	2.00	1.88		ug/L		94	70 - 130	1	30
Chloroform	2.00	1.90		ug/L		95	70 - 130	2	30
Chloromethane	2.00	2.48		ug/L		124	70 - 130	10	30
cis-1,2-Dichloroethene	2.00	1.91		ug/L		95	70 - 130	8	30
cis-1,3-Dichloropropene	2.00	1.80		ug/L		90	70 - 130	10	30
Dibromomethane	2.00	2.02		ug/L		101	70 - 130	5	30
Dichlorodifluoromethane	2.00	1.39		ug/L		69	70 - 130	1	30
Ethylbenzene	2.00	1.87		ug/L		93	70 - 130	0	30
Hexachlorobutadiene	2.00	1.86		ug/L		93	70 - 130	7	30
Methyl-t-Butyl Ether (MTBE)	2.00	1.89		ug/L		94	70 - 130	1	30
Methylene Chloride	2.00	2.04		ug/L		102	70 - 130	11	30
m-Xylene & p-Xylene	4.00	3.46		ug/L		86	70 - 130	1	30
Isopropylbenzene	2.00	1.72		ug/L		86	70 - 130	3	30
Naphthalene	2.00	1.75		ug/L		87	70 - 130	6	30
n-Butylbenzene	2.00	1.80		ug/L		90	70 - 130	1	30
N-Propylbenzene	2.00	1.79		ug/L		89	70 - 130	1	30
o-Xylene	2.00	1.73		ug/L		87	70 - 130	3	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-759176/5
Matrix: Water
Analysis Batch: 759176

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			2.00	1.87		ug/L		93	70 - 130	1	30
Styrene			2.00	1.51		ug/L		76	70 - 130	1	30
tert-Butylbenzene			2.00	1.76		ug/L		88	70 - 130	1	30
Tetrachloroethene			2.00	1.79		ug/L		90	70 - 130	1	30
Toluene			2.00	1.81		ug/L		91	70 - 130	0	30
trans-1,2-Dichloroethene			2.00	1.76		ug/L		88	70 - 130	3	30
trans-1,3-Dichloropropene			2.00	1.88		ug/L		94	70 - 130	6	30
Trichloroethene			2.00	1.80		ug/L		90	70 - 130	9	30
Trichlorofluoromethane			2.00	1.74		ug/L		87	70 - 130	2	30
Xylenes, Total			6.00	5.19		ug/L		87	70 - 130	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*107*		*70 - 130*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*

Lab Sample ID: MB 460-759723/9
Matrix: Water
Analysis Batch: 759723

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/18/21 09:32	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/18/21 09:32	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			02/18/21 09:32	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			02/18/21 09:32	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			02/18/21 09:32	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			02/18/21 09:32	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/18/21 09:32	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			02/18/21 09:32	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			02/18/21 09:32	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			02/18/21 09:32	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			02/18/21 09:32	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			02/18/21 09:32	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			02/18/21 09:32	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			02/18/21 09:32	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			02/18/21 09:32	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			02/18/21 09:32	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			02/18/21 09:32	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/18/21 09:32	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			02/18/21 09:32	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/18/21 09:32	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			02/18/21 09:32	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			02/18/21 09:32	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			02/18/21 09:32	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			02/18/21 09:32	1
Benzene	0.50	U	0.50	0.11	ug/L			02/18/21 09:32	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			02/18/21 09:32	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			02/18/21 09:32	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			02/18/21 09:32	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-759723/9
Matrix: Water
Analysis Batch: 759723

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.080	ug/L			02/18/21 09:32	1
Bromomethane	0.57	U	0.57	0.31	ug/L			02/18/21 09:32	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			02/18/21 09:32	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			02/18/21 09:32	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			02/18/21 09:32	1
Chloroethane	0.50	U	0.50	0.23	ug/L			02/18/21 09:32	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			02/18/21 09:32	1
Chloroform	0.50	U	0.50	0.12	ug/L			02/18/21 09:32	1
Chloromethane	0.50	U	0.50	0.18	ug/L			02/18/21 09:32	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			02/18/21 09:32	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/18/21 09:32	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			02/18/21 09:32	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			02/18/21 09:32	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			02/18/21 09:32	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			02/18/21 09:32	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/18/21 09:32	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			02/18/21 09:32	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			02/18/21 09:32	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			02/18/21 09:32	1
Naphthalene	0.67	U	0.67	0.080	ug/L			02/18/21 09:32	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			02/18/21 09:32	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			02/18/21 09:32	1
o-Xylene	0.50	U	0.50	0.090	ug/L			02/18/21 09:32	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			02/18/21 09:32	1
Styrene	0.50	U	0.50	0.090	ug/L			02/18/21 09:32	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			02/18/21 09:32	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			02/18/21 09:32	1
Toluene	0.50	U	0.50	0.11	ug/L			02/18/21 09:32	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			02/18/21 09:32	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			02/18/21 09:32	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			02/18/21 09:32	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			02/18/21 09:32	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			02/18/21 09:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*02/18/21 09:32*	*1*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*		*02/18/21 09:32*	*1*

Lab Sample ID: LCS 460-759723/7
Matrix: Water
Analysis Batch: 759723

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	1.81		ug/L		90	70 - 130
1,1,1-Trichloroethane	2.00	1.67		ug/L		84	70 - 130
1,1,2,2-Tetrachloroethane	2.00	1.52		ug/L		76	70 - 130
1,1,2-Trichloroethane	2.00	1.71		ug/L		86	70 - 130
1,1-Dichloroethane	2.00	1.55		ug/L		78	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-759723/7
Matrix: Water
Analysis Batch: 759723

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	2.00	1.52		ug/L		76	70 - 130
1,1-Dichloropropene	2.00	1.72		ug/L		86	70 - 130
1,2,3-Trichlorobenzene	2.00	1.59		ug/L		80	70 - 130
1,2,3-Trichloropropane	2.00	1.45		ug/L		72	70 - 130
1,2,4-Trichlorobenzene	2.00	1.48		ug/L		74	70 - 130
1,2,4-Trimethylbenzene	2.00	1.67		ug/L		83	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	1.44		ug/L		72	70 - 130
1,2-Dibromoethane	2.00	1.53		ug/L		76	70 - 130
1,2-Dichlorobenzene	2.00	1.62		ug/L		81	70 - 130
1,2-Dichloroethane	2.00	1.65		ug/L		83	70 - 130
1,2-Dichloropropane	2.00	1.62		ug/L		81	70 - 130
1,3,5-Trimethylbenzene	2.00	1.58		ug/L		79	70 - 130
1,3-Dichlorobenzene	2.00	1.62		ug/L		81	70 - 130
1,3-Dichloropropane	2.00	1.63		ug/L		82	70 - 130
1,4-Dichlorobenzene	2.00	1.66		ug/L		83	70 - 130
2,2-Dichloropropane	2.00	1.63		ug/L		82	70 - 130
2-Chlorotoluene	2.00	1.68		ug/L		84	70 - 130
4-Chlorotoluene	2.00	1.61		ug/L		80	70 - 130
4-Isopropyltoluene	2.00	1.66		ug/L		83	70 - 130
Benzene	2.00	1.65		ug/L		82	70 - 130
Bromobenzene	2.00	1.64		ug/L		82	70 - 130
Bromochloromethane	2.00	1.63		ug/L		82	70 - 130
Bromodichloromethane	2.00	1.61		ug/L		80	70 - 130
Bromoform	2.00	1.50		ug/L		75	70 - 130
Bromomethane	2.00	2.00		ug/L		100	70 - 130
Carbon tetrachloride	2.00	1.60		ug/L		80	70 - 130
Chlorobenzene	2.00	1.63		ug/L		82	70 - 130
Dibromochloromethane	2.00	1.64		ug/L		82	70 - 130
Chloroethane	2.00	2.12		ug/L		106	70 - 130
Vinyl chloride	2.00	2.00		ug/L		100	70 - 130
Chloroform	2.00	1.65		ug/L		83	70 - 130
Chloromethane	2.00	1.93		ug/L		96	70 - 130
cis-1,2-Dichloroethene	2.00	1.64		ug/L		82	70 - 130
cis-1,3-Dichloropropene	2.00	1.56		ug/L		78	70 - 130
Dibromomethane	2.00	1.73		ug/L		86	70 - 130
Dichlorodifluoromethane	2.00	1.72		ug/L		86	70 - 130
Ethylbenzene	2.00	1.60		ug/L		80	70 - 130
Hexachlorobutadiene	2.00	1.72		ug/L		86	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	1.62		ug/L		81	70 - 130
Methylene Chloride	2.00	1.60		ug/L		80	70 - 130
m-Xylene & p-Xylene	4.00	3.22		ug/L		81	70 - 130
Isopropylbenzene	2.00	1.66		ug/L		83	70 - 130
Naphthalene	2.00	1.46		ug/L		73	70 - 130
n-Butylbenzene	2.00	1.69		ug/L		85	70 - 130
N-Propylbenzene	2.00	1.62		ug/L		81	70 - 130
o-Xylene	2.00	1.57		ug/L		78	70 - 130
sec-Butylbenzene	2.00	1.73		ug/L		87	70 - 130
Styrene	2.00	1.14		ug/L		57	70 - 130
tert-Butylbenzene	2.00	1.55		ug/L		78	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-759723/7
Matrix: Water
Analysis Batch: 759723

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Tetrachloroethene			2.00	1.69		ug/L		85	70 - 130		
Toluene			2.00	1.62		ug/L		81	70 - 130		
trans-1,2-Dichloroethene			2.00	1.54		ug/L		77	70 - 130		
trans-1,3-Dichloropropene			2.00	1.60		ug/L		80	70 - 130		
Trichloroethene			2.00	1.64		ug/L		82	70 - 130		
Trichlorofluoromethane			2.00	2.01		ug/L		100	70 - 130		
Xylenes, Total			6.00	4.79		ug/L		80	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*97*		*70 - 130*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*

Lab Sample ID: LCSD 460-759723/32
Matrix: Water
Analysis Batch: 759723

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			2.00	1.92		ug/L		96	70 - 130	6	30
1,1,1-Trichloroethane			2.00	1.86		ug/L		93	70 - 130	10	30
1,1,2,2-Tetrachloroethane			2.00	1.77		ug/L		89	70 - 130	15	30
1,1,2-Trichloroethane			2.00	1.71		ug/L		86	70 - 130	0	30
1,1-Dichloroethane			2.00	1.65		ug/L		83	70 - 130	6	30
1,1-Dichloroethene			2.00	1.57		ug/L		79	70 - 130	4	30
1,1-Dichloropropene			2.00	1.71		ug/L		85	70 - 130	1	30
1,2,3-Trichlorobenzene			2.00	1.75		ug/L		88	70 - 130	9	30
1,2,3-Trichloropropane			2.00	1.71		ug/L		85	70 - 130	16	30
1,2,4-Trichlorobenzene			2.00	1.69		ug/L		85	70 - 130	13	30
1,2,4-Trimethylbenzene			2.00	1.62		ug/L		81	70 - 130	3	30
1,2-Dibromo-3-Chloropropane			2.00	1.55		ug/L		77	70 - 130	7	30
1,2-Dibromoethane			2.00	1.68		ug/L		84	70 - 130	9	30
1,2-Dichlorobenzene			2.00	1.75		ug/L		88	70 - 130	8	30
1,2-Dichloroethane			2.00	1.81		ug/L		91	70 - 130	9	30
1,2-Dichloropropane			2.00	1.67		ug/L		84	70 - 130	4	30
1,3,5-Trimethylbenzene			2.00	1.60		ug/L		80	70 - 130	1	30
1,3-Dichlorobenzene			2.00	1.71		ug/L		86	70 - 130	5	30
1,3-Dichloropropane			2.00	1.73		ug/L		86	70 - 130	6	30
1,4-Dichlorobenzene			2.00	1.82		ug/L		91	70 - 130	9	30
2,2-Dichloropropane			2.00	1.60		ug/L		80	70 - 130	2	30
2-Chlorotoluene			2.00	1.69		ug/L		85	70 - 130	1	30
4-Chlorotoluene			2.00	1.72		ug/L		86	70 - 130	6	30
4-Isopropyltoluene			2.00	1.70		ug/L		85	70 - 130	3	30
Benzene			2.00	1.76		ug/L		88	70 - 130	6	30
Bromobenzene			2.00	1.72		ug/L		86	70 - 130	5	30
Bromochloromethane			2.00	1.95		ug/L		97	70 - 130	17	30
Bromodichloromethane			2.00	1.90		ug/L		95	70 - 130	17	30
Bromoform			2.00	1.73		ug/L		87	70 - 130	15	30
Bromomethane			2.00	1.94		ug/L		97	70 - 130	3	30
Carbon tetrachloride			2.00	1.83		ug/L		91	70 - 130	14	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-759723/32
Matrix: Water
Analysis Batch: 759723

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene			2.00	1.70		ug/L		85	70 - 130	4	30
Dibromochloromethane			2.00	1.72		ug/L		86	70 - 130	5	30
Chloroethane			2.00	2.16		ug/L		108	70 - 130	2	30
Vinyl chloride			2.00	2.02		ug/L		101	70 - 130	1	30
Chloroform			2.00	1.86		ug/L		93	70 - 130	12	30
Chloromethane			2.00	2.18		ug/L		109	70 - 130	12	30
cis-1,2-Dichloroethene			2.00	1.79		ug/L		90	70 - 130	9	30
cis-1,3-Dichloropropene			2.00	1.79		ug/L		89	70 - 130	13	30
Dibromomethane			2.00	1.67		ug/L		83	70 - 130	3	30
Dichlorodifluoromethane			2.00	1.52		ug/L		76	70 - 130	12	30
Ethylbenzene			2.00	1.79		ug/L		89	70 - 130	11	30
Hexachlorobutadiene			2.00	1.57		ug/L		79	70 - 130	9	30
Methyl-t-Butyl Ether (MTBE)			2.00	1.82		ug/L		91	70 - 130	12	30
Methylene Chloride			2.00	1.69		ug/L		85	70 - 130	5	30
m-Xylene & p-Xylene			4.00	3.35		ug/L		84	70 - 130	4	30
Isopropylbenzene			2.00	1.69		ug/L		85	70 - 130	2	30
Naphthalene			2.00	1.50		ug/L		75	70 - 130	3	30
n-Butylbenzene			2.00	1.72		ug/L		86	70 - 130	1	30
N-Propylbenzene			2.00	1.68		ug/L		84	70 - 130	4	30
o-Xylene			2.00	1.64		ug/L		82	70 - 130	4	30
sec-Butylbenzene			2.00	1.73		ug/L		86	70 - 130	0	30
Styrene			2.00	1.30		ug/L		65	70 - 130	13	30
tert-Butylbenzene			2.00	1.72		ug/L		86	70 - 130	10	30
Tetrachloroethene			2.00	1.88		ug/L		94	70 - 130	11	30
Toluene			2.00	1.73		ug/L		86	70 - 130	6	30
trans-1,2-Dichloroethene			2.00	1.66		ug/L		83	70 - 130	7	30
trans-1,3-Dichloropropene			2.00	1.67		ug/L		84	70 - 130	4	30
Trichloroethene			2.00	1.76		ug/L		88	70 - 130	7	30
Trichlorofluoromethane			2.00	2.07		ug/L		104	70 - 130	3	30
Xylenes, Total			6.00	4.98		ug/L		83	70 - 130	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*98*		*70 - 130*
1,2-Dichlorobenzene-d4	*104*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-499179/1-A ^2
Matrix: Water
Analysis Batch: 499552

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 499179

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		02/18/21 19:04	02/22/21 21:44	2

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 160-499179/2-A ^2
Matrix: Water
Analysis Batch: 499552

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 499179

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	190		ug/L		95	82 - 116		

Lab Sample ID: 160-41200-H-1-B MS ^2
Matrix: Water
Analysis Batch: 499552

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 499179

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	179		ug/L		90	82 - 116		

Lab Sample ID: 160-41200-H-1-C MSD ^2
Matrix: Water
Analysis Batch: 499552

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 499179

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	187		ug/L		94	82 - 116	4	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41223-1
SDG: 42768

GC/MS VOA

Analysis Batch: 759176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41223-1	42768-001	Total/NA	Water	524.2	
160-41223-2	42768-002	Total/NA	Water	524.2	
MB 460-759176/8	Method Blank	Total/NA	Water	524.2	
LCS 460-759176/4	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-759176/5	Lab Control Sample Dup	Total/NA	Water	524.2	

Analysis Batch: 759723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41223-1	42768-001	Total/NA	Water	524.2	
160-41223-2	42768-002	Total/NA	Water	524.2	
MB 460-759723/9	Method Blank	Total/NA	Water	524.2	
LCS 460-759723/7	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-759723/32	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 499179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41223-2	42768-002	Total/NA	Water	3010A	
MB 160-499179/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-499179/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-41200-H-1-B MS ^2	Matrix Spike	Total/NA	Water	3010A	
160-41200-H-1-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 499552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41223-2	42768-002	Total/NA	Water	6020A	499179
MB 160-499179/1-A ^2	Method Blank	Total/NA	Water	6020A	499179
LCS 160-499179/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	499179
160-41200-H-1-B MS ^2	Matrix Spike	Total/NA	Water	6020A	499179
160-41200-H-1-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	6020A	499179

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41223-1
SDG: 42768

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	DCZ								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-41223-1	42768-001	99	103								
160-41223-2	42768-002	99	98								
LCS 460-759176/4	Lab Control Sample	106	102								
LCS 460-759723/7	Lab Control Sample	97	100								
LCSD 460-759176/5	Lab Control Sample Dup	107	103								
LCSD 460-759723/32	Lab Control Sample Dup	98	104								
MB 460-759176/8	Method Blank	100	98								
MB 460-759723/9	Method Blank	99	100								

Surrogate Legend

BFB = 4-Bromofluorobenzene
DCZ = 1,2-Dichlorobenzene-d4

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ANALYTICAL REPORT

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Tel: (314)298-8566

Laboratory Job ID: 160-41301-1
Laboratory Sample Delivery Group: 42791
Client Project/Site: BNL - OU3 B96

For:
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Attn: Larry Singh

Authorized for release by:
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-41301-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-41301-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 2/24/2021 12:42 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -0.7º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42791-001 (160-41301-1) and 42791-002 (160-41301-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 02/26/2021.

Job ID: 160-41301-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS

Sample 42791-002 (160-41301-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 03/01/2021 and analyzed on 03/02/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

Preparation Batch 160-500380, Analytical Batch 160-500568:
The PDS was inadvertently not spiked, however per method and QSM requirements a PDS is not needed if the MS/MSD passed. The MS/MSD associated with these sample was within control limits: 42791-002 (160-41301-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-41301 Chain of Custody

BROOKHAVEN
NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42791

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: J. Milligan	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD Use TB-1 From Coc# 42790

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	2/22/21	1055	W	RTW-1 Influent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0	↓	1100	W	RTW-1 Effluent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0	↓	1100	W	RTW-1 Effluent	250 ML	P	1	Hno3										x
~~003~~	~~E~~	~~G~~	~~TB-1~~	~~0~~	↓		~~W~~	~~Trip Blank~~	~~40 ML~~	~~SC~~	~~3~~	~~HCL~~					~~x~~					

Analysis Requested

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Jim Milligan 2/23/21	Print FED EX	Print
Signature 1400	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print Mallory O'Gara 2/24/21	Print
Signature	Signature Mallory OSG 1242	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 160-210009.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 160-41301-1
Address: 777 New Durham Road, ,	Due Date Requested: 3/10/2021			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	524.2_Preserved/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
42791-001 (160-41301-1)	2/22/21	10:55 Eastern		Water			X	3	
42791-002 (160-41301-2)	2/22/21	11:00 Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Mallory Olson	2/24/21 1700	ETA-STL	Adciemo Via Fedex	2/25/21 1000	[illegible]

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 2.5°C

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41301-1
SDG Number: 42791

Login Number: 41301
List Number: 1
Creator: O'Gara, Mallory L

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41301-1
SDG Number: 42791

Login Number: 41301
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 02/25/21 12:27 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.5°C IR11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41301-1
SDG: 42791

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41301-1
SDG: 42791

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41301-1
SDG: 42791

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-41301-1	42791-001	Water	02/22/21 10:55	02/24/21 12:42	
160-41301-2	42791-002	Water	02/22/21 11:00	02/24/21 12:42	

Client Sample Results

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41301-1
SDG: 42791

Client Sample ID: 42791-001

Date Collected: 02/22/21 10:55
Date Received: 02/24/21 12:42

Lab Sample ID: 160-41301-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/26/21 12:35	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/26/21 12:35	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			02/26/21 12:35	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			02/26/21 12:35	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			02/26/21 12:35	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			02/26/21 12:35	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/26/21 12:35	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			02/26/21 12:35	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			02/26/21 12:35	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			02/26/21 12:35	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			02/26/21 12:35	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			02/26/21 12:35	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			02/26/21 12:35	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			02/26/21 12:35	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			02/26/21 12:35	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			02/26/21 12:35	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			02/26/21 12:35	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/26/21 12:35	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			02/26/21 12:35	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/26/21 12:35	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			02/26/21 12:35	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			02/26/21 12:35	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			02/26/21 12:35	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			02/26/21 12:35	1
Benzene	0.50	U	0.50	0.11	ug/L			02/26/21 12:35	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			02/26/21 12:35	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			02/26/21 12:35	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			02/26/21 12:35	1
Bromoform	0.50	U	0.50	0.080	ug/L			02/26/21 12:35	1
Bromomethane	0.57	U	0.57	0.31	ug/L			02/26/21 12:35	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			02/26/21 12:35	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			02/26/21 12:35	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			02/26/21 12:35	1
Chloroethane	0.50	U	0.50	0.23	ug/L			02/26/21 12:35	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			02/26/21 12:35	1
Chloroform	**0.57**		0.50	0.12	ug/L			02/26/21 12:35	1
Chloromethane	0.50	U	0.50	0.18	ug/L			02/26/21 12:35	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			02/26/21 12:35	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/26/21 12:35	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			02/26/21 12:35	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			02/26/21 12:35	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			02/26/21 12:35	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			02/26/21 12:35	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/26/21 12:35	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			02/26/21 12:35	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			02/26/21 12:35	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			02/26/21 12:35	1
Naphthalene	0.67	U	0.67	0.080	ug/L			02/26/21 12:35	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			02/26/21 12:35	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41301-1
SDG: 42791

Client Sample ID: 42791-001

Date Collected: 02/22/21 10:55
Date Received: 02/24/21 12:42

Lab Sample ID: 160-41301-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			02/26/21 12:35	1
o-Xylene	0.50	U	0.50	0.090	ug/L			02/26/21 12:35	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			02/26/21 12:35	1
Styrene	0.50	U	0.50	0.090	ug/L			02/26/21 12:35	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			02/26/21 12:35	1
Tetrachloroethene	**3.7**		0.50	0.14	ug/L			02/26/21 12:35	1
Toluene	0.50	U	0.50	0.11	ug/L			02/26/21 12:35	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			02/26/21 12:35	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			02/26/21 12:35	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			02/26/21 12:35	1
Trichlorofluoromethane	**0.34**	**J**	0.50	0.27	ug/L			02/26/21 12:35	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			02/26/21 12:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*70 - 130*		*02/26/21 12:35*	*1*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*		*02/26/21 12:35*	*1*

Client Sample ID: 42791-002

Date Collected: 02/22/21 11:00
Date Received: 02/24/21 12:42

Lab Sample ID: 160-41301-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/26/21 12:56	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/26/21 12:56	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			02/26/21 12:56	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			02/26/21 12:56	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			02/26/21 12:56	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			02/26/21 12:56	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/26/21 12:56	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			02/26/21 12:56	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			02/26/21 12:56	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			02/26/21 12:56	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			02/26/21 12:56	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			02/26/21 12:56	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			02/26/21 12:56	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			02/26/21 12:56	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			02/26/21 12:56	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			02/26/21 12:56	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			02/26/21 12:56	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/26/21 12:56	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			02/26/21 12:56	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/26/21 12:56	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			02/26/21 12:56	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			02/26/21 12:56	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			02/26/21 12:56	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			02/26/21 12:56	1
Benzene	0.50	U	0.50	0.11	ug/L			02/26/21 12:56	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			02/26/21 12:56	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			02/26/21 12:56	1

Client Sample ID: 42791-002

Date Collected: 02/22/21 11:00
Date Received: 02/24/21 12:42

Lab Sample ID: 160-41301-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			02/26/21 12:56	1
Bromoform	0.50	U	0.50	0.080	ug/L			02/26/21 12:56	1
Bromomethane	0.57	U	0.57	0.31	ug/L			02/26/21 12:56	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			02/26/21 12:56	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			02/26/21 12:56	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			02/26/21 12:56	1
Chloroethane	0.50	U	0.50	0.23	ug/L			02/26/21 12:56	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			02/26/21 12:56	1
Chloroform	0.50	U	0.50	0.12	ug/L			02/26/21 12:56	1
Chloromethane	0.50	U	0.50	0.18	ug/L			02/26/21 12:56	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			02/26/21 12:56	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/26/21 12:56	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			02/26/21 12:56	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			02/26/21 12:56	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			02/26/21 12:56	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			02/26/21 12:56	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/26/21 12:56	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			02/26/21 12:56	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			02/26/21 12:56	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			02/26/21 12:56	1
Naphthalene	0.67	U	0.67	0.080	ug/L			02/26/21 12:56	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			02/26/21 12:56	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			02/26/21 12:56	1
o-Xylene	0.50	U	0.50	0.090	ug/L			02/26/21 12:56	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			02/26/21 12:56	1
Styrene	0.50	U	0.50	0.090	ug/L			02/26/21 12:56	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			02/26/21 12:56	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			02/26/21 12:56	1
Toluene	0.50	U	0.50	0.11	ug/L			02/26/21 12:56	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			02/26/21 12:56	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			02/26/21 12:56	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			02/26/21 12:56	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			02/26/21 12:56	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			02/26/21 12:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*70 - 130*		*02/26/21 12:56*	*1*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*02/26/21 12:56*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		03/01/21 13:50	03/02/21 19:09	2

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41301-1
SDG: 42791

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-761095/8
Matrix: Water
Analysis Batch: 761095

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			02/26/21 09:29	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			02/26/21 09:29	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			02/26/21 09:29	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			02/26/21 09:29	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			02/26/21 09:29	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			02/26/21 09:29	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/26/21 09:29	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			02/26/21 09:29	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			02/26/21 09:29	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			02/26/21 09:29	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			02/26/21 09:29	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			02/26/21 09:29	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			02/26/21 09:29	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			02/26/21 09:29	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			02/26/21 09:29	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			02/26/21 09:29	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			02/26/21 09:29	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/26/21 09:29	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			02/26/21 09:29	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			02/26/21 09:29	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			02/26/21 09:29	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			02/26/21 09:29	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			02/26/21 09:29	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			02/26/21 09:29	1
Benzene	0.50	U	0.50	0.11	ug/L			02/26/21 09:29	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			02/26/21 09:29	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			02/26/21 09:29	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			02/26/21 09:29	1
Bromoform	0.50	U	0.50	0.080	ug/L			02/26/21 09:29	1
Bromomethane	0.57	U	0.57	0.31	ug/L			02/26/21 09:29	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			02/26/21 09:29	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			02/26/21 09:29	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			02/26/21 09:29	1
Chloroethane	0.50	U	0.50	0.23	ug/L			02/26/21 09:29	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			02/26/21 09:29	1
Chloroform	0.50	U	0.50	0.12	ug/L			02/26/21 09:29	1
Chloromethane	0.50	U	0.50	0.18	ug/L			02/26/21 09:29	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			02/26/21 09:29	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			02/26/21 09:29	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			02/26/21 09:29	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			02/26/21 09:29	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			02/26/21 09:29	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			02/26/21 09:29	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			02/26/21 09:29	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			02/26/21 09:29	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			02/26/21 09:29	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			02/26/21 09:29	1
Naphthalene	0.67	U	0.67	0.080	ug/L			02/26/21 09:29	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-761095/8
Matrix: Water
Analysis Batch: 761095

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			02/26/21 09:29	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			02/26/21 09:29	1
o-Xylene	0.50	U	0.50	0.090	ug/L			02/26/21 09:29	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			02/26/21 09:29	1
Styrene	0.50	U	0.50	0.090	ug/L			02/26/21 09:29	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			02/26/21 09:29	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			02/26/21 09:29	1
Toluene	0.50	U	0.50	0.11	ug/L			02/26/21 09:29	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			02/26/21 09:29	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			02/26/21 09:29	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			02/26/21 09:29	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			02/26/21 09:29	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			02/26/21 09:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*93*		*70 - 130*		*02/26/21 09:29*	*1*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*02/26/21 09:29*	*1*

Lab Sample ID: LCS 460-761095/4
Matrix: Water
Analysis Batch: 761095

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	1.86		ug/L		93	70 - 130
1,1,1-Trichloroethane	2.00	2.02		ug/L		101	70 - 130
1,1,2,2-Tetrachloroethane	2.00	1.90		ug/L		95	70 - 130
1,1,2-Trichloroethane	2.00	1.96		ug/L		98	70 - 130
1,1-Dichloroethane	2.00	1.94		ug/L		97	70 - 130
1,1-Dichloroethene	2.00	1.72		ug/L		86	70 - 130
1,1-Dichloropropene	2.00	1.90		ug/L		95	70 - 130
1,2,3-Trichlorobenzene	2.00	1.66		ug/L		83	70 - 130
1,2,3-Trichloropropane	2.00	2.00		ug/L		100	70 - 130
1,2,4-Trichlorobenzene	2.00	1.80		ug/L		90	70 - 130
1,2,4-Trimethylbenzene	2.00	1.82		ug/L		91	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	1.57		ug/L		79	70 - 130
1,2-Dibromoethane	2.00	1.66		ug/L		83	70 - 130
1,2-Dichlorobenzene	2.00	1.96		ug/L		98	70 - 130
1,2-Dichloroethane	2.00	2.03		ug/L		101	70 - 130
1,2-Dichloropropane	2.00	1.89		ug/L		95	70 - 130
1,3,5-Trimethylbenzene	2.00	1.79		ug/L		89	70 - 130
1,3-Dichlorobenzene	2.00	1.91		ug/L		96	70 - 130
1,3-Dichloropropane	2.00	1.84		ug/L		92	70 - 130
1,4-Dichlorobenzene	2.00	1.86		ug/L		93	70 - 130
2,2-Dichloropropane	2.00	1.99		ug/L		99	70 - 130
2-Chlorotoluene	2.00	1.92		ug/L		96	70 - 130
4-Chlorotoluene	2.00	1.82		ug/L		91	70 - 130
4-Isopropyltoluene	2.00	1.83		ug/L		92	70 - 130
Benzene	2.00	1.79		ug/L		89	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-761095/4
Matrix: Water
Analysis Batch: 761095

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	2.00	1.92		ug/L		96	70 - 130
Bromochloromethane	2.00	1.99		ug/L		99	70 - 130
Bromodichloromethane	2.00	1.98		ug/L		99	70 - 130
Bromoform	2.00	2.05		ug/L		103	70 - 130
Bromomethane	2.00	1.83		ug/L		91	70 - 130
Carbon tetrachloride	2.00	2.05		ug/L		103	70 - 130
Chlorobenzene	2.00	1.71		ug/L		85	70 - 130
Dibromochloromethane	2.00	2.00		ug/L		100	70 - 130
Chloroethane	2.00	1.89		ug/L		95	70 - 130
Vinyl chloride	2.00	1.89		ug/L		94	70 - 130
Chloroform	2.00	1.96		ug/L		98	70 - 130
Chloromethane	2.00	2.34		ug/L		117	70 - 130
cis-1,2-Dichloroethene	2.00	1.89		ug/L		94	70 - 130
cis-1,3-Dichloropropene	2.00	1.92		ug/L		96	70 - 130
Dibromomethane	2.00	1.96		ug/L		98	70 - 130
Dichlorodifluoromethane	2.00	1.45		ug/L		72	70 - 130
Ethylbenzene	2.00	1.89		ug/L		94	70 - 130
Hexachlorobutadiene	2.00	1.78		ug/L		89	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	1.90		ug/L		95	70 - 130
Methylene Chloride	2.00	1.83		ug/L		91	70 - 130
m-Xylene & p-Xylene	4.00	3.59		ug/L		90	70 - 130
Isopropylbenzene	2.00	1.79		ug/L		89	70 - 130
Naphthalene	2.00	1.58		ug/L		79	70 - 130
n-Butylbenzene	2.00	1.89		ug/L		94	70 - 130
N-Propylbenzene	2.00	1.83		ug/L		91	70 - 130
o-Xylene	2.00	1.75		ug/L		88	70 - 130
sec-Butylbenzene	2.00	1.94		ug/L		97	70 - 130
Styrene	2.00	1.53		ug/L		76	70 - 130
tert-Butylbenzene	2.00	1.76		ug/L		88	70 - 130
Tetrachloroethene	2.00	1.90		ug/L		95	70 - 130
Toluene	2.00	1.94		ug/L		97	70 - 130
trans-1,2-Dichloroethene	2.00	1.67		ug/L		84	70 - 130
trans-1,3-Dichloropropene	2.00	1.72		ug/L		86	70 - 130
Trichloroethene	2.00	2.03		ug/L		101	70 - 130
Trichlorofluoromethane	2.00	1.89		ug/L		94	70 - 130
Xylenes, Total	6.00	5.34		ug/L		89	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*70 - 130*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*

Lab Sample ID: LCSD 460-761095/6
Matrix: Water
Analysis Batch: 761095

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	2.20		ug/L		110	70 - 130	17	30
1,1,1-Trichloroethane	2.00	1.93		ug/L		96	70 - 130	5	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-761095/6
Matrix: Water
Analysis Batch: 761095

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	2.00	1.73		ug/L		87	70 - 130	9	30
1,1,2-Trichloroethane	2.00	1.79		ug/L		90	70 - 130	9	30
1,1-Dichloroethane	2.00	1.84		ug/L		92	70 - 130	6	30
1,1-Dichloroethene	2.00	1.68		ug/L		84	70 - 130	2	30
1,1-Dichloropropene	2.00	1.80		ug/L		90	70 - 130	5	30
1,2,3-Trichlorobenzene	2.00	1.72		ug/L		86	70 - 130	4	30
1,2,3-Trichloropropane	2.00	1.64		ug/L		82	70 - 130	20	30
1,2,4-Trichlorobenzene	2.00	1.61		ug/L		81	70 - 130	11	30
1,2,4-Trimethylbenzene	2.00	1.78		ug/L		89	70 - 130	2	30
1,2-Dibromo-3-Chloropropane	2.00	1.78		ug/L		89	70 - 130	12	30
1,2-Dibromoethane	2.00	1.58		ug/L		79	70 - 130	5	30
1,2-Dichlorobenzene	2.00	1.78		ug/L		89	70 - 130	10	30
1,2-Dichloroethane	2.00	1.94		ug/L		97	70 - 130	4	30
1,2-Dichloropropane	2.00	1.80		ug/L		90	70 - 130	5	30
1,3,5-Trimethylbenzene	2.00	1.76		ug/L		88	70 - 130	2	30
1,3-Dichlorobenzene	2.00	1.75		ug/L		88	70 - 130	9	30
1,3-Dichloropropane	2.00	1.67		ug/L		83	70 - 130	10	30
1,4-Dichlorobenzene	2.00	1.78		ug/L		89	70 - 130	4	30
2,2-Dichloropropane	2.00	1.88		ug/L		94	70 - 130	6	30
2-Chlorotoluene	2.00	1.79		ug/L		90	70 - 130	7	30
4-Chlorotoluene	2.00	1.81		ug/L		91	70 - 130	0	30
4-Isopropyltoluene	2.00	1.74		ug/L		87	70 - 130	5	30
Benzene	2.00	1.74		ug/L		87	70 - 130	3	30
Bromobenzene	2.00	1.66		ug/L		83	70 - 130	14	30
Bromochloromethane	2.00	1.72		ug/L		86	70 - 130	15	30
Bromodichloromethane	2.00	1.99		ug/L		99	70 - 130	0	30
Bromoform	2.00	2.08		ug/L		104	70 - 130	1	30
Bromomethane	2.00	1.82		ug/L		91	70 - 130	0	30
Carbon tetrachloride	2.00	2.05		ug/L		103	70 - 130	0	30
Chlorobenzene	2.00	1.73		ug/L		86	70 - 130	1	30
Dibromochloromethane	2.00	1.87		ug/L		94	70 - 130	7	30
Chloroethane	2.00	1.88		ug/L		94	70 - 130	1	30
Vinyl chloride	2.00	1.77		ug/L		88	70 - 130	6	30
Chloroform	2.00	1.85		ug/L		92	70 - 130	6	30
Chloromethane	2.00	1.96		ug/L		98	70 - 130	18	30
cis-1,2-Dichloroethene	2.00	1.71		ug/L		85	70 - 130	10	30
cis-1,3-Dichloropropene	2.00	1.62		ug/L		81	70 - 130	17	30
Dibromomethane	2.00	1.73		ug/L		87	70 - 130	12	30
Dichlorodifluoromethane	2.00	1.60		ug/L		80	70 - 130	10	30
Ethylbenzene	2.00	1.78		ug/L		89	70 - 130	6	30
Hexachlorobutadiene	2.00	1.78		ug/L		89	70 - 130	0	30
Methyl-t-Butyl Ether (MTBE)	2.00	1.84		ug/L		92	70 - 130	3	30
Methylene Chloride	2.00	1.78		ug/L		89	70 - 130	3	30
m-Xylene & p-Xylene	4.00	3.41		ug/L		85	70 - 130	5	30
Isopropylbenzene	2.00	1.73		ug/L		87	70 - 130	3	30
Naphthalene	2.00	1.50		ug/L		75	70 - 130	5	30
n-Butylbenzene	2.00	1.85		ug/L		92	70 - 130	2	30
N-Propylbenzene	2.00	1.74		ug/L		87	70 - 130	5	30
o-Xylene	2.00	1.77		ug/L		88	70 - 130	1	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-761095/6
Matrix: Water
Analysis Batch: 761095

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			2.00	1.91		ug/L		96	70 - 130	1	30
Styrene			2.00	1.43		ug/L		72	70 - 130	7	30
tert-Butylbenzene			2.00	1.72		ug/L		86	70 - 130	3	30
Tetrachloroethene			2.00	1.91		ug/L		96	70 - 130	0	30
Toluene			2.00	1.83		ug/L		92	70 - 130	6	30
trans-1,2-Dichloroethene			2.00	1.67		ug/L		83	70 - 130	0	30
trans-1,3-Dichloropropene			2.00	1.72		ug/L		86	70 - 130	0	30
Trichloroethene			2.00	1.77		ug/L		89	70 - 130	13	30
Trichlorofluoromethane			2.00	1.78		ug/L		89	70 - 130	6	30
Xylenes, Total			6.00	5.18		ug/L		86	70 - 130	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*103*		*70 - 130*
1,2-Dichlorobenzene-d4	*101*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-500380/1-A ^2
Matrix: Water
Analysis Batch: 500568

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 500380

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		03/01/21 13:50	03/02/21 17:40	2

Lab Sample ID: LCS 160-500380/2-A ^2
Matrix: Water
Analysis Batch: 500568

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 500380

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	196		ug/L		98	82 - 116		

Lab Sample ID: 160-41198-A-7-B MS ^2
Matrix: Water
Analysis Batch: 500568

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 500380

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	194		ug/L		97	82 - 116		

Lab Sample ID: 160-41198-A-7-C MSD ^2
Matrix: Water
Analysis Batch: 500568

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 500380

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	195		ug/L		98	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41301-1
SDG: 42791

GC/MS VOA

Analysis Batch: 761095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41301-1	42791-001	Total/NA	Water	524.2	
160-41301-2	42791-002	Total/NA	Water	524.2	
MB 460-761095/8	Method Blank	Total/NA	Water	524.2	
LCS 460-761095/4	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-761095/6	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 500380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41301-2	42791-002	Total/NA	Water	3010A	
MB 160-500380/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-500380/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-41198-A-7-B MS ^2	Matrix Spike	Total/NA	Water	3010A	
160-41198-A-7-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 500568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41301-2	42791-002	Total/NA	Water	6020A	500380
MB 160-500380/1-A ^2	Method Blank	Total/NA	Water	6020A	500380
LCS 160-500380/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	500380
160-41198-A-7-B MS ^2	Matrix Spike	Total/NA	Water	6020A	500380
160-41198-A-7-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	6020A	500380

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41301-1
SDG: 42791

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	DCZ								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-41301-1	42791-001	98	101								
160-41301-2	42791-002	97	99								
LCS 460-761095/4	Lab Control Sample	99	100								
LCSD 460-761095/6	Lab Control Sample Dup	103	101								
MB 460-761095/8	Method Blank	93	99								

Surrogate Legend

BFB = 4-Bromofluorobenzene
DCZ = 1,2-Dichlorobenzene-d4

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-41359-1
Laboratory Sample Delivery Group: 42817
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
3/17/2021 4:29:14 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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Visit us at:
www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-41359-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-41359-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 3/3/2021 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -2.4° C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42817-001 (160-41359-1), 42817-002 (160-41359-2) and 42817-003 (160-41359-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 03/05/2021.

Job ID: 160-41359-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Analytical Batch 460-762582:
The laboratory control sample duplicate (LCSD) recovered outside control limits for Bromoform. The analyte was biased high in the LCSD and was not detected in the associated samples; therefore, the data was reported: (LCSD 460-762582/4).

The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recovered outside control limits 1,2-Dibromo-3-Chloropropane. Both recoveries were within QC limits: (LCS 460-762582/3) and (LCSD 460-762582/4).
No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 42817-002 (160-41359-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 03/09/2021 and analyzed on 03/11/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42817

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler:	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	3/1/21	1405	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1407	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		↓	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
003	E	G	TB-1	0	↓	1400	W	Trip Blank	40 ML	SC	3	HCL					X							

160-41359 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print [illegible] 3/2/21	Print FED EX	Print
Signature [illegible] 1300	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print Sierra Wormington 3/3/21	Print
Signature	Signature [illegible] 08:10	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☒ Disposal by Lab
- ☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 160-210234.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 160-41359-1
Address: 777 New Durham Road, ,	Due Date Requested: 3/16/2021			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	524.2_Preserved/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
42817-001 (160-41359-1)	3/1/21	14:05 Eastern		Water			X	3	
42817-002 (160-41359-2)	3/1/21	14:07 Eastern		Water			X	3	
42817-003 (160-41359-3)	3/1/21	14:00 Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by:	Date: Time: Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Melissa O'Sam	3/3/21 1630	FTA-STL	Adrienne via Fedex	3/4/21 1030	TAEdison
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.1°C

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41359-1
SDG Number: 42817

Login Number: 41359
List Number: 1
Creator: Worthington, Sierra M

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41359-1
SDG Number: 42817

Login Number: 41359
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 03/04/21 11:41 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1°C IR11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41359-1
SDG: 42817

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41359-1
SDG: 42817

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41359-1
SDG: 42817

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-41359-1	42817-001	Water	03/01/21 14:05	03/03/21 10:10	
160-41359-2	42817-002	Water	03/01/21 14:07	03/03/21 10:10	
160-41359-3	42817-003	Water	03/01/21 14:00	03/03/21 10:10	

Client Sample ID: 42817-001

Date Collected: 03/01/21 14:05
Date Received: 03/03/21 10:10

Lab Sample ID: 160-41359-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/05/21 10:34	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/05/21 10:34	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			03/05/21 10:34	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			03/05/21 10:34	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			03/05/21 10:34	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			03/05/21 10:34	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/05/21 10:34	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			03/05/21 10:34	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			03/05/21 10:34	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			03/05/21 10:34	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			03/05/21 10:34	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			03/05/21 10:34	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			03/05/21 10:34	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			03/05/21 10:34	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			03/05/21 10:34	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			03/05/21 10:34	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			03/05/21 10:34	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/05/21 10:34	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			03/05/21 10:34	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/05/21 10:34	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			03/05/21 10:34	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			03/05/21 10:34	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			03/05/21 10:34	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			03/05/21 10:34	1
Benzene	0.50	U	0.50	0.11	ug/L			03/05/21 10:34	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			03/05/21 10:34	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			03/05/21 10:34	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			03/05/21 10:34	1
Bromoform	0.50	U	0.50	0.080	ug/L			03/05/21 10:34	1
Bromomethane	0.57	U	0.57	0.31	ug/L			03/05/21 10:34	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			03/05/21 10:34	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			03/05/21 10:34	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			03/05/21 10:34	1
Chloroethane	0.50	U	0.50	0.23	ug/L			03/05/21 10:34	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			03/05/21 10:34	1
Chloroform	**0.62**		0.50	0.12	ug/L			03/05/21 10:34	1
Chloromethane	0.50	U	0.50	0.18	ug/L			03/05/21 10:34	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			03/05/21 10:34	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/05/21 10:34	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			03/05/21 10:34	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			03/05/21 10:34	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			03/05/21 10:34	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			03/05/21 10:34	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/05/21 10:34	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			03/05/21 10:34	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			03/05/21 10:34	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			03/05/21 10:34	1
Naphthalene	0.67	U	0.67	0.080	ug/L			03/05/21 10:34	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			03/05/21 10:34	1

Client Sample ID: 42817-001

Date Collected: 03/01/21 14:05
Date Received: 03/03/21 10:10

Lab Sample ID: 160-41359-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			03/05/21 10:34	1
o-Xylene	0.50	U	0.50	0.090	ug/L			03/05/21 10:34	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			03/05/21 10:34	1
Styrene	0.50	U	0.50	0.090	ug/L			03/05/21 10:34	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			03/05/21 10:34	1
Tetrachloroethene	**4.0**		0.50	0.14	ug/L			03/05/21 10:34	1
Toluene	0.50	U	0.50	0.11	ug/L			03/05/21 10:34	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			03/05/21 10:34	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			03/05/21 10:34	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			03/05/21 10:34	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			03/05/21 10:34	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			03/05/21 10:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*84*		*70 - 130*		*03/05/21 10:34*	*1*
1,2-Dichlorobenzene-d4	*97*		*70 - 130*		*03/05/21 10:34*	*1*

Client Sample ID: 42817-002

Date Collected: 03/01/21 14:07
Date Received: 03/03/21 10:10

Lab Sample ID: 160-41359-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/05/21 10:55	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/05/21 10:55	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			03/05/21 10:55	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			03/05/21 10:55	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			03/05/21 10:55	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			03/05/21 10:55	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/05/21 10:55	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			03/05/21 10:55	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			03/05/21 10:55	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			03/05/21 10:55	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			03/05/21 10:55	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			03/05/21 10:55	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			03/05/21 10:55	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			03/05/21 10:55	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			03/05/21 10:55	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			03/05/21 10:55	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			03/05/21 10:55	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/05/21 10:55	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			03/05/21 10:55	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/05/21 10:55	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			03/05/21 10:55	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			03/05/21 10:55	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			03/05/21 10:55	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			03/05/21 10:55	1
Benzene	0.50	U	0.50	0.11	ug/L			03/05/21 10:55	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			03/05/21 10:55	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			03/05/21 10:55	1

Client Sample ID: 42817-002

Date Collected: 03/01/21 14:07
Date Received: 03/03/21 10:10

Lab Sample ID: 160-41359-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			03/05/21 10:55	1
Bromoform	0.50	U	0.50	0.080	ug/L			03/05/21 10:55	1
Bromomethane	0.57	U	0.57	0.31	ug/L			03/05/21 10:55	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			03/05/21 10:55	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			03/05/21 10:55	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			03/05/21 10:55	1
Chloroethane	0.50	U	0.50	0.23	ug/L			03/05/21 10:55	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			03/05/21 10:55	1
Chloroform	0.50	U	0.50	0.12	ug/L			03/05/21 10:55	1
Chloromethane	0.50	U	0.50	0.18	ug/L			03/05/21 10:55	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			03/05/21 10:55	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/05/21 10:55	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			03/05/21 10:55	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			03/05/21 10:55	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			03/05/21 10:55	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			03/05/21 10:55	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/05/21 10:55	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			03/05/21 10:55	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			03/05/21 10:55	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			03/05/21 10:55	1
Naphthalene	0.67	U	0.67	0.080	ug/L			03/05/21 10:55	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			03/05/21 10:55	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			03/05/21 10:55	1
o-Xylene	0.50	U	0.50	0.090	ug/L			03/05/21 10:55	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			03/05/21 10:55	1
Styrene	0.50	U	0.50	0.090	ug/L			03/05/21 10:55	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			03/05/21 10:55	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			03/05/21 10:55	1
Toluene	0.50	U	0.50	0.11	ug/L			03/05/21 10:55	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			03/05/21 10:55	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			03/05/21 10:55	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			03/05/21 10:55	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			03/05/21 10:55	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			03/05/21 10:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*70 - 130*		*03/05/21 10:55*	*1*
1,2-Dichlorobenzene-d4	*108*		*70 - 130*		*03/05/21 10:55*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		03/09/21 14:10	03/11/21 17:08	2

Client Sample ID: 42817-003

Date Collected: 03/01/21 14:00
Date Received: 03/03/21 10:10

Lab Sample ID: 160-41359-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/05/21 11:16	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41359-1
SDG: 42817

Client Sample ID: 42817-003
Date Collected: 03/01/21 14:00
Date Received: 03/03/21 10:10

Lab Sample ID: 160-41359-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/05/21 11:16	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			03/05/21 11:16	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			03/05/21 11:16	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			03/05/21 11:16	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			03/05/21 11:16	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/05/21 11:16	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			03/05/21 11:16	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			03/05/21 11:16	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			03/05/21 11:16	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			03/05/21 11:16	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			03/05/21 11:16	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			03/05/21 11:16	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			03/05/21 11:16	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			03/05/21 11:16	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			03/05/21 11:16	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			03/05/21 11:16	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/05/21 11:16	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			03/05/21 11:16	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/05/21 11:16	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			03/05/21 11:16	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			03/05/21 11:16	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			03/05/21 11:16	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			03/05/21 11:16	1
Benzene	0.50	U	0.50	0.11	ug/L			03/05/21 11:16	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			03/05/21 11:16	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			03/05/21 11:16	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			03/05/21 11:16	1
Bromoform	0.50	U	0.50	0.080	ug/L			03/05/21 11:16	1
Bromomethane	0.57	U	0.57	0.31	ug/L			03/05/21 11:16	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			03/05/21 11:16	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			03/05/21 11:16	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			03/05/21 11:16	1
Chloroethane	0.50	U	0.50	0.23	ug/L			03/05/21 11:16	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			03/05/21 11:16	1
Chloroform	0.50	U	0.50	0.12	ug/L			03/05/21 11:16	1
Chloromethane	0.50	U	0.50	0.18	ug/L			03/05/21 11:16	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			03/05/21 11:16	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/05/21 11:16	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			03/05/21 11:16	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			03/05/21 11:16	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			03/05/21 11:16	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			03/05/21 11:16	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/05/21 11:16	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			03/05/21 11:16	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			03/05/21 11:16	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			03/05/21 11:16	1
Naphthalene	0.67	U	0.67	0.080	ug/L			03/05/21 11:16	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			03/05/21 11:16	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			03/05/21 11:16	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41359-1
SDG: 42817

Client Sample ID: 42817-003
Date Collected: 03/01/21 14:00
Date Received: 03/03/21 10:10

Lab Sample ID: 160-41359-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.090	ug/L			03/05/21 11:16	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			03/05/21 11:16	1
Styrene	**0.23**	**J**	0.50	0.090	ug/L			03/05/21 11:16	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			03/05/21 11:16	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			03/05/21 11:16	1
Toluene	0.50	U	0.50	0.11	ug/L			03/05/21 11:16	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			03/05/21 11:16	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			03/05/21 11:16	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			03/05/21 11:16	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			03/05/21 11:16	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			03/05/21 11:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*91*		*70 - 130*		*03/05/21 11:16*	*1*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*03/05/21 11:16*	*1*

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-762582/7
Matrix: Water
Analysis Batch: 762582

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/05/21 09:12	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/05/21 09:12	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			03/05/21 09:12	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			03/05/21 09:12	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			03/05/21 09:12	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			03/05/21 09:12	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/05/21 09:12	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			03/05/21 09:12	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			03/05/21 09:12	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			03/05/21 09:12	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			03/05/21 09:12	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			03/05/21 09:12	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			03/05/21 09:12	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			03/05/21 09:12	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			03/05/21 09:12	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			03/05/21 09:12	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			03/05/21 09:12	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/05/21 09:12	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			03/05/21 09:12	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/05/21 09:12	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			03/05/21 09:12	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			03/05/21 09:12	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			03/05/21 09:12	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			03/05/21 09:12	1
Benzene	0.50	U	0.50	0.11	ug/L			03/05/21 09:12	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			03/05/21 09:12	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			03/05/21 09:12	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			03/05/21 09:12	1
Bromoform	0.50	U	0.50	0.080	ug/L			03/05/21 09:12	1
Bromomethane	0.57	U	0.57	0.31	ug/L			03/05/21 09:12	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			03/05/21 09:12	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			03/05/21 09:12	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			03/05/21 09:12	1
Chloroethane	0.50	U	0.50	0.23	ug/L			03/05/21 09:12	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			03/05/21 09:12	1
Chloroform	0.50	U	0.50	0.12	ug/L			03/05/21 09:12	1
Chloromethane	0.50	U	0.50	0.18	ug/L			03/05/21 09:12	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			03/05/21 09:12	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/05/21 09:12	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			03/05/21 09:12	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			03/05/21 09:12	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			03/05/21 09:12	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			03/05/21 09:12	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/05/21 09:12	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			03/05/21 09:12	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			03/05/21 09:12	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			03/05/21 09:12	1
Naphthalene	0.67	U	0.67	0.080	ug/L			03/05/21 09:12	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-762582/7
Matrix: Water
Analysis Batch: 762582

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			03/05/21 09:12	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			03/05/21 09:12	1
o-Xylene	0.50	U	0.50	0.090	ug/L			03/05/21 09:12	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			03/05/21 09:12	1
Styrene	0.50	U	0.50	0.090	ug/L			03/05/21 09:12	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			03/05/21 09:12	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			03/05/21 09:12	1
Toluene	0.50	U	0.50	0.11	ug/L			03/05/21 09:12	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			03/05/21 09:12	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			03/05/21 09:12	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			03/05/21 09:12	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			03/05/21 09:12	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			03/05/21 09:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*70 - 130*		*03/05/21 09:12*	*1*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*		*03/05/21 09:12*	*1*

Lab Sample ID: LCS 460-762582/3
Matrix: Water
Analysis Batch: 762582

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	2.15		ug/L		108	70 - 130
1,1,1-Trichloroethane	2.00	1.97		ug/L		98	70 - 130
1,1,2,2-Tetrachloroethane	2.00	1.88		ug/L		94	70 - 130
1,1,2-Trichloroethane	2.00	1.79		ug/L		90	70 - 130
1,1-Dichloroethane	2.00	1.88		ug/L		94	70 - 130
1,1-Dichloroethene	2.00	1.79		ug/L		90	70 - 130
1,1-Dichloropropene	2.00	1.80		ug/L		90	70 - 130
1,2,3-Trichlorobenzene	2.00	1.88		ug/L		94	70 - 130
1,2,3-Trichloropropane	2.00	1.79		ug/L		90	70 - 130
1,2,4-Trichlorobenzene	2.00	1.86		ug/L		93	70 - 130
1,2,4-Trimethylbenzene	2.00	1.65		ug/L		83	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	1.84		ug/L		92	70 - 130
1,2-Dibromoethane	2.00	2.07		ug/L		103	70 - 130
1,2-Dichlorobenzene	2.00	1.90		ug/L		95	70 - 130
1,2-Dichloroethane	2.00	1.85		ug/L		92	70 - 130
1,2-Dichloropropane	2.00	1.72		ug/L		86	70 - 130
1,3,5-Trimethylbenzene	2.00	1.58		ug/L		79	70 - 130
1,3-Dichlorobenzene	2.00	1.91		ug/L		95	70 - 130
1,3-Dichloropropane	2.00	1.82		ug/L		91	70 - 130
1,4-Dichlorobenzene	2.00	1.77		ug/L		88	70 - 130
2,2-Dichloropropane	2.00	1.76		ug/L		88	70 - 130
2-Chlorotoluene	2.00	1.67		ug/L		83	70 - 130
4-Chlorotoluene	2.00	1.67		ug/L		83	70 - 130
4-Isopropyltoluene	2.00	1.67		ug/L		83	70 - 130
Benzene	2.00	1.87		ug/L		94	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-762582/3
Matrix: Water
Analysis Batch: 762582

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	2.00	1.86		ug/L		93	70 - 130
Bromochloromethane	2.00	2.00		ug/L		100	70 - 130
Bromodichloromethane	2.00	1.96		ug/L		98	70 - 130
Bromoform	2.00	2.56		ug/L		128	70 - 130
Bromomethane	2.00	1.91		ug/L		96	70 - 130
Carbon tetrachloride	2.00	2.10		ug/L		105	70 - 130
Chlorobenzene	2.00	1.66		ug/L		83	70 - 130
Dibromochloromethane	2.00	2.23		ug/L		112	70 - 130
Chloroethane	2.00	1.92		ug/L		96	70 - 130
Vinyl chloride	2.00	1.68		ug/L		84	70 - 130
Chloroform	2.00	1.94		ug/L		97	70 - 130
Chloromethane	2.00	1.52		ug/L		76	70 - 130
cis-1,2-Dichloroethene	2.00	1.92		ug/L		96	70 - 130
cis-1,3-Dichloropropene	2.00	1.75		ug/L		88	70 - 130
Dibromomethane	2.00	1.98		ug/L		99	70 - 130
Dichlorodifluoromethane	2.00	1.63		ug/L		81	70 - 130
Ethylbenzene	2.00	1.67		ug/L		84	70 - 130
Hexachlorobutadiene	2.00	1.83		ug/L		92	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	1.69		ug/L		85	70 - 130
Methylene Chloride	2.00	2.08		ug/L		104	70 - 130
m-Xylene & p-Xylene	4.00	3.29		ug/L		82	70 - 130
Isopropylbenzene	2.00	1.68		ug/L		84	70 - 130
Naphthalene	2.00	1.67		ug/L		84	70 - 130
n-Butylbenzene	2.00	1.68		ug/L		84	70 - 130
N-Propylbenzene	2.00	1.61		ug/L		80	70 - 130
o-Xylene	2.00	1.57		ug/L		78	70 - 130
sec-Butylbenzene	2.00	1.72		ug/L		86	70 - 130
Styrene	2.00	1.58		ug/L		79	70 - 130
tert-Butylbenzene	2.00	1.60		ug/L		80	70 - 130
Tetrachloroethene	2.00	1.95		ug/L		97	70 - 130
Toluene	2.00	1.67		ug/L		83	70 - 130
trans-1,2-Dichloroethene	2.00	1.87		ug/L		93	70 - 130
trans-1,3-Dichloropropene	2.00	1.87		ug/L		93	70 - 130
Trichloroethene	2.00	1.86		ug/L		93	70 - 130
Trichlorofluoromethane	2.00	1.71		ug/L		86	70 - 130
Xylenes, Total	6.00	4.85		ug/L		81	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*93*		*70 - 130*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*

Lab Sample ID: LCSD 460-762582/4
Matrix: Water
Analysis Batch: 762582

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	2.50		ug/L		125	70 - 130	15	30
1,1,1-Trichloroethane	2.00	2.44		ug/L		122	70 - 130	21	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-762582/4
Matrix: Water
Analysis Batch: 762582

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	2.00	2.16		ug/L		108	70 - 130	14	30
1,1,2-Trichloroethane	2.00	2.13		ug/L		107	70 - 130	17	30
1,1-Dichloroethane	2.00	2.15		ug/L		108	70 - 130	14	30
1,1-Dichloroethene	2.00	2.04		ug/L		102	70 - 130	13	30
1,1-Dichloropropene	2.00	2.09		ug/L		105	70 - 130	15	30
1,2,3-Trichlorobenzene	2.00	2.09		ug/L		105	70 - 130	11	30
1,2,3-Trichloropropane	2.00	2.08		ug/L		104	70 - 130	15	30
1,2,4-Trichlorobenzene	2.00	2.05		ug/L		103	70 - 130	10	30
1,2,4-Trimethylbenzene	2.00	1.89		ug/L		94	70 - 130	13	30
1,2-Dibromo-3-Chloropropane	2.00	2.57		ug/L		129	70 - 130	33	30
1,2-Dibromoethane	2.00	2.25		ug/L		113	70 - 130	9	30
1,2-Dichlorobenzene	2.00	2.17		ug/L		108	70 - 130	13	30
1,2-Dichloroethane	2.00	2.09		ug/L		104	70 - 130	12	30
1,2-Dichloropropane	2.00	2.01		ug/L		101	70 - 130	16	30
1,3,5-Trimethylbenzene	2.00	1.90		ug/L		95	70 - 130	18	30
1,3-Dichlorobenzene	2.00	2.16		ug/L		108	70 - 130	12	30
1,3-Dichloropropane	2.00	2.01		ug/L		101	70 - 130	10	30
1,4-Dichlorobenzene	2.00	2.15		ug/L		107	70 - 130	19	30
2,2-Dichloropropane	2.00	2.17		ug/L		108	70 - 130	21	30
2-Chlorotoluene	2.00	2.00		ug/L		100	70 - 130	18	30
4-Chlorotoluene	2.00	1.89		ug/L		95	70 - 130	12	30
4-Isopropyltoluene	2.00	1.99		ug/L		99	70 - 130	18	30
Benzene	2.00	2.13		ug/L		106	70 - 130	13	30
Bromobenzene	2.00	2.07		ug/L		103	70 - 130	10	30
Bromochloromethane	2.00	2.33		ug/L		116	70 - 130	15	30
Bromodichloromethane	2.00	2.34		ug/L		117	70 - 130	18	30
Bromoform	2.00	2.81		ug/L		140	70 - 130	9	30
Bromomethane	2.00	2.23		ug/L		112	70 - 130	15	30
Carbon tetrachloride	2.00	2.54		ug/L		127	70 - 130	19	30
Chlorobenzene	2.00	1.99		ug/L		99	70 - 130	18	30
Dibromochloromethane	2.00	2.53		ug/L		127	70 - 130	13	30
Chloroethane	2.00	2.03		ug/L		102	70 - 130	6	30
Vinyl chloride	2.00	1.83		ug/L		91	70 - 130	8	30
Chloroform	2.00	2.24		ug/L		112	70 - 130	14	30
Chloromethane	2.00	1.73		ug/L		87	70 - 130	13	30
cis-1,2-Dichloroethene	2.00	2.25		ug/L		113	70 - 130	16	30
cis-1,3-Dichloropropene	2.00	2.01		ug/L		100	70 - 130	14	30
Dibromomethane	2.00	2.10		ug/L		105	70 - 130	6	30
Dichlorodifluoromethane	2.00	1.98		ug/L		99	70 - 130	19	30
Ethylbenzene	2.00	1.94		ug/L		97	70 - 130	15	30
Hexachlorobutadiene	2.00	2.19		ug/L		110	70 - 130	18	30
Methyl-t-Butyl Ether (MTBE)	2.00	1.93		ug/L		97	70 - 130	13	30
Methylene Chloride	2.00	2.40		ug/L		120	70 - 130	14	30
m-Xylene & p-Xylene	4.00	3.75		ug/L		94	70 - 130	13	30
Isopropylbenzene	2.00	1.94		ug/L		97	70 - 130	15	30
Naphthalene	2.00	1.94		ug/L		97	70 - 130	14	30
n-Butylbenzene	2.00	1.95		ug/L		98	70 - 130	15	30
N-Propylbenzene	2.00	1.87		ug/L		93	70 - 130	15	30
o-Xylene	2.00	1.80		ug/L		90	70 - 130	14	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-762582/4
Matrix: Water
Analysis Batch: 762582

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			2.00	1.97		ug/L		99	70 - 130	14	30
Styrene			2.00	1.87		ug/L		93	70 - 130	17	30
tert-Butylbenzene			2.00	1.83		ug/L		92	70 - 130	13	30
Tetrachloroethene			2.00	2.06		ug/L		103	70 - 130	6	30
Toluene			2.00	1.95		ug/L		97	70 - 130	16	30
trans-1,2-Dichloroethene			2.00	2.16		ug/L		108	70 - 130	15	30
trans-1,3-Dichloropropene			2.00	2.17		ug/L		109	70 - 130	15	30
Trichloroethene			2.00	2.29		ug/L		114	70 - 130	21	30
Trichlorofluoromethane			2.00	2.01		ug/L		101	70 - 130	16	30
Xylenes, Total			6.00	5.54		ug/L		92	70 - 130	13	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*95*		*70 - 130*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-501373/1-A ^2
Matrix: Water
Analysis Batch: 501613

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 501373

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		03/09/21 14:10	03/11/21 17:01	2

Lab Sample ID: LCS 160-501373/2-A ^2
Matrix: Water
Analysis Batch: 501613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 501373

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	190		ug/L		95	82 - 116		

Lab Sample ID: 160-41359-2 MS
Matrix: Water
Analysis Batch: 501613

Client Sample ID: 42817-002
Prep Type: Total/NA
Prep Batch: 501373

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	187		ug/L		93	82 - 116		

Lab Sample ID: 160-41359-2 MSD
Matrix: Water
Analysis Batch: 501613

Client Sample ID: 42817-002
Prep Type: Total/NA
Prep Batch: 501373

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	190		ug/L		95	82 - 116	2	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41359-1
SDG: 42817

GC/MS VOA

Analysis Batch: 762582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41359-1	42817-001	Total/NA	Water	524.2	
160-41359-2	42817-002	Total/NA	Water	524.2	
160-41359-3	42817-003	Total/NA	Water	524.2	
MB 460-762582/7	Method Blank	Total/NA	Water	524.2	
LCS 460-762582/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-762582/4	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 501373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41359-2	42817-002	Total/NA	Water	3010A	
MB 160-501373/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-501373/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-41359-2 MS	42817-002	Total/NA	Water	3010A	
160-41359-2 MSD	42817-002	Total/NA	Water	3010A	

Analysis Batch: 501613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41359-2	42817-002	Total/NA	Water	6020A	501373
MB 160-501373/1-A ^2	Method Blank	Total/NA	Water	6020A	501373
LCS 160-501373/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	501373
160-41359-2 MS	42817-002	Total/NA	Water	6020A	501373
160-41359-2 MSD	42817-002	Total/NA	Water	6020A	501373

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41359-1
SDG: 42817

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	DCZ								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-41359-1	42817-001	84	97								
160-41359-2	42817-002	96	108								
160-41359-3	42817-003	91	99								
LCS 460-762582/3	Lab Control Sample	93	100								
LCSD 460-762582/4	Lab Control Sample Dup	95	106								
MB 460-762582/7	Method Blank	95	105								

Surrogate Legend

BFB = 4-Bromofluorobenzene
DCZ = 1,2-Dichlorobenzene-d4

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-41507-1
Laboratory Sample Delivery Group: 42871
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
3/29/2021 11:45:17 AM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-41507-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-41507-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 3/19/2021 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were -3.1º C and 12.9º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42871-001 (160-41507-1) and 42871-002 (160-41507-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 03/25/2021.

Job ID: 160-41507-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Analytical Batch 4860-767307:
The continuing calibration verification (CCV) recovered above the upper control limit for 1,2-Dibromo-3-Chloropropane. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data was reported: (CCVIS 460-767307/2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 42871-002 (160-41507-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 03/24/2021 and analyzed on 03/25/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-41507 Chain of Custody

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42871

Requires EDD: X

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: M. Yost	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 1396	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD use TB-1 from 42870 for 42871

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	3/17/21	1135	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0	↓	1129	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0	↓	↓	W	RTW-1 Effluent	250 ML	P	1	Hno3										X		
~~003~~	~~E~~	~~G~~	~~TB-1~~	~~0~~			~~W~~	Trip Blank	40 ML	SC	3	HCL					X							

3/17/21

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print M. Yost 3/18/21	Print FED EX	Print
Signature M. Yost 1300	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print FED EX	Print: Sieera Worthington 3/19/21	Print
Signature	Signature 0900	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☒ Disposal by Lab
- ☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 4 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 160-210809.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 160-41507-1
Address: 777 New Durham Road, ,	Due Date Requested: 4/1/2021			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	524.2_Preserved/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
42871-001 (160-41507-1)	3/17/21	11:35 Eastern		Water			X	3	
42871-002 (160-41507-2)	3/17/21	11:29 Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	3/19/21 1717	ETA STL	[signature] (FedEx)	3/20/21 1117	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: CS Tape	Cooler Temperature(s) °C and Other Remarks: IR11 3.3/3.0°C

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41507-1
SDG Number: 42871

Login Number: 41507
List Number: 1
Creator: Worthington, Sierra M

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41507-1
SDG Number: 42871

Login Number: 41507
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 03/22/21 12:04 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	tamper evident tape
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.0°C IR11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41507-1
SDG: 42871

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41507-1
SDG: 42871

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41507-1
SDG: 42871

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-41507-1	42871-001	Water	03/17/21 11:35	03/19/21 09:00	
160-41507-2	42871-002	Water	03/17/21 11:29	03/19/21 09:00	

Client Sample Results

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41507-1
SDG: 42871

Client Sample ID: 42871-001

Date Collected: 03/17/21 11:35
Date Received: 03/19/21 09:00

Lab Sample ID: 160-41507-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/25/21 21:31	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/25/21 21:31	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			03/25/21 21:31	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			03/25/21 21:31	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			03/25/21 21:31	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			03/25/21 21:31	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/25/21 21:31	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			03/25/21 21:31	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			03/25/21 21:31	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			03/25/21 21:31	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			03/25/21 21:31	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			03/25/21 21:31	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			03/25/21 21:31	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			03/25/21 21:31	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			03/25/21 21:31	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			03/25/21 21:31	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			03/25/21 21:31	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/25/21 21:31	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			03/25/21 21:31	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/25/21 21:31	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			03/25/21 21:31	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			03/25/21 21:31	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			03/25/21 21:31	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			03/25/21 21:31	1
Benzene	0.50	U	0.50	0.11	ug/L			03/25/21 21:31	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			03/25/21 21:31	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			03/25/21 21:31	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			03/25/21 21:31	1
Bromoform	0.50	U	0.50	0.080	ug/L			03/25/21 21:31	1
Bromomethane	0.57	U	0.57	0.31	ug/L			03/25/21 21:31	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			03/25/21 21:31	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			03/25/21 21:31	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			03/25/21 21:31	1
Chloroethane	0.50	U	0.50	0.23	ug/L			03/25/21 21:31	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			03/25/21 21:31	1
Chloroform	**0.56**		0.50	0.12	ug/L			03/25/21 21:31	1
Chloromethane	0.50	U	0.50	0.18	ug/L			03/25/21 21:31	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			03/25/21 21:31	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/25/21 21:31	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			03/25/21 21:31	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			03/25/21 21:31	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			03/25/21 21:31	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			03/25/21 21:31	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/25/21 21:31	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			03/25/21 21:31	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			03/25/21 21:31	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			03/25/21 21:31	1
Naphthalene	0.67	U	0.67	0.080	ug/L			03/25/21 21:31	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			03/25/21 21:31	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41507-1
SDG: 42871

Client Sample ID: 42871-001

Date Collected: 03/17/21 11:35
Date Received: 03/19/21 09:00

Lab Sample ID: 160-41507-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			03/25/21 21:31	1
o-Xylene	0.50	U	0.50	0.090	ug/L			03/25/21 21:31	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			03/25/21 21:31	1
Styrene	0.50	U	0.50	0.090	ug/L			03/25/21 21:31	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			03/25/21 21:31	1
Tetrachloroethene	**3.7**		0.50	0.14	ug/L			03/25/21 21:31	1
Toluene	0.50	U	0.50	0.11	ug/L			03/25/21 21:31	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			03/25/21 21:31	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			03/25/21 21:31	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			03/25/21 21:31	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			03/25/21 21:31	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			03/25/21 21:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*90*		*70 - 130*		*03/25/21 21:31*	*1*
1,2-Dichlorobenzene-d4	*104*		*70 - 130*		*03/25/21 21:31*	*1*

Client Sample ID: 42871-002

Date Collected: 03/17/21 11:29
Date Received: 03/19/21 09:00

Lab Sample ID: 160-41507-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/25/21 21:51	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/25/21 21:51	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			03/25/21 21:51	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			03/25/21 21:51	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			03/25/21 21:51	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			03/25/21 21:51	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/25/21 21:51	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			03/25/21 21:51	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			03/25/21 21:51	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			03/25/21 21:51	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			03/25/21 21:51	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			03/25/21 21:51	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			03/25/21 21:51	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			03/25/21 21:51	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			03/25/21 21:51	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			03/25/21 21:51	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			03/25/21 21:51	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/25/21 21:51	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			03/25/21 21:51	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/25/21 21:51	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			03/25/21 21:51	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			03/25/21 21:51	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			03/25/21 21:51	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			03/25/21 21:51	1
Benzene	0.50	U	0.50	0.11	ug/L			03/25/21 21:51	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			03/25/21 21:51	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			03/25/21 21:51	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41507-1
SDG: 42871

Client Sample ID: 42871-002
Date Collected: 03/17/21 11:29
Date Received: 03/19/21 09:00

Lab Sample ID: 160-41507-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			03/25/21 21:51	1
Bromoform	0.50	U	0.50	0.080	ug/L			03/25/21 21:51	1
Bromomethane	0.57	U	0.57	0.31	ug/L			03/25/21 21:51	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			03/25/21 21:51	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			03/25/21 21:51	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			03/25/21 21:51	1
Chloroethane	0.50	U	0.50	0.23	ug/L			03/25/21 21:51	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			03/25/21 21:51	1
Chloroform	0.50	U	0.50	0.12	ug/L			03/25/21 21:51	1
Chloromethane	0.50	U	0.50	0.18	ug/L			03/25/21 21:51	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			03/25/21 21:51	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/25/21 21:51	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			03/25/21 21:51	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			03/25/21 21:51	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			03/25/21 21:51	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			03/25/21 21:51	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/25/21 21:51	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			03/25/21 21:51	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			03/25/21 21:51	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			03/25/21 21:51	1
Naphthalene	0.67	U	0.67	0.080	ug/L			03/25/21 21:51	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			03/25/21 21:51	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			03/25/21 21:51	1
o-Xylene	0.50	U	0.50	0.090	ug/L			03/25/21 21:51	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			03/25/21 21:51	1
Styrene	0.50	U	0.50	0.090	ug/L			03/25/21 21:51	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			03/25/21 21:51	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			03/25/21 21:51	1
Toluene	0.50	U	0.50	0.11	ug/L			03/25/21 21:51	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			03/25/21 21:51	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			03/25/21 21:51	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			03/25/21 21:51	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			03/25/21 21:51	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			03/25/21 21:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*90*		*70 - 130*		*03/25/21 21:51*	*1*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*		*03/25/21 21:51*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		03/24/21 14:37	03/25/21 14:17	2

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-767307/7
Matrix: Water
Analysis Batch: 767307

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			03/25/21 19:26	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			03/25/21 19:26	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			03/25/21 19:26	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			03/25/21 19:26	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			03/25/21 19:26	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			03/25/21 19:26	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/25/21 19:26	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			03/25/21 19:26	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			03/25/21 19:26	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			03/25/21 19:26	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			03/25/21 19:26	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			03/25/21 19:26	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			03/25/21 19:26	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			03/25/21 19:26	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			03/25/21 19:26	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			03/25/21 19:26	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			03/25/21 19:26	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/25/21 19:26	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			03/25/21 19:26	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			03/25/21 19:26	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			03/25/21 19:26	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			03/25/21 19:26	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			03/25/21 19:26	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			03/25/21 19:26	1
Benzene	0.50	U	0.50	0.11	ug/L			03/25/21 19:26	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			03/25/21 19:26	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			03/25/21 19:26	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			03/25/21 19:26	1
Bromoform	0.50	U	0.50	0.080	ug/L			03/25/21 19:26	1
Bromomethane	0.57	U	0.57	0.31	ug/L			03/25/21 19:26	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			03/25/21 19:26	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			03/25/21 19:26	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			03/25/21 19:26	1
Chloroethane	0.50	U	0.50	0.23	ug/L			03/25/21 19:26	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			03/25/21 19:26	1
Chloroform	0.50	U	0.50	0.12	ug/L			03/25/21 19:26	1
Chloromethane	0.50	U	0.50	0.18	ug/L			03/25/21 19:26	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			03/25/21 19:26	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			03/25/21 19:26	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			03/25/21 19:26	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			03/25/21 19:26	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			03/25/21 19:26	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			03/25/21 19:26	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			03/25/21 19:26	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			03/25/21 19:26	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			03/25/21 19:26	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			03/25/21 19:26	1
Naphthalene	0.67	U	0.67	0.080	ug/L			03/25/21 19:26	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-767307/7
Matrix: Water
Analysis Batch: 767307

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			03/25/21 19:26	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			03/25/21 19:26	1
o-Xylene	0.50	U	0.50	0.090	ug/L			03/25/21 19:26	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			03/25/21 19:26	1
Styrene	0.50	U	0.50	0.090	ug/L			03/25/21 19:26	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			03/25/21 19:26	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			03/25/21 19:26	1
Toluene	0.50	U	0.50	0.11	ug/L			03/25/21 19:26	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			03/25/21 19:26	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			03/25/21 19:26	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			03/25/21 19:26	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			03/25/21 19:26	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			03/25/21 19:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*87*		*70 - 130*		*03/25/21 19:26*	*1*
1,2-Dichlorobenzene-d4	*96*		*70 - 130*		*03/25/21 19:26*	*1*

Lab Sample ID: LCS 460-767307/3
Matrix: Water
Analysis Batch: 767307

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	1.94		ug/L		97	70 - 130
1,1,1-Trichloroethane	2.00	2.01		ug/L		101	70 - 130
1,1,2,2-Tetrachloroethane	2.00	1.97		ug/L		99	70 - 130
1,1,2-Trichloroethane	2.00	1.96		ug/L		98	70 - 130
1,1-Dichloroethane	2.00	1.85		ug/L		93	70 - 130
1,1-Dichloroethene	2.00	2.05		ug/L		102	70 - 130
1,1-Dichloropropene	2.00	1.92		ug/L		96	70 - 130
1,2,3-Trichlorobenzene	2.00	1.99		ug/L		99	70 - 130
1,2,3-Trichloropropane	2.00	2.02		ug/L		101	70 - 130
1,2,4-Trichlorobenzene	2.00	1.93		ug/L		97	70 - 130
1,2,4-Trimethylbenzene	2.00	1.70		ug/L		85	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	2.47		ug/L		124	70 - 130
1,2-Dibromoethane	2.00	1.87		ug/L		94	70 - 130
1,2-Dichlorobenzene	2.00	1.86		ug/L		93	70 - 130
1,2-Dichloroethane	2.00	1.96		ug/L		98	70 - 130
1,2-Dichloropropane	2.00	1.84		ug/L		92	70 - 130
1,3,5-Trimethylbenzene	2.00	1.66		ug/L		83	70 - 130
1,3-Dichlorobenzene	2.00	1.88		ug/L		94	70 - 130
1,3-Dichloropropane	2.00	1.87		ug/L		94	70 - 130
1,4-Dichlorobenzene	2.00	1.93		ug/L		96	70 - 130
2,2-Dichloropropane	2.00	1.90		ug/L		95	70 - 130
2-Chlorotoluene	2.00	1.62		ug/L		81	70 - 130
4-Chlorotoluene	2.00	1.71		ug/L		85	70 - 130
4-Isopropyltoluene	2.00	1.75		ug/L		87	70 - 130
Benzene	2.00	1.93		ug/L		97	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-767307/3
Matrix: Water
Analysis Batch: 767307

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	2.00	1.91		ug/L		95	70 - 130
Bromochloromethane	2.00	2.04		ug/L		102	70 - 130
Bromodichloromethane	2.00	1.95		ug/L		97	70 - 130
Bromoform	2.00	2.22		ug/L		111	70 - 130
Bromomethane	2.00	1.95		ug/L		98	70 - 130
Carbon tetrachloride	2.00	1.99		ug/L		99	70 - 130
Chlorobenzene	2.00	1.80		ug/L		90	70 - 130
Dibromochloromethane	2.00	1.82		ug/L		91	70 - 130
Chloroethane	2.00	1.67		ug/L		84	70 - 130
Vinyl chloride	2.00	1.81		ug/L		91	70 - 130
Chloroform	2.00	1.95		ug/L		97	70 - 130
Chloromethane	2.00	1.54		ug/L		77	70 - 130
cis-1,2-Dichloroethene	2.00	2.04		ug/L		102	70 - 130
cis-1,3-Dichloropropene	2.00	1.93		ug/L		96	70 - 130
Dibromomethane	2.00	1.98		ug/L		99	70 - 130
Dichlorodifluoromethane	2.00	1.55		ug/L		77	70 - 130
Ethylbenzene	2.00	1.71		ug/L		85	70 - 130
Hexachlorobutadiene	2.00	2.09		ug/L		104	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	1.76		ug/L		88	70 - 130
Methylene Chloride	2.00	1.92		ug/L		96	70 - 130
m-Xylene & p-Xylene	4.00	3.45		ug/L		86	70 - 130
Isopropylbenzene	2.00	1.71		ug/L		86	70 - 130
Naphthalene	2.00	1.86		ug/L		93	70 - 130
n-Butylbenzene	2.00	1.73		ug/L		86	70 - 130
N-Propylbenzene	2.00	1.67		ug/L		83	70 - 130
o-Xylene	2.00	1.62		ug/L		81	70 - 130
sec-Butylbenzene	2.00	1.80		ug/L		90	70 - 130
Styrene	2.00	1.62		ug/L		81	70 - 130
tert-Butylbenzene	2.00	1.67		ug/L		83	70 - 130
Tetrachloroethene	2.00	1.93		ug/L		97	70 - 130
Toluene	2.00	1.82		ug/L		91	70 - 130
trans-1,2-Dichloroethene	2.00	1.90		ug/L		95	70 - 130
trans-1,3-Dichloropropene	2.00	1.72		ug/L		86	70 - 130
Trichloroethene	2.00	2.08		ug/L		104	70 - 130
Trichlorofluoromethane	2.00	1.96		ug/L		98	70 - 130
Xylenes, Total	6.00	5.07		ug/L		85	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*95*		*70 - 130*
1,2-Dichlorobenzene-d4	*107*		*70 - 130*

Lab Sample ID: LCSD 460-767307/4
Matrix: Water
Analysis Batch: 767307

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	2.04		ug/L		102	70 - 130	5	30
1,1,1-Trichloroethane	2.00	1.89		ug/L		94	70 - 130	6	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-767307/4
Matrix: Water
Analysis Batch: 767307

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	2.00	2.17		ug/L		109	70 - 130	10	30
1,1,2-Trichloroethane	2.00	2.01		ug/L		100	70 - 130	3	30
1,1-Dichloroethane	2.00	1.85		ug/L		92	70 - 130	0	30
1,1-Dichloroethene	2.00	1.92		ug/L		96	70 - 130	7	30
1,1-Dichloropropene	2.00	1.93		ug/L		96	70 - 130	0	30
1,2,3-Trichlorobenzene	2.00	2.05		ug/L		102	70 - 130	3	30
1,2,3-Trichloropropane	2.00	1.99		ug/L		99	70 - 130	2	30
1,2,4-Trichlorobenzene	2.00	1.99		ug/L		99	70 - 130	3	30
1,2,4-Trimethylbenzene	2.00	1.74		ug/L		87	70 - 130	2	30
1,2-Dibromo-3-Chloropropane	2.00	2.36		ug/L		118	70 - 130	5	30
1,2-Dibromoethane	2.00	2.17		ug/L		108	70 - 130	14	30
1,2-Dichlorobenzene	2.00	2.02		ug/L		101	70 - 130	8	30
1,2-Dichloroethane	2.00	2.14		ug/L		107	70 - 130	9	30
1,2-Dichloropropane	2.00	1.93		ug/L		96	70 - 130	4	30
1,3,5-Trimethylbenzene	2.00	1.74		ug/L		87	70 - 130	5	30
1,3-Dichlorobenzene	2.00	2.00		ug/L		100	70 - 130	6	30
1,3-Dichloropropane	2.00	2.05		ug/L		102	70 - 130	9	30
1,4-Dichlorobenzene	2.00	1.91		ug/L		95	70 - 130	1	30
2,2-Dichloropropane	2.00	1.90		ug/L		95	70 - 130	0	30
2-Chlorotoluene	2.00	1.69		ug/L		85	70 - 130	4	30
4-Chlorotoluene	2.00	1.72		ug/L		86	70 - 130	1	30
4-Isopropyltoluene	2.00	1.72		ug/L		86	70 - 130	1	30
Benzene	2.00	1.94		ug/L		97	70 - 130	0	30
Bromobenzene	2.00	1.88		ug/L		94	70 - 130	1	30
Bromochloromethane	2.00	2.00		ug/L		100	70 - 130	2	30
Bromodichloromethane	2.00	1.88		ug/L		94	70 - 130	4	30
Bromoform	2.00	2.32		ug/L		116	70 - 130	4	30
Bromomethane	2.00	1.79		ug/L		90	70 - 130	9	30
Carbon tetrachloride	2.00	2.13		ug/L		107	70 - 130	7	30
Chlorobenzene	2.00	1.75		ug/L		87	70 - 130	3	30
Dibromochloromethane	2.00	2.12		ug/L		106	70 - 130	16	30
Chloroethane	2.00	1.76		ug/L		88	70 - 130	5	30
Vinyl chloride	2.00	1.69		ug/L		84	70 - 130	7	30
Chloroform	2.00	2.00		ug/L		100	70 - 130	3	30
Chloromethane	2.00	1.53		ug/L		76	70 - 130	1	30
cis-1,2-Dichloroethene	2.00	2.04		ug/L		102	70 - 130	0	30
cis-1,3-Dichloropropene	2.00	1.88		ug/L		94	70 - 130	2	30
Dibromomethane	2.00	2.11		ug/L		105	70 - 130	6	30
Dichlorodifluoromethane	2.00	1.57		ug/L		79	70 - 130	1	30
Ethylbenzene	2.00	1.79		ug/L		89	70 - 130	5	30
Hexachlorobutadiene	2.00	2.21		ug/L		110	70 - 130	6	30
Methyl-t-Butyl Ether (MTBE)	2.00	1.86		ug/L		93	70 - 130	5	30
Methylene Chloride	2.00	1.94		ug/L		97	70 - 130	1	30
m-Xylene & p-Xylene	4.00	3.51		ug/L		88	70 - 130	2	30
Isopropylbenzene	2.00	1.75		ug/L		87	70 - 130	2	30
Naphthalene	2.00	1.97		ug/L		98	70 - 130	6	30
n-Butylbenzene	2.00	1.76		ug/L		88	70 - 130	2	30
N-Propylbenzene	2.00	1.64		ug/L		82	70 - 130	1	30
o-Xylene	2.00	1.66		ug/L		83	70 - 130	2	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-767307/4
Matrix: Water
Analysis Batch: 767307

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			2.00	1.75		ug/L		88	70 - 130	2	30
Styrene			2.00	1.55		ug/L		77	70 - 130	4	30
tert-Butylbenzene			2.00	1.65		ug/L		82	70 - 130	1	30
Tetrachloroethene			2.00	1.94		ug/L		97	70 - 130	0	30
Toluene			2.00	1.75		ug/L		87	70 - 130	4	30
trans-1,2-Dichloroethene			2.00	2.00		ug/L		100	70 - 130	5	30
trans-1,3-Dichloropropene			2.00	1.81		ug/L		91	70 - 130	5	30
Trichloroethene			2.00	1.98		ug/L		99	70 - 130	5	30
Trichlorofluoromethane			2.00	1.81		ug/L		90	70 - 130	8	30
Xylenes, Total			6.00	5.17		ug/L		86	70 - 130	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*88*		*70 - 130*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-502972/1-A ^2
Matrix: Water
Analysis Batch: 503341

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 502972

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		03/24/21 14:37	03/25/21 13:46	2

Lab Sample ID: LCS 160-502972/2-A ^2
Matrix: Water
Analysis Batch: 503341

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 502972

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	201		ug/L		101	82 - 116		

Lab Sample ID: 160-41514-A-4-B MS ^2
Matrix: Water
Analysis Batch: 503341

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 502972

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	194		ug/L		97	82 - 116		

Lab Sample ID: 160-41514-A-4-C MSD ^2
Matrix: Water
Analysis Batch: 503341

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 502972

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	193		ug/L		96	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41507-1
SDG: 42871

GC/MS VOA

Analysis Batch: 767307

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41507-1	42871-001	Total/NA	Water	524.2	
160-41507-2	42871-002	Total/NA	Water	524.2	
MB 460-767307/7	Method Blank	Total/NA	Water	524.2	
LCS 460-767307/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-767307/4	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 502972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41507-2	42871-002	Total/NA	Water	3010A	
MB 160-502972/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-502972/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-41514-A-4-B MS ^2	Matrix Spike	Total/NA	Water	3010A	
160-41514-A-4-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 503341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41507-2	42871-002	Total/NA	Water	6020A	502972
MB 160-502972/1-A ^2	Method Blank	Total/NA	Water	6020A	502972
LCS 160-502972/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	502972
160-41514-A-4-B MS ^2	Matrix Spike	Total/NA	Water	6020A	502972
160-41514-A-4-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	6020A	502972

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41507-1
SDG: 42871

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	DCZ								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-41507-1	42871-001	90	104								
160-41507-2	42871-002	90	100								
LCS 460-767307/3	Lab Control Sample	95	107								
LCSD 460-767307/4	Lab Control Sample Dup	88	98								
MB 460-767307/7	Method Blank	87	96								

Surrogate Legend

BFB = 4-Bromofluorobenzene
DCZ = 1,2-Dichlorobenzene-d4

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-41651-1
Laboratory Sample Delivery Group: 42915
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
4/21/2021 9:06:34 AM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Surrogate Summary 32

Job ID: 160-41651-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-41651-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 4/8/2021 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were -0.2º C and 18.7º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42915-001 (160-41651-1), 42915-002 (160-41651-2), 42915-003 (160-41651-3), 42915-004 (160-41651-4), 42915-005 (160-41651-5) and 42915-006 (160-41651-6) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2.

Job ID: 160-41651-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The samples were analyzed on 04/17/2021.

Analytical Batch 460-772038:
The laboratory control sample duplicate (LCSD) recovered outside the lower QC limit for Dichlorodifluoromethane. The compound is not part of the client's data quality objectives; therefore, the results were reported: 42915-001 (160-41651-1), 42915-002 (160-41651-2), 42915-003 (160-41651-3), (MB 460-772038/15), (LCS 460-772038/1011), and (LCS 460-772038/13).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 42915-002 (160-41651-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 04/13/2021 and analyzed on 04/14/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

160-41651 Chain of Custody

Chain of Custody No. 42915

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Requires EDD X

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23398 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Metz	Phone: 314-298-8566
2		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	4/6/21	1512	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0			W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0			W	RTW-1 Effluent	250 ML	p	1	Hno3										X		
003	E	G	095-153	0		1447	W	RTW-2 Influent	40 ML	SC	3	HCL					X							
004	E	G	095-155	0		1455	W	RTW-3 Influent	40 ML	SC	3	HCL					X							
005	E	G	095-157	0		1502	W	RTW-4 Influent	40 ML	SC	3	HCL					X							
006	E	G	TB-1	0		1330	W	Trip Blank	40 ML	SC	3	HCL					X							

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. Metz 4/7/21	Print FED EX	Print
Signature 1400	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print FED EX	Print Steven Warrington 4/8/21	Print
Signature	Signature 0930	Signature

Contractor Lab Sample Disposal
- ☐ Return To Client
- ☒ Disposal by Lab
- ☐ Archive For ____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 160-211576.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 160-41651-1
Address: 777 New Durham Road, ,	Due Date Requested: 4/21/2021			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	524.2_Preserved/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
42915-001 (160-41651-1)	4/6/21	15:12 Eastern		Water			X	3	
42915-002 (160-41651-2)	4/6/21	15:12 Eastern		Water			X	3	
42915-003 (160-41651-3)	4/6/21	14:47 Eastern		Water			X	3	
42915-004 (160-41651-4)	4/6/21	14:55 Eastern		Water			X	3	
42915-005 (160-41651-5)	4/6/21	15:02 Eastern		Water			X	3	
42915-006 (160-41651-6)	4/6/21	13:30 Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Melissa [signature]	Date/Time: 4/8/21 1500	Company	Received by: Acciemo via Fedex	Date/Time: 4/9/21 1000	Company TAE
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 2.3°C/2.0°C		

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41651-1
SDG Number: 42915

Login Number: 41651
List Number: 1
Creator: Worthington, Sierra M

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41651-1
SDG Number: 42915

Login Number: 41651
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 04/09/21 12:16 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.0°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41651-1
SDG: 42915

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41651-1
SDG: 42915

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41651-1
SDG: 42915

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-41651-1	42915-001	Water	04/06/21 15:12	04/08/21 09:30	
160-41651-2	42915-002	Water	04/06/21 15:12	04/08/21 09:30	
160-41651-3	42915-003	Water	04/06/21 14:47	04/08/21 09:30	
160-41651-4	42915-004	Water	04/06/21 14:55	04/08/21 09:30	
160-41651-5	42915-005	Water	04/06/21 15:02	04/08/21 09:30	
160-41651-6	42915-006	Water	04/06/21 13:30	04/08/21 09:30	

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41651-1
SDG: 42915

Client Sample ID: 42915-001
Date Collected: 04/06/21 15:12
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-1
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/17/21 05:11	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/17/21 05:11	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			04/17/21 05:11	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			04/17/21 05:11	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			04/17/21 05:11	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			04/17/21 05:11	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 05:11	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			04/17/21 05:11	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			04/17/21 05:11	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			04/17/21 05:11	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			04/17/21 05:11	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			04/17/21 05:11	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			04/17/21 05:11	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			04/17/21 05:11	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			04/17/21 05:11	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			04/17/21 05:11	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			04/17/21 05:11	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 05:11	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			04/17/21 05:11	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 05:11	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/17/21 05:11	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			04/17/21 05:11	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			04/17/21 05:11	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			04/17/21 05:11	1
Benzene	0.50	U	0.50	0.11	ug/L			04/17/21 05:11	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			04/17/21 05:11	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			04/17/21 05:11	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			04/17/21 05:11	1
Bromoform	0.50	U	0.50	0.080	ug/L			04/17/21 05:11	1
Bromomethane	0.57	U	0.57	0.31	ug/L			04/17/21 05:11	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			04/17/21 05:11	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			04/17/21 05:11	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			04/17/21 05:11	1
Chloroethane	0.50	U	0.50	0.23	ug/L			04/17/21 05:11	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			04/17/21 05:11	1
Chloroform	**0.51**		0.50	0.12	ug/L			04/17/21 05:11	1
Chloromethane	0.50	U	0.50	0.18	ug/L			04/17/21 05:11	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			04/17/21 05:11	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 05:11	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			04/17/21 05:11	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			04/17/21 05:11	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			04/17/21 05:11	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			04/17/21 05:11	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/17/21 05:11	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			04/17/21 05:11	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			04/17/21 05:11	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 05:11	1
Naphthalene	0.67	U	0.67	0.080	ug/L			04/17/21 05:11	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 05:11	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41651-1
SDG: 42915

Client Sample ID: 42915-001

Date Collected: 04/06/21 15:12
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 05:11	1
o-Xylene	0.50	U	0.50	0.090	ug/L			04/17/21 05:11	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			04/17/21 05:11	1
Styrene	0.50	U	0.50	0.090	ug/L			04/17/21 05:11	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			04/17/21 05:11	1
Tetrachloroethene	**3.4**		0.50	0.14	ug/L			04/17/21 05:11	1
Toluene	0.50	U	0.50	0.11	ug/L			04/17/21 05:11	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			04/17/21 05:11	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			04/17/21 05:11	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			04/17/21 05:11	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			04/17/21 05:11	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			04/17/21 05:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*70 - 130*		*04/17/21 05:11*	*1*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*		*04/17/21 05:11*	*1*

Client Sample ID: 42915-002

Date Collected: 04/06/21 15:12
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/17/21 05:38	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/17/21 05:38	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			04/17/21 05:38	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			04/17/21 05:38	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			04/17/21 05:38	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			04/17/21 05:38	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 05:38	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			04/17/21 05:38	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			04/17/21 05:38	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			04/17/21 05:38	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			04/17/21 05:38	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			04/17/21 05:38	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			04/17/21 05:38	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			04/17/21 05:38	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			04/17/21 05:38	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			04/17/21 05:38	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			04/17/21 05:38	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 05:38	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			04/17/21 05:38	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 05:38	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/17/21 05:38	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			04/17/21 05:38	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			04/17/21 05:38	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			04/17/21 05:38	1
Benzene	0.50	U	0.50	0.11	ug/L			04/17/21 05:38	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			04/17/21 05:38	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			04/17/21 05:38	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41651-1
SDG: 42915

Client Sample ID: 42915-002
Date Collected: 04/06/21 15:12
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			04/17/21 05:38	1
Bromoform	0.50	U	0.50	0.080	ug/L			04/17/21 05:38	1
Bromomethane	0.57	U	0.57	0.31	ug/L			04/17/21 05:38	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			04/17/21 05:38	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			04/17/21 05:38	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			04/17/21 05:38	1
Chloroethane	0.50	U	0.50	0.23	ug/L			04/17/21 05:38	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			04/17/21 05:38	1
Chloroform	0.50	U	0.50	0.12	ug/L			04/17/21 05:38	1
Chloromethane	0.50	U	0.50	0.18	ug/L			04/17/21 05:38	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			04/17/21 05:38	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 05:38	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			04/17/21 05:38	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			04/17/21 05:38	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			04/17/21 05:38	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			04/17/21 05:38	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/17/21 05:38	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			04/17/21 05:38	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			04/17/21 05:38	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 05:38	1
Naphthalene	0.67	U	0.67	0.080	ug/L			04/17/21 05:38	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 05:38	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 05:38	1
o-Xylene	0.50	U	0.50	0.090	ug/L			04/17/21 05:38	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			04/17/21 05:38	1
Styrene	0.50	U	0.50	0.090	ug/L			04/17/21 05:38	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			04/17/21 05:38	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			04/17/21 05:38	1
Toluene	0.50	U	0.50	0.11	ug/L			04/17/21 05:38	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			04/17/21 05:38	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			04/17/21 05:38	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			04/17/21 05:38	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			04/17/21 05:38	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			04/17/21 05:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*102*		*70 - 130*		*04/17/21 05:38*	*1*
1,2-Dichlorobenzene-d4	*98*		*70 - 130*		*04/17/21 05:38*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		04/13/21 11:22	04/14/21 17:17	2

Client Sample ID: 42915-003
Date Collected: 04/06/21 14:47
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/17/21 06:06	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41651-1
SDG: 42915

Client Sample ID: 42915-003
Date Collected: 04/06/21 14:47
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-3
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/17/21 06:06	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			04/17/21 06:06	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			04/17/21 06:06	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			04/17/21 06:06	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			04/17/21 06:06	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 06:06	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			04/17/21 06:06	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			04/17/21 06:06	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			04/17/21 06:06	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			04/17/21 06:06	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			04/17/21 06:06	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			04/17/21 06:06	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			04/17/21 06:06	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			04/17/21 06:06	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			04/17/21 06:06	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			04/17/21 06:06	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 06:06	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			04/17/21 06:06	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 06:06	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/17/21 06:06	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			04/17/21 06:06	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			04/17/21 06:06	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			04/17/21 06:06	1
Benzene	0.50	U	0.50	0.11	ug/L			04/17/21 06:06	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			04/17/21 06:06	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			04/17/21 06:06	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			04/17/21 06:06	1
Bromoform	0.50	U	0.50	0.080	ug/L			04/17/21 06:06	1
Bromomethane	0.57	U	0.57	0.31	ug/L			04/17/21 06:06	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			04/17/21 06:06	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			04/17/21 06:06	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			04/17/21 06:06	1
Chloroethane	0.50	U	0.50	0.23	ug/L			04/17/21 06:06	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			04/17/21 06:06	1
Chloroform	**0.38**	**J**	0.50	0.12	ug/L			04/17/21 06:06	1
Chloromethane	0.50	U	0.50	0.18	ug/L			04/17/21 06:06	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			04/17/21 06:06	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 06:06	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			04/17/21 06:06	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			04/17/21 06:06	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			04/17/21 06:06	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			04/17/21 06:06	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/17/21 06:06	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			04/17/21 06:06	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			04/17/21 06:06	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 06:06	1
Naphthalene	0.67	U	0.67	0.080	ug/L			04/17/21 06:06	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 06:06	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 06:06	1

Client Sample ID: 42915-003

Date Collected: 04/06/21 14:47
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-3

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.50	U	0.50	0.090	ug/L			04/17/21 06:06	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			04/17/21 06:06	1
Styrene	0.50	U	0.50	0.090	ug/L			04/17/21 06:06	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			04/17/21 06:06	1
Tetrachloroethene	**0.30**	**J**	0.50	0.14	ug/L			04/17/21 06:06	1
Toluene	0.50	U	0.50	0.11	ug/L			04/17/21 06:06	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			04/17/21 06:06	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			04/17/21 06:06	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			04/17/21 06:06	1
Trichlorofluoromethane	**0.32**	**J**	0.50	0.27	ug/L			04/17/21 06:06	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			04/17/21 06:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*04/17/21 06:06*	*1*
1,2-Dichlorobenzene-d4	*107*		*70 - 130*		*04/17/21 06:06*	*1*

Client Sample ID: 42915-004

Date Collected: 04/06/21 14:55
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/17/21 23:16	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/17/21 23:16	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			04/17/21 23:16	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			04/17/21 23:16	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			04/17/21 23:16	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			04/17/21 23:16	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 23:16	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			04/17/21 23:16	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			04/17/21 23:16	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			04/17/21 23:16	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			04/17/21 23:16	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			04/17/21 23:16	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			04/17/21 23:16	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			04/17/21 23:16	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			04/17/21 23:16	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			04/17/21 23:16	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			04/17/21 23:16	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 23:16	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			04/17/21 23:16	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 23:16	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/17/21 23:16	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			04/17/21 23:16	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			04/17/21 23:16	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			04/17/21 23:16	1
Benzene	0.50	U	0.50	0.11	ug/L			04/17/21 23:16	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			04/17/21 23:16	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			04/17/21 23:16	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			04/17/21 23:16	1

Client Sample ID: 42915-004

Date Collected: 04/06/21 14:55
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-4

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.080	ug/L			04/17/21 23:16	1
Bromomethane	0.57	U	0.57	0.31	ug/L			04/17/21 23:16	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			04/17/21 23:16	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			04/17/21 23:16	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			04/17/21 23:16	1
Chloroethane	0.50	U	0.50	0.23	ug/L			04/17/21 23:16	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			04/17/21 23:16	1
Chloroform	**1.5**		0.50	0.12	ug/L			04/17/21 23:16	1
Chloromethane	0.50	U	0.50	0.18	ug/L			04/17/21 23:16	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			04/17/21 23:16	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 23:16	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			04/17/21 23:16	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			04/17/21 23:16	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			04/17/21 23:16	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			04/17/21 23:16	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/17/21 23:16	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			04/17/21 23:16	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			04/17/21 23:16	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 23:16	1
Naphthalene	0.67	U	0.67	0.080	ug/L			04/17/21 23:16	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 23:16	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 23:16	1
o-Xylene	0.50	U	0.50	0.090	ug/L			04/17/21 23:16	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			04/17/21 23:16	1
Styrene	0.50	U	0.50	0.090	ug/L			04/17/21 23:16	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			04/17/21 23:16	1
Tetrachloroethene	**0.14**	**J**	0.50	0.14	ug/L			04/17/21 23:16	1
Toluene	0.50	U	0.50	0.11	ug/L			04/17/21 23:16	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			04/17/21 23:16	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			04/17/21 23:16	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			04/17/21 23:16	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			04/17/21 23:16	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			04/17/21 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*109*		*70 - 130*		*04/17/21 23:16*	*1*
1,2-Dichlorobenzene-d4	*111*		*70 - 130*		*04/17/21 23:16*	*1*

Client Sample ID: 42915-005

Date Collected: 04/06/21 15:02
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/17/21 22:21	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/17/21 22:21	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			04/17/21 22:21	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			04/17/21 22:21	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			04/17/21 22:21	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			04/17/21 22:21	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41651-1
SDG: 42915

Client Sample ID: 42915-005
Date Collected: 04/06/21 15:02
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-5
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 22:21	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			04/17/21 22:21	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			04/17/21 22:21	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			04/17/21 22:21	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			04/17/21 22:21	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			04/17/21 22:21	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			04/17/21 22:21	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			04/17/21 22:21	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			04/17/21 22:21	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			04/17/21 22:21	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			04/17/21 22:21	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 22:21	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			04/17/21 22:21	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 22:21	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/17/21 22:21	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			04/17/21 22:21	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			04/17/21 22:21	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			04/17/21 22:21	1
Benzene	0.50	U	0.50	0.11	ug/L			04/17/21 22:21	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			04/17/21 22:21	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			04/17/21 22:21	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			04/17/21 22:21	1
Bromoform	0.50	U	0.50	0.080	ug/L			04/17/21 22:21	1
Bromomethane	0.57	U	0.57	0.31	ug/L			04/17/21 22:21	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			04/17/21 22:21	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			04/17/21 22:21	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			04/17/21 22:21	1
Chloroethane	0.50	U	0.50	0.23	ug/L			04/17/21 22:21	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			04/17/21 22:21	1
Chloroform	**0.13**	**J**	0.50	0.12	ug/L			04/17/21 22:21	1
Chloromethane	0.50	U	0.50	0.18	ug/L			04/17/21 22:21	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			04/17/21 22:21	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 22:21	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			04/17/21 22:21	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			04/17/21 22:21	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			04/17/21 22:21	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			04/17/21 22:21	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/17/21 22:21	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			04/17/21 22:21	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			04/17/21 22:21	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 22:21	1
Naphthalene	0.67	U	0.67	0.080	ug/L			04/17/21 22:21	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 22:21	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 22:21	1
o-Xylene	0.50	U	0.50	0.090	ug/L			04/17/21 22:21	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			04/17/21 22:21	1
Styrene	0.50	U	0.50	0.090	ug/L			04/17/21 22:21	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			04/17/21 22:21	1
Tetrachloroethene	**0.23**	**J**	0.50	0.14	ug/L			04/17/21 22:21	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41651-1
SDG: 42915

Client Sample ID: 42915-005

Date Collected: 04/06/21 15:02
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-5

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Toluene	0.50	U	0.50	0.11	ug/L			04/17/21 22:21	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			04/17/21 22:21	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			04/17/21 22:21	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			04/17/21 22:21	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			04/17/21 22:21	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			04/17/21 22:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*70 - 130*		*04/17/21 22:21*	*1*
1,2-Dichlorobenzene-d4	*105*		*70 - 130*		*04/17/21 22:21*	*1*

Client Sample ID: 42915-006

Date Collected: 04/06/21 13:30
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-6

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/17/21 22:48	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/17/21 22:48	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			04/17/21 22:48	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			04/17/21 22:48	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			04/17/21 22:48	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			04/17/21 22:48	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 22:48	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			04/17/21 22:48	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			04/17/21 22:48	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			04/17/21 22:48	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			04/17/21 22:48	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			04/17/21 22:48	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			04/17/21 22:48	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			04/17/21 22:48	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			04/17/21 22:48	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			04/17/21 22:48	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			04/17/21 22:48	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 22:48	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			04/17/21 22:48	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 22:48	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/17/21 22:48	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			04/17/21 22:48	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			04/17/21 22:48	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			04/17/21 22:48	1
Benzene	0.50	U	0.50	0.11	ug/L			04/17/21 22:48	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			04/17/21 22:48	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			04/17/21 22:48	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			04/17/21 22:48	1
Bromoform	0.50	U	0.50	0.080	ug/L			04/17/21 22:48	1
Bromomethane	0.57	U	0.57	0.31	ug/L			04/17/21 22:48	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			04/17/21 22:48	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			04/17/21 22:48	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			04/17/21 22:48	1

Client Sample ID: 42915-006

Date Collected: 04/06/21 13:30
Date Received: 04/08/21 09:30

Lab Sample ID: 160-41651-6

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	0.50	U	0.50	0.23	ug/L			04/17/21 22:48	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			04/17/21 22:48	1
Chloroform	0.50	U	0.50	0.12	ug/L			04/17/21 22:48	1
Chloromethane	0.50	U	0.50	0.18	ug/L			04/17/21 22:48	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			04/17/21 22:48	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 22:48	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			04/17/21 22:48	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			04/17/21 22:48	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			04/17/21 22:48	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			04/17/21 22:48	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/17/21 22:48	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			04/17/21 22:48	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			04/17/21 22:48	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 22:48	1
Naphthalene	0.67	U	0.67	0.080	ug/L			04/17/21 22:48	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 22:48	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 22:48	1
o-Xylene	0.50	U	0.50	0.090	ug/L			04/17/21 22:48	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			04/17/21 22:48	1
Styrene	**0.18**	**J**	0.50	0.090	ug/L			04/17/21 22:48	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			04/17/21 22:48	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			04/17/21 22:48	1
Toluene	0.50	U	0.50	0.11	ug/L			04/17/21 22:48	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			04/17/21 22:48	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			04/17/21 22:48	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			04/17/21 22:48	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			04/17/21 22:48	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			04/17/21 22:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*106*		*70 - 130*		*04/17/21 22:48*	*1*
1,2-Dichlorobenzene-d4	*106*		*70 - 130*		*04/17/21 22:48*	*1*

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41651-1
SDG: 42915

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-772038/15
Matrix: Water
Analysis Batch: 772038

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/17/21 01:03	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/17/21 01:03	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			04/17/21 01:03	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			04/17/21 01:03	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			04/17/21 01:03	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			04/17/21 01:03	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 01:03	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			04/17/21 01:03	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			04/17/21 01:03	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			04/17/21 01:03	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			04/17/21 01:03	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			04/17/21 01:03	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			04/17/21 01:03	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			04/17/21 01:03	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			04/17/21 01:03	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			04/17/21 01:03	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			04/17/21 01:03	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 01:03	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			04/17/21 01:03	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 01:03	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/17/21 01:03	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			04/17/21 01:03	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			04/17/21 01:03	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			04/17/21 01:03	1
Benzene	0.50	U	0.50	0.11	ug/L			04/17/21 01:03	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			04/17/21 01:03	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			04/17/21 01:03	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			04/17/21 01:03	1
Bromoform	0.50	U	0.50	0.080	ug/L			04/17/21 01:03	1
Bromomethane	0.57	U	0.57	0.31	ug/L			04/17/21 01:03	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			04/17/21 01:03	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			04/17/21 01:03	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			04/17/21 01:03	1
Chloroethane	0.50	U	0.50	0.23	ug/L			04/17/21 01:03	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			04/17/21 01:03	1
Chloroform	0.50	U	0.50	0.12	ug/L			04/17/21 01:03	1
Chloromethane	0.50	U	0.50	0.18	ug/L			04/17/21 01:03	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			04/17/21 01:03	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 01:03	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			04/17/21 01:03	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			04/17/21 01:03	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			04/17/21 01:03	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			04/17/21 01:03	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/17/21 01:03	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			04/17/21 01:03	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			04/17/21 01:03	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 01:03	1
Naphthalene	0.67	U	0.67	0.080	ug/L			04/17/21 01:03	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-772038/15
Matrix: Water
Analysis Batch: 772038

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 01:03	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 01:03	1
o-Xylene	0.50	U	0.50	0.090	ug/L			04/17/21 01:03	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			04/17/21 01:03	1
Styrene	0.50	U	0.50	0.090	ug/L			04/17/21 01:03	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			04/17/21 01:03	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			04/17/21 01:03	1
Toluene	0.50	U	0.50	0.11	ug/L			04/17/21 01:03	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			04/17/21 01:03	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			04/17/21 01:03	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			04/17/21 01:03	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			04/17/21 01:03	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			04/17/21 01:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*102*		*70 - 130*		*04/17/21 01:03*	*1*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*		*04/17/21 01:03*	*1*

Lab Sample ID: LCS 460-772038/1011
Matrix: Water
Analysis Batch: 772038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	1.96		ug/L		98	70 - 130
1,1,1-Trichloroethane	2.00	2.01		ug/L		100	70 - 130
1,1,2,2-Tetrachloroethane	2.00	2.16		ug/L		108	70 - 130
1,1,2-Trichloroethane	2.00	1.97		ug/L		98	70 - 130
1,1-Dichloroethane	2.00	1.94		ug/L		97	70 - 130
1,1-Dichloroethene	2.00	1.87		ug/L		94	70 - 130
1,1-Dichloropropene	2.00	2.01		ug/L		100	70 - 130
1,2,3-Trichlorobenzene	2.00	2.31		ug/L		116	70 - 130
1,2,3-Trichloropropane	2.00	2.07		ug/L		103	70 - 130
1,2,4-Trichlorobenzene	2.00	2.10		ug/L		105	70 - 130
1,2,4-Trimethylbenzene	2.00	1.92		ug/L		96	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	2.57		ug/L		129	70 - 130
1,2-Dibromoethane	2.00	2.14		ug/L		107	70 - 130
1,2-Dichlorobenzene	2.00	2.16		ug/L		108	70 - 130
1,2-Dichloroethane	2.00	2.04		ug/L		102	70 - 130
1,2-Dichloropropane	2.00	2.06		ug/L		103	70 - 130
1,3,5-Trimethylbenzene	2.00	1.95		ug/L		97	70 - 130
1,3-Dichlorobenzene	2.00	1.93		ug/L		96	70 - 130
1,3-Dichloropropane	2.00	1.97		ug/L		99	70 - 130
1,4-Dichlorobenzene	2.00	1.92		ug/L		96	70 - 130
2,2-Dichloropropane	2.00	1.40		ug/L		70	70 - 130
2-Chlorotoluene	2.00	1.89		ug/L		94	70 - 130
4-Chlorotoluene	2.00	1.87		ug/L		94	70 - 130
4-Isopropyltoluene	2.00	1.90		ug/L		95	70 - 130
Benzene	2.00	1.99		ug/L		100	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-772038/1011
Matrix: Water
Analysis Batch: 772038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	2.00	1.93		ug/L		97	70 - 130
Bromochloromethane	2.00	1.99		ug/L		100	70 - 130
Bromodichloromethane	2.00	1.97		ug/L		99	70 - 130
Bromoform	2.00	2.08		ug/L		104	70 - 130
Bromomethane	2.00	2.25		ug/L		112	70 - 130
Carbon tetrachloride	2.00	1.99		ug/L		99	70 - 130
Chlorobenzene	2.00	2.02		ug/L		101	70 - 130
Dibromochloromethane	2.00	1.96		ug/L		98	70 - 130
Chloroethane	2.00	1.92		ug/L		96	70 - 130
Vinyl chloride	2.00	1.93		ug/L		97	70 - 130
Chloroform	2.00	1.93		ug/L		97	70 - 130
Chloromethane	2.00	1.74		ug/L		87	70 - 130
cis-1,2-Dichloroethene	2.00	1.95		ug/L		98	70 - 130
cis-1,3-Dichloropropene	2.00	1.88		ug/L		94	70 - 130
Dibromomethane	2.00	2.01		ug/L		101	70 - 130
Dichlorodifluoromethane	2.00	1.41		ug/L		70	70 - 130
Ethylbenzene	2.00	1.95		ug/L		98	70 - 130
Hexachlorobutadiene	2.00	1.96		ug/L		98	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	2.35		ug/L		118	70 - 130
Methylene Chloride	2.00	1.95		ug/L		97	70 - 130
m-Xylene & p-Xylene	4.00	3.86		ug/L		97	70 - 130
Isopropylbenzene	2.00	2.02		ug/L		101	70 - 130
Naphthalene	2.00	2.50		ug/L		125	70 - 130
n-Butylbenzene	2.00	1.79		ug/L		90	70 - 130
N-Propylbenzene	2.00	1.96		ug/L		98	70 - 130
o-Xylene	2.00	1.87		ug/L		93	70 - 130
sec-Butylbenzene	2.00	2.05		ug/L		102	70 - 130
Styrene	2.00	1.95		ug/L		98	70 - 130
tert-Butylbenzene	2.00	1.88		ug/L		94	70 - 130
Tetrachloroethene	2.00	1.87		ug/L		93	70 - 130
Toluene	2.00	1.99		ug/L		100	70 - 130
trans-1,2-Dichloroethene	2.00	1.88		ug/L		94	70 - 130
trans-1,3-Dichloropropene	2.00	1.68		ug/L		84	70 - 130
Trichloroethene	2.00	1.80		ug/L		90	70 - 130
Trichlorofluoromethane	2.00	1.94		ug/L		97	70 - 130
Xylenes, Total	6.00	5.73		ug/L		95	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*70 - 130*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*

Lab Sample ID: LCSD 460-772038/13
Matrix: Water
Analysis Batch: 772038

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	2.08		ug/L		104	70 - 130	6	30
1,1,1-Trichloroethane	2.00	1.93		ug/L		97	70 - 130	4	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-772038/13
Matrix: Water
Analysis Batch: 772038

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	2.00	2.09		ug/L		105	70 - 130	3	30
1,1,2-Trichloroethane	2.00	1.88		ug/L		94	70 - 130	5	30
1,1-Dichloroethane	2.00	1.90		ug/L		95	70 - 130	2	30
1,1-Dichloroethene	2.00	1.79		ug/L		90	70 - 130	5	30
1,1-Dichloropropene	2.00	1.95		ug/L		97	70 - 130	3	30
1,2,3-Trichlorobenzene	2.00	2.19		ug/L		110	70 - 130	5	30
1,2,3-Trichloropropane	2.00	2.25		ug/L		112	70 - 130	8	30
1,2,4-Trichlorobenzene	2.00	2.07		ug/L		103	70 - 130	1	30
1,2,4-Trimethylbenzene	2.00	1.89		ug/L		94	70 - 130	2	30
1,2-Dibromo-3-Chloropropane	2.00	2.04		ug/L		102	70 - 130	23	30
1,2-Dibromoethane	2.00	2.04		ug/L		102	70 - 130	5	30
1,2-Dichlorobenzene	2.00	1.96		ug/L		98	70 - 130	10	30
1,2-Dichloroethane	2.00	2.04		ug/L		102	70 - 130	0	30
1,2-Dichloropropane	2.00	1.99		ug/L		100	70 - 130	3	30
1,3,5-Trimethylbenzene	2.00	1.80		ug/L		90	70 - 130	8	30
1,3-Dichlorobenzene	2.00	1.86		ug/L		93	70 - 130	4	30
1,3-Dichloropropane	2.00	1.94		ug/L		97	70 - 130	2	30
1,4-Dichlorobenzene	2.00	1.89		ug/L		94	70 - 130	2	30
2,2-Dichloropropane	2.00	1.43		ug/L		72	70 - 130	2	30
2-Chlorotoluene	2.00	1.90		ug/L		95	70 - 130	1	30
4-Chlorotoluene	2.00	1.80		ug/L		90	70 - 130	4	30
4-Isopropyltoluene	2.00	1.90		ug/L		95	70 - 130	0	30
Benzene	2.00	1.95		ug/L		97	70 - 130	2	30
Bromobenzene	2.00	1.84		ug/L		92	70 - 130	5	30
Bromochloromethane	2.00	2.00		ug/L		100	70 - 130	0	30
Bromodichloromethane	2.00	1.88		ug/L		94	70 - 130	5	30
Bromoform	2.00	1.99		ug/L		100	70 - 130	4	30
Bromomethane	2.00	1.83		ug/L		92	70 - 130	20	30
Carbon tetrachloride	2.00	1.99		ug/L		99	70 - 130	0	30
Chlorobenzene	2.00	1.94		ug/L		97	70 - 130	4	30
Dibromochloromethane	2.00	1.97		ug/L		98	70 - 130	0	30
Chloroethane	2.00	1.69		ug/L		85	70 - 130	13	30
Vinyl chloride	2.00	1.62		ug/L		81	70 - 130	17	30
Chloroform	2.00	1.94		ug/L		97	70 - 130	0	30
Chloromethane	2.00	1.44		ug/L		72	70 - 130	19	30
cis-1,2-Dichloroethene	2.00	1.91		ug/L		96	70 - 130	2	30
cis-1,3-Dichloropropene	2.00	1.82		ug/L		91	70 - 130	3	30
Dibromomethane	2.00	1.96		ug/L		98	70 - 130	3	30
Dichlorodifluoromethane	2.00	1.20		ug/L		60	70 - 130	16	30
Ethylbenzene	2.00	1.91		ug/L		96	70 - 130	2	30
Hexachlorobutadiene	2.00	1.96		ug/L		98	70 - 130	0	30
Methyl-t-Butyl Ether (MTBE)	2.00	1.86		ug/L		93	70 - 130	24	30
Methylene Chloride	2.00	1.90		ug/L		95	70 - 130	3	30
m-Xylene & p-Xylene	4.00	3.79		ug/L		95	70 - 130	2	30
Isopropylbenzene	2.00	2.00		ug/L		100	70 - 130	1	30
Naphthalene	2.00	2.28		ug/L		114	70 - 130	9	30
n-Butylbenzene	2.00	1.78		ug/L		89	70 - 130	1	30
N-Propylbenzene	2.00	1.92		ug/L		96	70 - 130	2	30
o-Xylene	2.00	1.94		ug/L		97	70 - 130	4	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-772038/13
Matrix: Water
Analysis Batch: 772038

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			2.00	2.00		ug/L		100	70 - 130	2	30
Styrene			2.00	1.89		ug/L		95	70 - 130	3	30
tert-Butylbenzene			2.00	1.87		ug/L		93	70 - 130	1	30
Tetrachloroethene			2.00	1.93		ug/L		96	70 - 130	3	30
Toluene			2.00	1.89		ug/L		94	70 - 130	5	30
trans-1,2-Dichloroethene			2.00	1.89		ug/L		94	70 - 130	0	30
trans-1,3-Dichloropropene			2.00	1.89		ug/L		95	70 - 130	12	30
Trichloroethene			2.00	1.81		ug/L		90	70 - 130	1	30
Trichlorofluoromethane			2.00	1.58		ug/L		79	70 - 130	21	30
Xylenes, Total			6.00	5.72		ug/L		95	70 - 130	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*70 - 130*
1,2-Dichlorobenzene-d4	*100*		*70 - 130*

Lab Sample ID: MB 460-772192/8
Matrix: Water
Analysis Batch: 772192

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/17/21 21:53	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/17/21 21:53	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			04/17/21 21:53	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			04/17/21 21:53	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			04/17/21 21:53	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			04/17/21 21:53	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 21:53	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			04/17/21 21:53	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			04/17/21 21:53	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			04/17/21 21:53	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			04/17/21 21:53	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			04/17/21 21:53	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			04/17/21 21:53	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			04/17/21 21:53	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			04/17/21 21:53	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			04/17/21 21:53	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			04/17/21 21:53	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 21:53	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			04/17/21 21:53	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/17/21 21:53	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/17/21 21:53	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			04/17/21 21:53	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			04/17/21 21:53	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			04/17/21 21:53	1
Benzene	0.50	U	0.50	0.11	ug/L			04/17/21 21:53	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			04/17/21 21:53	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			04/17/21 21:53	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			04/17/21 21:53	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-772192/8
Matrix: Water
Analysis Batch: 772192

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.080	ug/L			04/17/21 21:53	1
Bromomethane	0.57	U	0.57	0.31	ug/L			04/17/21 21:53	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			04/17/21 21:53	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			04/17/21 21:53	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			04/17/21 21:53	1
Chloroethane	0.50	U	0.50	0.23	ug/L			04/17/21 21:53	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			04/17/21 21:53	1
Chloroform	0.50	U	0.50	0.12	ug/L			04/17/21 21:53	1
Chloromethane	0.50	U	0.50	0.18	ug/L			04/17/21 21:53	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			04/17/21 21:53	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/17/21 21:53	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			04/17/21 21:53	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			04/17/21 21:53	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			04/17/21 21:53	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			04/17/21 21:53	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/17/21 21:53	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			04/17/21 21:53	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			04/17/21 21:53	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 21:53	1
Naphthalene	0.67	U	0.67	0.080	ug/L			04/17/21 21:53	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 21:53	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			04/17/21 21:53	1
o-Xylene	0.50	U	0.50	0.090	ug/L			04/17/21 21:53	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			04/17/21 21:53	1
Styrene	0.50	U	0.50	0.090	ug/L			04/17/21 21:53	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			04/17/21 21:53	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			04/17/21 21:53	1
Toluene	0.50	U	0.50	0.11	ug/L			04/17/21 21:53	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			04/17/21 21:53	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			04/17/21 21:53	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			04/17/21 21:53	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			04/17/21 21:53	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			04/17/21 21:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*70 - 130*		*04/17/21 21:53*	*1*
1,2-Dichlorobenzene-d4	*107*		*70 - 130*		*04/17/21 21:53*	*1*

Lab Sample ID: LCS 460-772192/4
Matrix: Water
Analysis Batch: 772192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	2.11		ug/L		106	70 - 130
1,1,1-Trichloroethane	2.00	2.06		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	2.00	2.05		ug/L		102	70 - 130
1,1,2-Trichloroethane	2.00	2.13		ug/L		106	70 - 130
1,1-Dichloroethane	2.00	2.00		ug/L		100	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-772192/4
Matrix: Water
Analysis Batch: 772192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	2.00	1.92		ug/L		96	70 - 130
1,1-Dichloropropene	2.00	1.98		ug/L		99	70 - 130
1,2,3-Trichlorobenzene	2.00	2.11		ug/L		106	70 - 130
1,2,3-Trichloropropane	2.00	1.95		ug/L		98	70 - 130
1,2,4-Trichlorobenzene	2.00	2.13		ug/L		106	70 - 130
1,2,4-Trimethylbenzene	2.00	1.96		ug/L		98	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	2.12		ug/L		106	70 - 130
1,2-Dibromoethane	2.00	2.13		ug/L		107	70 - 130
1,2-Dichlorobenzene	2.00	1.90		ug/L		95	70 - 130
1,2-Dichloroethane	2.00	1.97		ug/L		99	70 - 130
1,2-Dichloropropane	2.00	2.05		ug/L		103	70 - 130
1,3,5-Trimethylbenzene	2.00	1.98		ug/L		99	70 - 130
1,3-Dichlorobenzene	2.00	1.94		ug/L		97	70 - 130
1,3-Dichloropropane	2.00	2.00		ug/L		100	70 - 130
1,4-Dichlorobenzene	2.00	1.99		ug/L		99	70 - 130
2,2-Dichloropropane	2.00	2.12		ug/L		106	70 - 130
2-Chlorotoluene	2.00	1.90		ug/L		95	70 - 130
4-Chlorotoluene	2.00	1.86		ug/L		93	70 - 130
4-Isopropyltoluene	2.00	1.97		ug/L		98	70 - 130
Benzene	2.00	2.09		ug/L		105	70 - 130
Bromobenzene	2.00	1.90		ug/L		95	70 - 130
Bromochloromethane	2.00	2.17		ug/L		109	70 - 130
Bromodichloromethane	2.00	2.09		ug/L		104	70 - 130
Bromoform	2.00	2.03		ug/L		101	70 - 130
Bromomethane	2.00	1.97		ug/L		98	70 - 130
Carbon tetrachloride	2.00	2.07		ug/L		103	70 - 130
Chlorobenzene	2.00	2.03		ug/L		101	70 - 130
Dibromochloromethane	2.00	2.03		ug/L		102	70 - 130
Chloroethane	2.00	1.87		ug/L		93	70 - 130
Vinyl chloride	2.00	1.80		ug/L		90	70 - 130
Chloroform	2.00	1.92		ug/L		96	70 - 130
Chloromethane	2.00	1.81		ug/L		91	70 - 130
cis-1,2-Dichloroethene	2.00	2.04		ug/L		102	70 - 130
cis-1,3-Dichloropropene	2.00	2.19		ug/L		109	70 - 130
Dibromomethane	2.00	2.03		ug/L		102	70 - 130
Dichlorodifluoromethane	2.00	1.66		ug/L		83	70 - 130
Ethylbenzene	2.00	2.07		ug/L		104	70 - 130
Hexachlorobutadiene	2.00	1.83		ug/L		91	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	2.36		ug/L		118	70 - 130
Methylene Chloride	2.00	2.09		ug/L		104	70 - 130
m-Xylene & p-Xylene	4.00	3.90		ug/L		98	70 - 130
Isopropylbenzene	2.00	2.02		ug/L		101	70 - 130
Naphthalene	2.00	2.22		ug/L		111	70 - 130
n-Butylbenzene	2.00	1.84		ug/L		92	70 - 130
N-Propylbenzene	2.00	1.95		ug/L		97	70 - 130
o-Xylene	2.00	1.99		ug/L		99	70 - 130
sec-Butylbenzene	2.00	2.14		ug/L		107	70 - 130
Styrene	2.00	1.94		ug/L		97	70 - 130
tert-Butylbenzene	2.00	1.93		ug/L		97	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-772192/4
Matrix: Water
Analysis Batch: 772192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tetrachloroethene	2.00	2.07		ug/L		104	70 - 130
Toluene	2.00	1.99		ug/L		99	70 - 130
trans-1,2-Dichloroethene	2.00	1.89		ug/L		94	70 - 130
trans-1,3-Dichloropropene	2.00	2.23		ug/L		111	70 - 130
Trichloroethene	2.00	1.95		ug/L		97	70 - 130
Trichlorofluoromethane	2.00	2.04		ug/L		102	70 - 130
Xylenes, Total	6.00	5.89		ug/L		98	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*105*		*70 - 130*
1,2-Dichlorobenzene-d4	*104*		*70 - 130*

Lab Sample ID: LCSD 460-772192/5
Matrix: Water
Analysis Batch: 772192

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	2.03		ug/L		102	70 - 130	4	30
1,1,1-Trichloroethane	2.00	1.97		ug/L		99	70 - 130	4	30
1,1,2,2-Tetrachloroethane	2.00	1.96		ug/L		98	70 - 130	4	30
1,1,2-Trichloroethane	2.00	2.08		ug/L		104	70 - 130	2	30
1,1-Dichloroethane	2.00	2.06		ug/L		103	70 - 130	3	30
1,1-Dichloroethene	2.00	1.93		ug/L		96	70 - 130	0	30
1,1-Dichloropropene	2.00	1.97		ug/L		98	70 - 130	1	30
1,2,3-Trichlorobenzene	2.00	2.22		ug/L		111	70 - 130	5	30
1,2,3-Trichloropropane	2.00	2.18		ug/L		109	70 - 130	11	30
1,2,4-Trichlorobenzene	2.00	2.00		ug/L		100	70 - 130	6	30
1,2,4-Trimethylbenzene	2.00	1.96		ug/L		98	70 - 130	0	30
1,2-Dibromo-3-Chloropropane	2.00	2.03		ug/L		101	70 - 130	4	30
1,2-Dibromoethane	2.00	2.14		ug/L		107	70 - 130	0	30
1,2-Dichlorobenzene	2.00	2.00		ug/L		100	70 - 130	5	30
1,2-Dichloroethane	2.00	2.05		ug/L		102	70 - 130	4	30
1,2-Dichloropropane	2.00	2.11		ug/L		106	70 - 130	3	30
1,3,5-Trimethylbenzene	2.00	1.97		ug/L		99	70 - 130	0	30
1,3-Dichlorobenzene	2.00	1.88		ug/L		94	70 - 130	3	30
1,3-Dichloropropane	2.00	2.09		ug/L		105	70 - 130	4	30
1,4-Dichlorobenzene	2.00	1.99		ug/L		99	70 - 130	0	30
2,2-Dichloropropane	2.00	2.20		ug/L		110	70 - 130	3	30
2-Chlorotoluene	2.00	1.93		ug/L		96	70 - 130	1	30
4-Chlorotoluene	2.00	1.91		ug/L		95	70 - 130	3	30
4-Isopropyltoluene	2.00	2.00		ug/L		100	70 - 130	2	30
Benzene	2.00	2.08		ug/L		104	70 - 130	1	30
Bromobenzene	2.00	2.08		ug/L		104	70 - 130	9	30
Bromochloromethane	2.00	2.07		ug/L		104	70 - 130	5	30
Bromodichloromethane	2.00	2.05		ug/L		102	70 - 130	2	30
Bromoform	2.00	2.18		ug/L		109	70 - 130	7	30
Bromomethane	2.00	1.97		ug/L		99	70 - 130	0	30
Carbon tetrachloride	2.00	2.14		ug/L		107	70 - 130	3	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-772192/5
Matrix: Water
Analysis Batch: 772192

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene			2.00	1.95		ug/L		97	70 - 130	4	30
Dibromochloromethane			2.00	2.01		ug/L		101	70 - 130	1	30
Chloroethane			2.00	1.92		ug/L		96	70 - 130	3	30
Vinyl chloride			2.00	1.85		ug/L		92	70 - 130	3	30
Chloroform			2.00	1.98		ug/L		99	70 - 130	3	30
Chloromethane			2.00	1.75		ug/L		87	70 - 130	4	30
cis-1,2-Dichloroethene			2.00	2.07		ug/L		104	70 - 130	2	30
cis-1,3-Dichloropropene			2.00	1.97		ug/L		98	70 - 130	11	30
Dibromomethane			2.00	2.02		ug/L		101	70 - 130	0	30
Dichlorodifluoromethane			2.00	1.73		ug/L		86	70 - 130	4	30
Ethylbenzene			2.00	2.08		ug/L		104	70 - 130	0	30
Hexachlorobutadiene			2.00	2.02		ug/L		101	70 - 130	10	30
Methyl-t-Butyl Ether (MTBE)			2.00	2.57		ug/L		128	70 - 130	8	30
Methylene Chloride			2.00	2.06		ug/L		103	70 - 130	1	30
m-Xylene & p-Xylene			4.00	3.94		ug/L		98	70 - 130	1	30
Isopropylbenzene			2.00	2.09		ug/L		105	70 - 130	3	30
Naphthalene			2.00	2.26		ug/L		113	70 - 130	2	30
n-Butylbenzene			2.00	1.94		ug/L		97	70 - 130	5	30
N-Propylbenzene			2.00	1.98		ug/L		99	70 - 130	2	30
o-Xylene			2.00	1.90		ug/L		95	70 - 130	5	30
sec-Butylbenzene			2.00	2.07		ug/L		104	70 - 130	3	30
Styrene			2.00	1.90		ug/L		95	70 - 130	2	30
tert-Butylbenzene			2.00	1.95		ug/L		97	70 - 130	1	30
Tetrachloroethene			2.00	2.04		ug/L		102	70 - 130	1	30
Toluene			2.00	2.03		ug/L		102	70 - 130	2	30
trans-1,2-Dichloroethene			2.00	1.99		ug/L		99	70 - 130	5	30
trans-1,3-Dichloropropene			2.00	1.93		ug/L		97	70 - 130	14	30
Trichloroethene			2.00	1.95		ug/L		98	70 - 130	0	30
Trichlorofluoromethane			2.00	2.04		ug/L		102	70 - 130	0	30
Xylenes, Total			6.00	5.84		ug/L		97	70 - 130	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*70 - 130*
1,2-Dichlorobenzene-d4	*109*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-505426/1-A ^2
Matrix: Water
Analysis Batch: 505738

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 505426

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		04/13/21 11:22	04/14/21 17:10	2

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 160-505426/2-A ^2
Matrix: Water
Analysis Batch: 505738

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 505426

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	189		ug/L		94	82 - 116		

Lab Sample ID: 160-41651-2 MS
Matrix: Water
Analysis Batch: 505738

Client Sample ID: 42915-002
Prep Type: Total/NA
Prep Batch: 505426

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	190		ug/L		95	82 - 116		

Lab Sample ID: 160-41651-2 MSD
Matrix: Water
Analysis Batch: 505738

Client Sample ID: 42915-002
Prep Type: Total/NA
Prep Batch: 505426

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	189		ug/L		94	82 - 116	0	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41651-1
SDG: 42915

GC/MS VOA

Analysis Batch: 772038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41651-1	42915-001	Total/NA	Water	524.2	
160-41651-2	42915-002	Total/NA	Water	524.2	
160-41651-3	42915-003	Total/NA	Water	524.2	
MB 460-772038/15	Method Blank	Total/NA	Water	524.2	
LCS 460-772038/1011	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-772038/13	Lab Control Sample Dup	Total/NA	Water	524.2	

Analysis Batch: 772192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41651-4	42915-004	Total/NA	Water	524.2	
160-41651-5	42915-005	Total/NA	Water	524.2	
160-41651-6	42915-006	Total/NA	Water	524.2	
MB 460-772192/8	Method Blank	Total/NA	Water	524.2	
LCS 460-772192/4	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-772192/5	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 505426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41651-2	42915-002	Total/NA	Water	3010A	
MB 160-505426/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-505426/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-41651-2 MS	42915-002	Total/NA	Water	3010A	
160-41651-2 MSD	42915-002	Total/NA	Water	3010A	

Analysis Batch: 505738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41651-2	42915-002	Total/NA	Water	6020A	505426
MB 160-505426/1-A ^2	Method Blank	Total/NA	Water	6020A	505426
LCS 160-505426/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	505426
160-41651-2 MS	42915-002	Total/NA	Water	6020A	505426
160-41651-2 MSD	42915-002	Total/NA	Water	6020A	505426

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41651-1
SDG: 42915

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB	DCZ
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
160-41651-1	42915-001	101	100
160-41651-2	42915-002	102	98
160-41651-3	42915-003	99	107
160-41651-4	42915-004	109	111
160-41651-5	42915-005	104	105
160-41651-6	42915-006	106	106
LCS 460-772038/1011	Lab Control Sample	100	99
LCS 460-772192/4	Lab Control Sample	105	104
LCSD 460-772038/13	Lab Control Sample Dup	100	100
LCSD 460-772192/5	Lab Control Sample Dup	101	109
MB 460-772038/15	Method Blank	102	103
MB 460-772192/8	Method Blank	104	107

Surrogate Legend

BFB = 4-Bromofluorobenzene
DCZ = 1,2-Dichlorobenzene-d4

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-41786-1
Laboratory Sample Delivery Group: 42975
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
5/6/2021 2:42:12 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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QC Association Summary 20
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Job ID: 160-41786-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 160-41786-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 4/21/2021 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -0.1º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 42975-001 (160-41786-1) and 42975-002 (160-41786-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 04/28/2021.

Job ID: 160-41786-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Analytical Batch 460-774572:
The continuing calibration verification (CCV) recovered above the upper control limit for Bromoform. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data was reported: (CCV 460-774572/2).

The laboratory control sample duplicate (LCSD) recovered outside control limits for 1,1,2,2-Tetrachloroethane. This analyte was biased high in the LCSD and was not detected in the associated samples; therefore, the data was reported: (LCSD 460-774572/26).

The laboratory control sample duplicate (LCSD) recovered outside the lower control limit for 4-Isopropyltoluene. The laboratory control sample (LCS) recovery was within control limits: (LCSD 460-774572/26).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 42975-002 (160-41786-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 04/26/2021 and analyzed on 04/29/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 42975

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Meth	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD Use Trip Blank from 42956

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	4/19/21	1450	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1452	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		↘	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
~~002~~	E	G	TB-1	0			W	~~Trip Blank~~	~~40 ML~~	~~SC~~	~~3~~	~~HCL~~					X					

160-41786 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. Meth 4/20/21 1430	Print	Print
Signature	Signature FEDEX	Signature
1 Received By/Date/Time	2 Received By/Date/Time APR 21 2021 10:00	3 Received By/Date/Time
Print FEDEX	Print MICHA KORRINHIZER	Print
Signature	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 160-212119.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 160-41786-1
Address: 777 New Durham Road, ,	Due Date Requested: 5/4/2021			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	524.2_Preserved/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
42975-001 (160-41786-1)	4/19/21	14:50 Eastern		Water			X	3	
42975-002 (160-41786-2)	4/19/21	14:52 Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4/21/21 1707	ETA STL	Adriemo Via Fedex	4/22/21 9:50	YAE

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.9°C / 3.6°C

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41786-1
SDG Number: 42975

Login Number: 41786
List Number: 1
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 160-41786-1
SDG Number: 42975

Login Number: 41786
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 04/22/21 11:46 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.6°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41786-1
SDG: 42975

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41786-1
SDG: 42975

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41786-1
SDG: 42975

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-41786-1	42975-001	Water	04/19/21 14:50	04/21/21 10:00	
160-41786-2	42975-002	Water	04/19/21 14:52	04/21/21 10:00	

Client Sample Results

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41786-1
SDG: 42975

Client Sample ID: 42975-001

Date Collected: 04/19/21 14:50
Date Received: 04/21/21 10:00

Lab Sample ID: 160-41786-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/28/21 22:01	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/28/21 22:01	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			04/28/21 22:01	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			04/28/21 22:01	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			04/28/21 22:01	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			04/28/21 22:01	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/28/21 22:01	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			04/28/21 22:01	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			04/28/21 22:01	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			04/28/21 22:01	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			04/28/21 22:01	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			04/28/21 22:01	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			04/28/21 22:01	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			04/28/21 22:01	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			04/28/21 22:01	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			04/28/21 22:01	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			04/28/21 22:01	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/28/21 22:01	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			04/28/21 22:01	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/28/21 22:01	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/28/21 22:01	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			04/28/21 22:01	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			04/28/21 22:01	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			04/28/21 22:01	1
Benzene	0.50	U	0.50	0.11	ug/L			04/28/21 22:01	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			04/28/21 22:01	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			04/28/21 22:01	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			04/28/21 22:01	1
Bromoform	0.50	U	0.50	0.080	ug/L			04/28/21 22:01	1
Bromomethane	0.57	U	0.57	0.31	ug/L			04/28/21 22:01	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			04/28/21 22:01	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			04/28/21 22:01	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			04/28/21 22:01	1
Chloroethane	0.50	U	0.50	0.23	ug/L			04/28/21 22:01	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			04/28/21 22:01	1
Chloroform	**0.62**		0.50	0.12	ug/L			04/28/21 22:01	1
Chloromethane	0.50	U	0.50	0.18	ug/L			04/28/21 22:01	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			04/28/21 22:01	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/28/21 22:01	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			04/28/21 22:01	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			04/28/21 22:01	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			04/28/21 22:01	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			04/28/21 22:01	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/28/21 22:01	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			04/28/21 22:01	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			04/28/21 22:01	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			04/28/21 22:01	1
Naphthalene	0.67	U	0.67	0.080	ug/L			04/28/21 22:01	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			04/28/21 22:01	1

Client Sample ID: 42975-001

Date Collected: 04/19/21 14:50
Date Received: 04/21/21 10:00

Lab Sample ID: 160-41786-1

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			04/28/21 22:01	1
o-Xylene	0.50	U	0.50	0.090	ug/L			04/28/21 22:01	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			04/28/21 22:01	1
Styrene	0.50	U	0.50	0.090	ug/L			04/28/21 22:01	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			04/28/21 22:01	1
Tetrachloroethene	**2.8**		0.50	0.14	ug/L			04/28/21 22:01	1
Toluene	0.50	U	0.50	0.11	ug/L			04/28/21 22:01	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			04/28/21 22:01	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			04/28/21 22:01	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			04/28/21 22:01	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			04/28/21 22:01	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			04/28/21 22:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*70 - 130*		*04/28/21 22:01*	*1*
1,2-Dichlorobenzene-d4	*97*		*70 - 130*		*04/28/21 22:01*	*1*

Client Sample ID: 42975-002

Date Collected: 04/19/21 14:52
Date Received: 04/21/21 10:00

Lab Sample ID: 160-41786-2

Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/28/21 22:24	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/28/21 22:24	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			04/28/21 22:24	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			04/28/21 22:24	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			04/28/21 22:24	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			04/28/21 22:24	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/28/21 22:24	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			04/28/21 22:24	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			04/28/21 22:24	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			04/28/21 22:24	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			04/28/21 22:24	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			04/28/21 22:24	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			04/28/21 22:24	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			04/28/21 22:24	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			04/28/21 22:24	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			04/28/21 22:24	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			04/28/21 22:24	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/28/21 22:24	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			04/28/21 22:24	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/28/21 22:24	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/28/21 22:24	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			04/28/21 22:24	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			04/28/21 22:24	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			04/28/21 22:24	1
Benzene	0.50	U	0.50	0.11	ug/L			04/28/21 22:24	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			04/28/21 22:24	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			04/28/21 22:24	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41786-1
SDG: 42975

Client Sample ID: 42975-002
Date Collected: 04/19/21 14:52
Date Received: 04/21/21 10:00

Lab Sample ID: 160-41786-2
Matrix: Water

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			04/28/21 22:24	1
Bromoform	0.50	U	0.50	0.080	ug/L			04/28/21 22:24	1
Bromomethane	0.57	U	0.57	0.31	ug/L			04/28/21 22:24	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			04/28/21 22:24	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			04/28/21 22:24	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			04/28/21 22:24	1
Chloroethane	0.50	U	0.50	0.23	ug/L			04/28/21 22:24	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			04/28/21 22:24	1
Chloroform	0.50	U	0.50	0.12	ug/L			04/28/21 22:24	1
Chloromethane	0.50	U	0.50	0.18	ug/L			04/28/21 22:24	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			04/28/21 22:24	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/28/21 22:24	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			04/28/21 22:24	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			04/28/21 22:24	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			04/28/21 22:24	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			04/28/21 22:24	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/28/21 22:24	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			04/28/21 22:24	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			04/28/21 22:24	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			04/28/21 22:24	1
Naphthalene	0.67	U	0.67	0.080	ug/L			04/28/21 22:24	1
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			04/28/21 22:24	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			04/28/21 22:24	1
o-Xylene	0.50	U	0.50	0.090	ug/L			04/28/21 22:24	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			04/28/21 22:24	1
Styrene	0.50	U	0.50	0.090	ug/L			04/28/21 22:24	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			04/28/21 22:24	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			04/28/21 22:24	1
Toluene	0.50	U	0.50	0.11	ug/L			04/28/21 22:24	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			04/28/21 22:24	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			04/28/21 22:24	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			04/28/21 22:24	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			04/28/21 22:24	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			04/28/21 22:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*70 - 130*		*04/28/21 22:24*	*1*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*		*04/28/21 22:24*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		04/26/21 10:49	04/29/21 12:55	2

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-774572/7
Matrix: Water
Analysis Batch: 774572

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.12	ug/L			04/28/21 20:30	1
1,1,1-Trichloroethane	0.50	U	0.50	0.17	ug/L			04/28/21 20:30	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.15	ug/L			04/28/21 20:30	1
1,1,2-Trichloroethane	0.50	U	0.50	0.090	ug/L			04/28/21 20:30	1
1,1-Dichloroethane	0.50	U	0.50	0.14	ug/L			04/28/21 20:30	1
1,1-Dichloroethene	0.50	U	0.50	0.19	ug/L			04/28/21 20:30	1
1,1-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/28/21 20:30	1
1,2,3-Trichlorobenzene	0.59	U	0.59	0.10	ug/L			04/28/21 20:30	1
1,2,3-Trichloropropane	0.50	U	0.50	0.14	ug/L			04/28/21 20:30	1
1,2,4-Trichlorobenzene	0.55	U	0.55	0.10	ug/L			04/28/21 20:30	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.10	ug/L			04/28/21 20:30	1
1,2-Dibromo-3-Chloropropane	0.63	U	0.63	0.35	ug/L			04/28/21 20:30	1
1,2-Dibromoethane	0.50	U	0.50	0.13	ug/L			04/28/21 20:30	1
1,2-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			04/28/21 20:30	1
1,2-Dichloroethane	0.50	U	0.50	0.11	ug/L			04/28/21 20:30	1
1,2-Dichloropropane	0.50	U	0.50	0.11	ug/L			04/28/21 20:30	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.12	ug/L			04/28/21 20:30	1
1,3-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/28/21 20:30	1
1,3-Dichloropropane	0.50	U	0.50	0.090	ug/L			04/28/21 20:30	1
1,4-Dichlorobenzene	0.50	U	0.50	0.090	ug/L			04/28/21 20:30	1
2,2-Dichloropropane	0.50	U	0.50	0.15	ug/L			04/28/21 20:30	1
2-Chlorotoluene	0.50	U	0.50	0.10	ug/L			04/28/21 20:30	1
4-Chlorotoluene	0.50	U	0.50	0.11	ug/L			04/28/21 20:30	1
4-Isopropyltoluene	0.50	U	0.50	0.13	ug/L			04/28/21 20:30	1
Benzene	0.50	U	0.50	0.11	ug/L			04/28/21 20:30	1
Bromobenzene	0.50	U	0.50	0.070	ug/L			04/28/21 20:30	1
Bromochloromethane	0.50	U	0.50	0.10	ug/L			04/28/21 20:30	1
Bromodichloromethane	0.50	U	0.50	0.090	ug/L			04/28/21 20:30	1
Bromoform	0.50	U	0.50	0.080	ug/L			04/28/21 20:30	1
Bromomethane	0.57	U	0.57	0.31	ug/L			04/28/21 20:30	1
Carbon tetrachloride	0.50	U	0.50	0.17	ug/L			04/28/21 20:30	1
Chlorobenzene	0.50	U	0.50	0.10	ug/L			04/28/21 20:30	1
Dibromochloromethane	0.50	U	0.50	0.15	ug/L			04/28/21 20:30	1
Chloroethane	0.50	U	0.50	0.23	ug/L			04/28/21 20:30	1
Vinyl chloride	0.50	U	0.50	0.25	ug/L			04/28/21 20:30	1
Chloroform	0.50	U	0.50	0.12	ug/L			04/28/21 20:30	1
Chloromethane	0.50	U	0.50	0.18	ug/L			04/28/21 20:30	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.14	ug/L			04/28/21 20:30	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.18	ug/L			04/28/21 20:30	1
Dibromomethane	0.50	U	0.50	0.10	ug/L			04/28/21 20:30	1
Dichlorodifluoromethane	0.66	U	0.66	0.30	ug/L			04/28/21 20:30	1
Ethylbenzene	0.50	U	0.50	0.090	ug/L			04/28/21 20:30	1
Hexachlorobutadiene	0.50	U	0.50	0.19	ug/L			04/28/21 20:30	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.24	ug/L			04/28/21 20:30	1
Methylene Chloride	0.99	U	0.99	0.42	ug/L			04/28/21 20:30	1
m-Xylene & p-Xylene	1.0	U	1.0	0.24	ug/L			04/28/21 20:30	1
Isopropylbenzene	0.50	U	0.50	0.14	ug/L			04/28/21 20:30	1
Naphthalene	0.67	U	0.67	0.080	ug/L			04/28/21 20:30	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-774572/7
Matrix: Water
Analysis Batch: 774572

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	0.50	U	0.50	0.14	ug/L			04/28/21 20:30	1
N-Propylbenzene	0.50	U	0.50	0.14	ug/L			04/28/21 20:30	1
o-Xylene	0.50	U	0.50	0.090	ug/L			04/28/21 20:30	1
sec-Butylbenzene	0.50	U	0.50	0.15	ug/L			04/28/21 20:30	1
Styrene	0.50	U	0.50	0.090	ug/L			04/28/21 20:30	1
tert-Butylbenzene	0.50	U	0.50	0.16	ug/L			04/28/21 20:30	1
Tetrachloroethene	0.50	U	0.50	0.14	ug/L			04/28/21 20:30	1
Toluene	0.50	U	0.50	0.11	ug/L			04/28/21 20:30	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.13	ug/L			04/28/21 20:30	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.13	ug/L			04/28/21 20:30	1
Trichloroethene	0.50	U	0.50	0.11	ug/L			04/28/21 20:30	1
Trichlorofluoromethane	0.50	U	0.50	0.27	ug/L			04/28/21 20:30	1
Xylenes, Total	0.50	U	0.50	0.32	ug/L			04/28/21 20:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*70 - 130*		*04/28/21 20:30*	*1*
1,2-Dichlorobenzene-d4	*96*		*70 - 130*		*04/28/21 20:30*	*1*

Lab Sample ID: LCS 460-774572/4
Matrix: Water
Analysis Batch: 774572

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.00	2.04		ug/L		102	70 - 130
1,1,1-Trichloroethane	2.00	1.96		ug/L		98	70 - 130
1,1,2,2-Tetrachloroethane	2.00	2.50		ug/L		125	70 - 130
1,1,2-Trichloroethane	2.00	2.42		ug/L		121	70 - 130
1,1-Dichloroethane	2.00	2.11		ug/L		106	70 - 130
1,1-Dichloroethene	2.00	1.82		ug/L		91	70 - 130
1,1-Dichloropropene	2.00	1.77		ug/L		89	70 - 130
1,2,3-Trichlorobenzene	2.00	1.75		ug/L		87	70 - 130
1,2,3-Trichloropropane	2.00	2.43		ug/L		122	70 - 130
1,2,4-Trichlorobenzene	2.00	1.73		ug/L		87	70 - 130
1,2,4-Trimethylbenzene	2.00	1.55		ug/L		77	70 - 130
1,2-Dibromo-3-Chloropropane	2.00	2.48		ug/L		124	70 - 130
1,2-Dibromoethane	2.00	2.16		ug/L		108	70 - 130
1,2-Dichlorobenzene	2.00	1.75		ug/L		88	70 - 130
1,2-Dichloroethane	2.00	2.26		ug/L		113	70 - 130
1,2-Dichloropropane	2.00	2.13		ug/L		106	70 - 130
1,3,5-Trimethylbenzene	2.00	1.54		ug/L		77	70 - 130
1,3-Dichlorobenzene	2.00	1.64		ug/L		82	70 - 130
1,3-Dichloropropane	2.00	2.29		ug/L		114	70 - 130
1,4-Dichlorobenzene	2.00	1.66		ug/L		83	70 - 130
2,2-Dichloropropane	2.00	1.93		ug/L		97	70 - 130
2-Chlorotoluene	2.00	1.63		ug/L		82	70 - 130
4-Chlorotoluene	2.00	1.76		ug/L		88	70 - 130
4-Isopropyltoluene	2.00	1.50		ug/L		75	70 - 130
Benzene	2.00	1.99		ug/L		100	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-774572/4
Matrix: Water
Analysis Batch: 774572

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	2.00	1.68		ug/L		84	70 - 130
Bromochloromethane	2.00	2.13		ug/L		107	70 - 130
Bromodichloromethane	2.00	2.22		ug/L		111	70 - 130
Bromoform	2.00	2.53		ug/L		126	70 - 130
Bromomethane	2.00	1.98		ug/L		99	70 - 130
Carbon tetrachloride	2.00	2.00		ug/L		100	70 - 130
Chlorobenzene	2.00	1.67		ug/L		83	70 - 130
Dibromochloromethane	2.00	2.28		ug/L		114	70 - 130
Chloroethane	2.00	2.01		ug/L		100	70 - 130
Vinyl chloride	2.00	1.91		ug/L		96	70 - 130
Chloroform	2.00	2.19		ug/L		109	70 - 130
Chloromethane	2.00	2.16		ug/L		108	70 - 130
cis-1,2-Dichloroethene	2.00	2.05		ug/L		102	70 - 130
cis-1,3-Dichloropropene	2.00	2.01		ug/L		100	70 - 130
Dibromomethane	2.00	2.29		ug/L		114	70 - 130
Dichlorodifluoromethane	2.00	2.07		ug/L		104	70 - 130
Ethylbenzene	2.00	1.58		ug/L		79	70 - 130
Hexachlorobutadiene	2.00	1.74		ug/L		87	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.00	2.04		ug/L		102	70 - 130
Methylene Chloride	2.00	2.05		ug/L		103	70 - 130
m-Xylene & p-Xylene	4.00	3.03		ug/L		76	70 - 130
Isopropylbenzene	2.00	1.62		ug/L		81	70 - 130
Naphthalene	2.00	1.86		ug/L		93	70 - 130
n-Butylbenzene	2.00	1.59		ug/L		79	70 - 130
N-Propylbenzene	2.00	1.63		ug/L		81	70 - 130
o-Xylene	2.00	1.64		ug/L		82	70 - 130
sec-Butylbenzene	2.00	1.66		ug/L		83	70 - 130
Styrene	2.00	1.61		ug/L		81	70 - 130
tert-Butylbenzene	2.00	1.55		ug/L		78	70 - 130
Tetrachloroethene	2.00	1.67		ug/L		83	70 - 130
Toluene	2.00	1.77		ug/L		89	70 - 130
trans-1,2-Dichloroethene	2.00	1.98		ug/L		99	70 - 130
trans-1,3-Dichloropropene	2.00	1.77		ug/L		88	70 - 130
Trichloroethene	2.00	1.92		ug/L		96	70 - 130
Trichlorofluoromethane	2.00	1.92		ug/L		96	70 - 130
Xylenes, Total	6.00	4.66		ug/L		78	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*70 - 130*
1,2-Dichlorobenzene-d4	*99*		*70 - 130*

Lab Sample ID: LCSD 460-774572/26
Matrix: Water
Analysis Batch: 774572

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.00	1.99		ug/L		99	70 - 130	3	30
1,1,1-Trichloroethane	2.00	1.99		ug/L		100	70 - 130	2	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-774572/26
Matrix: Water
Analysis Batch: 774572

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	2.00	2.67		ug/L		133	70 - 130	7	30
1,1,2-Trichloroethane	2.00	2.20		ug/L		110	70 - 130	9	30
1,1-Dichloroethane	2.00	2.07		ug/L		103	70 - 130	2	30
1,1-Dichloroethene	2.00	1.86		ug/L		93	70 - 130	2	30
1,1-Dichloropropene	2.00	1.69		ug/L		84	70 - 130	5	30
1,2,3-Trichlorobenzene	2.00	1.72		ug/L		86	70 - 130	2	30
1,2,3-Trichloropropane	2.00	2.37		ug/L		118	70 - 130	3	30
1,2,4-Trichlorobenzene	2.00	1.62		ug/L		81	70 - 130	7	30
1,2,4-Trimethylbenzene	2.00	1.48		ug/L		74	70 - 130	5	30
1,2-Dibromo-3-Chloropropane	2.00	2.20		ug/L		110	70 - 130	12	30
1,2-Dibromoethane	2.00	2.26		ug/L		113	70 - 130	4	30
1,2-Dichlorobenzene	2.00	1.75		ug/L		88	70 - 130	0	30
1,2-Dichloroethane	2.00	2.22		ug/L		111	70 - 130	1	30
1,2-Dichloropropane	2.00	2.05		ug/L		103	70 - 130	4	30
1,3,5-Trimethylbenzene	2.00	1.50		ug/L		75	70 - 130	2	30
1,3-Dichlorobenzene	2.00	1.57		ug/L		78	70 - 130	5	30
1,3-Dichloropropane	2.00	2.20		ug/L		110	70 - 130	4	30
1,4-Dichlorobenzene	2.00	1.62		ug/L		81	70 - 130	3	30
2,2-Dichloropropane	2.00	1.92		ug/L		96	70 - 130	1	30
2-Chlorotoluene	2.00	1.58		ug/L		79	70 - 130	3	30
4-Chlorotoluene	2.00	1.65		ug/L		82	70 - 130	7	30
4-Isopropyltoluene	2.00	1.38		ug/L		69	70 - 130	9	30
Benzene	2.00	1.97		ug/L		98	70 - 130	1	30
Bromobenzene	2.00	1.66		ug/L		83	70 - 130	1	30
Bromochloromethane	2.00	2.04		ug/L		102	70 - 130	4	30
Bromodichloromethane	2.00	2.11		ug/L		106	70 - 130	5	30
Bromoform	2.00	2.40		ug/L		120	70 - 130	5	30
Bromomethane	2.00	1.84		ug/L		92	70 - 130	7	30
Carbon tetrachloride	2.00	1.98		ug/L		99	70 - 130	1	30
Chlorobenzene	2.00	1.75		ug/L		88	70 - 130	5	30
Dibromochloromethane	2.00	2.22		ug/L		111	70 - 130	3	30
Chloroethane	2.00	1.79		ug/L		89	70 - 130	11	30
Vinyl chloride	2.00	1.74		ug/L		87	70 - 130	10	30
Chloroform	2.00	2.14		ug/L		107	70 - 130	2	30
Chloromethane	2.00	1.99		ug/L		99	70 - 130	8	30
cis-1,2-Dichloroethene	2.00	1.97		ug/L		98	70 - 130	4	30
cis-1,3-Dichloropropene	2.00	1.77		ug/L		89	70 - 130	13	30
Dibromomethane	2.00	2.30		ug/L		115	70 - 130	1	30
Dichlorodifluoromethane	2.00	1.82		ug/L		91	70 - 130	13	30
Ethylbenzene	2.00	1.55		ug/L		78	70 - 130	1	30
Hexachlorobutadiene	2.00	1.73		ug/L		86	70 - 130	1	30
Methyl-t-Butyl Ether (MTBE)	2.00	2.11		ug/L		105	70 - 130	3	30
Methylene Chloride	2.00	2.18		ug/L		109	70 - 130	6	30
m-Xylene & p-Xylene	4.00	2.97		ug/L		74	70 - 130	2	30
Isopropylbenzene	2.00	1.46		ug/L		73	70 - 130	10	30
Naphthalene	2.00	1.95		ug/L		97	70 - 130	5	30
n-Butylbenzene	2.00	1.54		ug/L		77	70 - 130	3	30
N-Propylbenzene	2.00	1.54		ug/L		77	70 - 130	6	30
o-Xylene	2.00	1.45		ug/L		72	70 - 130	12	30

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-774572/26
Matrix: Water
Analysis Batch: 774572

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			2.00	1.53		ug/L		76	70 - 130	8	30
Styrene			2.00	1.56		ug/L		78	70 - 130	3	30
tert-Butylbenzene			2.00	1.44		ug/L		72	70 - 130	7	30
Tetrachloroethene			2.00	1.61		ug/L		81	70 - 130	3	30
Toluene			2.00	1.76		ug/L		88	70 - 130	1	30
trans-1,2-Dichloroethene			2.00	1.88		ug/L		94	70 - 130	5	30
trans-1,3-Dichloropropene			2.00	1.71		ug/L		86	70 - 130	3	30
Trichloroethene			2.00	1.96		ug/L		98	70 - 130	2	30
Trichlorofluoromethane			2.00	1.76		ug/L		88	70 - 130	9	30
Xylenes, Total			6.00	4.42		ug/L		74	70 - 130	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*70 - 130*
1,2-Dichlorobenzene-d4	*103*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-507092/1-A ^2
Matrix: Water
Analysis Batch: 507698

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 507092

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		04/26/21 10:49	04/29/21 11:53	2

Lab Sample ID: LCS 160-507092/2-A ^2
Matrix: Water
Analysis Batch: 507698

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 507092

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	200		ug/L		100	82 - 116		

Lab Sample ID: 160-41816-A-1-B MS ^2
Matrix: Water
Analysis Batch: 507698

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 507092

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	198		ug/L		99	82 - 116		

Lab Sample ID: 160-41816-A-1-C MSD ^2
Matrix: Water
Analysis Batch: 507698

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 507092

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	197		ug/L		98	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41786-1
SDG: 42975

GC/MS VOA

Analysis Batch: 774572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41786-1	42975-001	Total/NA	Water	524.2	
160-41786-2	42975-002	Total/NA	Water	524.2	
MB 460-774572/7	Method Blank	Total/NA	Water	524.2	
LCS 460-774572/4	Lab Control Sample	Total/NA	Water	524.2	
LCSD 460-774572/26	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 507092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41786-2	42975-002	Total/NA	Water	3010A	
MB 160-507092/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-507092/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
160-41816-A-1-B MS ^2	Matrix Spike	Total/NA	Water	3010A	
160-41816-A-1-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 507698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-41786-2	42975-002	Total/NA	Water	6020A	507092
MB 160-507092/1-A ^2	Method Blank	Total/NA	Water	6020A	507092
LCS 160-507092/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	507092
160-41816-A-1-B MS ^2	Matrix Spike	Total/NA	Water	6020A	507092
160-41816-A-1-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	6020A	507092

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 160-41786-1
SDG: 42975

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	DCZ								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
160-41786-1	42975-001	95	97								
160-41786-2	42975-002	98	99								
LCS 460-774572/4	Lab Control Sample	99	99								
LCSD 460-774572/26	Lab Control Sample Dup	99	103								
MB 460-774572/7	Method Blank	95	96								

Surrogate Legend

BFB = 4-Bromofluorobenzene
DCZ = 1,2-Dichlorobenzene-d4

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ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-148322-1
Laboratory Sample Delivery Group: 43008
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
5/21/2021 2:44:22 PM

Ivan Vania, Project Manager II
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LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148322-1
SDG: 43008

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-148322-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 280-148322-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

ll solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 5/6/2021 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.1º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 43008-001 (280-148322-1) and 43008-002 (280-148322-2) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 05/14/2021.

Job ID: 280-148322-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.

Analytical Batch 280-53185:
The continuing calibration verification (CCV) recovered above the upper control limit for Chloromethane aaat 31.7%D (30%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data was reported:

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recovered outside control limits for Bromomethane at 133% and 137% respectively (70-130%). This analyte was biased high in the LCS/LCSD and was not detected in the associated samples; therefore, the data was reported:

Due to the high concentration of Tetrachloroethene, the matrix spike / matrix spike duplicate (MS/MSD) could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 43008-003 (280-148322-3) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 05/12/2021 and analyzed on 05/17/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148322-1
SDG: 43008

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148322-1
SDG: 43008

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-148322-1	43008-001	Water	05/04/21 15:10	05/06/21 09:45	
280-148322-2	43008-002	Water	05/04/21 15:15	05/06/21 09:45	
280-148322-3	43008-003	Water	05/04/21 15:15	05/06/21 09:45	

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148322-1
SDG: 43008

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Client Sample ID: 43008-001
Date Collected: 05/04/21 15:10
Date Received: 05/06/21 09:45

Lab Sample ID: 280-148322-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			05/14/21 14:04	1
Chloromethane	0.50	U	0.50	0.097	ug/L			05/14/21 14:04	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/14/21 14:04	1
Bromomethane	0.50	U	0.50	0.27	ug/L			05/14/21 14:04	1
Chloroethane	0.50	U	0.50	0.14	ug/L			05/14/21 14:04	1
Trichlorofluoromethane	**0.22**	**J**	0.50	0.057	ug/L			05/14/21 14:04	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			05/14/21 14:04	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			05/14/21 14:04	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			05/14/21 14:04	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			05/14/21 14:04	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			05/14/21 14:04	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			05/14/21 14:04	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			05/14/21 14:04	1
Chloroform	0.50	U	0.50	0.11	ug/L			05/14/21 14:04	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			05/14/21 14:04	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			05/14/21 14:04	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			05/14/21 14:04	1
Benzene	0.50	U	0.50	0.077	ug/L			05/14/21 14:04	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			05/14/21 14:04	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			05/14/21 14:04	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			05/14/21 14:04	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			05/14/21 14:04	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			05/14/21 14:04	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			05/14/21 14:04	1
Toluene	0.50	U	0.50	0.041	ug/L			05/14/21 14:04	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			05/14/21 14:04	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			05/14/21 14:04	1
Tetrachloroethene	**4.2**		0.50	0.072	ug/L			05/14/21 14:04	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			05/14/21 14:04	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			05/14/21 14:04	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			05/14/21 14:04	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			05/14/21 14:04	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			05/14/21 14:04	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			05/14/21 14:04	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			05/14/21 14:04	1
o-Xylene	0.50	U	0.50	0.095	ug/L			05/14/21 14:04	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			05/14/21 14:04	1
Styrene	0.50	U	0.50	0.056	ug/L			05/14/21 14:04	1
Bromoform	0.50	U	0.50	0.092	ug/L			05/14/21 14:04	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			05/14/21 14:04	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			05/14/21 14:04	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			05/14/21 14:04	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			05/14/21 14:04	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			05/14/21 14:04	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			05/14/21 14:04	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			05/14/21 14:04	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			05/14/21 14:04	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			05/14/21 14:04	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			05/14/21 14:04	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 43008-001
Date Collected: 05/04/21 15:10
Date Received: 05/06/21 09:45

Lab Sample ID: 280-148322-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			05/14/21 14:04	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			05/14/21 14:04	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			05/14/21 14:04	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			05/14/21 14:04	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			05/14/21 14:04	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			05/14/21 14:04	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			05/14/21 14:04	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			05/14/21 14:04	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			05/14/21 14:04	1
Naphthalene	0.50	U	0.50	0.085	ug/L			05/14/21 14:04	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			05/14/21 14:04	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			05/14/21 14:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*05/14/21 14:04*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*05/14/21 14:04*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*05/14/21 14:04*	*1*

Client Sample ID: 43008-002
Date Collected: 05/04/21 15:15
Date Received: 05/06/21 09:45

Lab Sample ID: 280-148322-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			05/14/21 14:27	1
Chloromethane	0.50	U	0.50	0.097	ug/L			05/14/21 14:27	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/14/21 14:27	1
Bromomethane	0.50	U	0.50	0.27	ug/L			05/14/21 14:27	1
Chloroethane	0.50	U	0.50	0.14	ug/L			05/14/21 14:27	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			05/14/21 14:27	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			05/14/21 14:27	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			05/14/21 14:27	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			05/14/21 14:27	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			05/14/21 14:27	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			05/14/21 14:27	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			05/14/21 14:27	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			05/14/21 14:27	1
Chloroform	0.50	U	0.50	0.11	ug/L			05/14/21 14:27	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			05/14/21 14:27	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			05/14/21 14:27	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			05/14/21 14:27	1
Benzene	0.50	U	0.50	0.077	ug/L			05/14/21 14:27	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			05/14/21 14:27	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			05/14/21 14:27	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			05/14/21 14:27	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			05/14/21 14:27	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			05/14/21 14:27	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			05/14/21 14:27	1
Toluene	0.50	U	0.50	0.041	ug/L			05/14/21 14:27	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			05/14/21 14:27	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			05/14/21 14:27	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			05/14/21 14:27	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 43008-002
Date Collected: 05/04/21 15:15
Date Received: 05/06/21 09:45

Lab Sample ID: 280-148322-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			05/14/21 14:27	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			05/14/21 14:27	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			05/14/21 14:27	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			05/14/21 14:27	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			05/14/21 14:27	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			05/14/21 14:27	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			05/14/21 14:27	1
o-Xylene	0.50	U	0.50	0.095	ug/L			05/14/21 14:27	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			05/14/21 14:27	1
Styrene	0.50	U	0.50	0.056	ug/L			05/14/21 14:27	1
Bromoform	0.50	U	0.50	0.092	ug/L			05/14/21 14:27	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			05/14/21 14:27	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			05/14/21 14:27	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			05/14/21 14:27	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			05/14/21 14:27	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			05/14/21 14:27	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			05/14/21 14:27	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			05/14/21 14:27	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			05/14/21 14:27	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			05/14/21 14:27	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			05/14/21 14:27	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			05/14/21 14:27	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			05/14/21 14:27	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			05/14/21 14:27	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			05/14/21 14:27	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			05/14/21 14:27	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			05/14/21 14:27	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			05/14/21 14:27	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			05/14/21 14:27	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			05/14/21 14:27	1
Naphthalene	0.50	U	0.50	0.085	ug/L			05/14/21 14:27	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			05/14/21 14:27	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			05/14/21 14:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*		*05/14/21 14:27*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*05/14/21 14:27*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*05/14/21 14:27*	*1*

Method: 6020A - Metals (ICP/MS)

Client Sample ID: 43008-003
Date Collected: 05/04/21 15:15
Date Received: 05/06/21 09:45

Lab Sample ID: 280-148322-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/12/21 14:56	05/17/21 17:54	2

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148322-1
SDG: 43008

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	BFB	TOL
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-148322-1	43008-001	103	100	99
280-148322-2	43008-002	104	101	99
LCS 280-536185/3	Lab Control Sample	101	97	100
LCSD 280-536185/4	Lab Control Sample Dup	101	99	100
MB 280-536185/5	Method Blank	106	103	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-536185/5
Matrix: Water
Analysis Batch: 536185

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			05/14/21 12:31	1
Chloromethane	0.50	U	0.50	0.097	ug/L			05/14/21 12:31	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/14/21 12:31	1
Bromomethane	0.50	U	0.50	0.27	ug/L			05/14/21 12:31	1
Chloroethane	0.50	U	0.50	0.14	ug/L			05/14/21 12:31	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			05/14/21 12:31	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			05/14/21 12:31	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			05/14/21 12:31	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			05/14/21 12:31	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			05/14/21 12:31	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			05/14/21 12:31	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			05/14/21 12:31	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			05/14/21 12:31	1
Chloroform	0.50	U	0.50	0.11	ug/L			05/14/21 12:31	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			05/14/21 12:31	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			05/14/21 12:31	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			05/14/21 12:31	1
Benzene	0.50	U	0.50	0.077	ug/L			05/14/21 12:31	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			05/14/21 12:31	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			05/14/21 12:31	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			05/14/21 12:31	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			05/14/21 12:31	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			05/14/21 12:31	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			05/14/21 12:31	1
Toluene	0.50	U	0.50	0.041	ug/L			05/14/21 12:31	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			05/14/21 12:31	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			05/14/21 12:31	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			05/14/21 12:31	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			05/14/21 12:31	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			05/14/21 12:31	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			05/14/21 12:31	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			05/14/21 12:31	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			05/14/21 12:31	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			05/14/21 12:31	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			05/14/21 12:31	1
o-Xylene	0.50	U	0.50	0.095	ug/L			05/14/21 12:31	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			05/14/21 12:31	1
Styrene	0.50	U	0.50	0.056	ug/L			05/14/21 12:31	1
Bromoform	0.50	U	0.50	0.092	ug/L			05/14/21 12:31	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			05/14/21 12:31	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			05/14/21 12:31	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			05/14/21 12:31	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			05/14/21 12:31	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			05/14/21 12:31	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			05/14/21 12:31	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			05/14/21 12:31	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			05/14/21 12:31	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			05/14/21 12:31	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-536185/5
Matrix: Water
Analysis Batch: 536185

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			05/14/21 12:31	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			05/14/21 12:31	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			05/14/21 12:31	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			05/14/21 12:31	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			05/14/21 12:31	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			05/14/21 12:31	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			05/14/21 12:31	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			05/14/21 12:31	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			05/14/21 12:31	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			05/14/21 12:31	1
Naphthalene	0.50	U	0.50	0.085	ug/L			05/14/21 12:31	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			05/14/21 12:31	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			05/14/21 12:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*		*05/14/21 12:31*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*05/14/21 12:31*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*05/14/21 12:31*	*1*

Lab Sample ID: LCS 280-536185/3
Matrix: Water
Analysis Batch: 536185

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	10.0	10.7		ug/L		107	70 - 130
Chloromethane	10.0	12.7		ug/L		127	70 - 130
Vinyl chloride	10.0	10.8		ug/L		108	70 - 130
Bromomethane	10.0	13.3		ug/L		133	70 - 130
Chloroethane	10.0	10.8		ug/L		108	70 - 130
Trichlorofluoromethane	10.0	10.2		ug/L		102	70 - 130
1,1-Dichloroethene	10.0	10.9		ug/L		109	70 - 130
Methylene Chloride	10.0	10.4		ug/L		104	70 - 130
trans-1,2-Dichloroethene	10.0	10.7		ug/L		107	70 - 130
1,1-Dichloroethane	10.0	10.5		ug/L		105	70 - 130
cis-1,2-Dichloroethene	10.0	11.2		ug/L		112	70 - 130
2,2-Dichloropropane	10.0	10.4		ug/L		104	70 - 130
Bromochloromethane	10.0	11.0		ug/L		110	70 - 130
Chloroform	10.0	10.0		ug/L		100	70 - 130
1,1,1-Trichloroethane	10.0	11.3		ug/L		113	70 - 130
1,1-Dichloropropene	10.0	11.7		ug/L		117	70 - 130
Carbon tetrachloride	10.0	10.5		ug/L		105	70 - 130
Benzene	10.0	11.4		ug/L		114	70 - 130
1,2-Dichloroethane	10.0	11.5		ug/L		115	70 - 130
Trichloroethene	10.0	10.7		ug/L		107	70 - 130
1,2-Dichloropropane	10.0	11.4		ug/L		114	70 - 130
Dibromomethane	10.0	10.5		ug/L		105	70 - 130
Bromodichloromethane	10.0	11.2		ug/L		112	70 - 130
cis-1,3-Dichloropropene	10.0	11.3		ug/L		113	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-536185/3
Matrix: Water
Analysis Batch: 536185

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	10.0	11.3		ug/L		113	70 - 130
trans-1,3-Dichloropropene	10.0	9.60		ug/L		96	70 - 130
1,1,2-Trichloroethane	10.0	9.88		ug/L		99	70 - 130
Tetrachloroethene	10.0	11.8		ug/L		118	70 - 130
1,3-Dichloropropane	10.0	11.4		ug/L		114	70 - 130
Dibromochloromethane	10.0	9.75		ug/L		98	70 - 130
1,2-Dibromoethane	10.0	10.4		ug/L		104	70 - 130
Chlorobenzene	10.0	11.1		ug/L		111	70 - 130
1,1,1,2-Tetrachloroethane	10.0	9.57		ug/L		96	70 - 130
Ethylbenzene	10.0	11.3		ug/L		113	70 - 130
m-Xylene & p-Xylene	10.0	11.5		ug/L		115	70 - 130
o-Xylene	10.0	10.4		ug/L		104	70 - 130
Xylenes, Total	20.0	21.9		ug/L		110	70 - 130
Styrene	10.0	10.3		ug/L		103	70 - 130
Bromoform	10.0	8.82		ug/L		88	70 - 130
Isopropylbenzene	10.0	11.2		ug/L		112	70 - 130
1,1,2,2-Tetrachloroethane	10.0	11.4		ug/L		114	70 - 130
Bromobenzene	10.0	11.0		ug/L		110	70 - 130
1,2,3-Trichloropropane	10.0	10.4		ug/L		104	70 - 130
N-Propylbenzene	10.0	11.4		ug/L		114	70 - 130
2-Chlorotoluene	10.0	11.4		ug/L		114	70 - 130
1,3,5-Trimethylbenzene	10.0	11.6		ug/L		116	70 - 130
4-Chlorotoluene	10.0	11.5		ug/L		115	70 - 130
tert-Butylbenzene	10.0	11.4		ug/L		114	70 - 130
1,2,4-Trimethylbenzene	10.0	11.6		ug/L		116	70 - 130
sec-Butylbenzene	10.0	11.4		ug/L		114	70 - 130
1,3-Dichlorobenzene	10.0	11.1		ug/L		111	70 - 130
4-Isopropyltoluene	10.0	10.9		ug/L		109	70 - 130
1,4-Dichlorobenzene	10.0	11.1		ug/L		111	70 - 130
n-Butylbenzene	10.0	11.8		ug/L		118	70 - 130
1,2-Dichlorobenzene	10.0	11.2		ug/L		112	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	9.52		ug/L		95	70 - 130
1,2,4-Trichlorobenzene	10.0	10.1		ug/L		101	70 - 130
Hexachlorobutadiene	10.0	10.9		ug/L		109	70 - 130
Naphthalene	10.0	10.6		ug/L		106	70 - 130
1,2,3-Trichlorobenzene	10.0	9.82		ug/L		98	70 - 130
Methyl-t-Butyl Ether (MTBE)	10.0	9.34		ug/L		93	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-536185/4
Matrix: Water
Analysis Batch: 536185

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane	10.0	11.2		ug/L		112	70 - 130	4	20
Chloromethane	10.0	13.7		ug/L		137	70 - 130	8	20
Vinyl chloride	10.0	12.1		ug/L		121	70 - 130	11	20
Bromomethane	10.0	12.7		ug/L		127	70 - 130	5	20
Chloroethane	10.0	11.7		ug/L		117	70 - 130	8	20
Trichlorofluoromethane	10.0	11.0		ug/L		110	70 - 130	8	20
1,1-Dichloroethene	10.0	11.2		ug/L		112	70 - 130	3	20
Methylene Chloride	10.0	10.9		ug/L		109	70 - 130	5	20
trans-1,2-Dichloroethene	10.0	11.3		ug/L		113	70 - 130	5	20
1,1-Dichloroethane	10.0	11.2		ug/L		112	70 - 130	7	20
cis-1,2-Dichloroethene	10.0	11.9		ug/L		119	70 - 130	7	20
2,2-Dichloropropane	10.0	10.8		ug/L		108	70 - 130	4	20
Bromochloromethane	10.0	11.8		ug/L		118	70 - 130	7	20
Chloroform	10.0	10.8		ug/L		108	70 - 130	7	20
1,1,1-Trichloroethane	10.0	12.0		ug/L		120	70 - 130	6	20
1,1-Dichloropropene	10.0	12.0		ug/L		120	70 - 130	3	20
Carbon tetrachloride	10.0	11.2		ug/L		112	70 - 130	6	20
Benzene	10.0	12.1		ug/L		121	70 - 130	6	20
1,2-Dichloroethane	10.0	11.8		ug/L		118	70 - 130	3	20
Trichloroethene	10.0	11.0		ug/L		110	70 - 130	2	20
1,2-Dichloropropane	10.0	11.6		ug/L		116	70 - 130	2	20
Dibromomethane	10.0	11.1		ug/L		111	70 - 130	5	20
Bromodichloromethane	10.0	11.8		ug/L		118	70 - 130	6	20
cis-1,3-Dichloropropene	10.0	11.6		ug/L		116	70 - 130	3	20
Toluene	10.0	12.0		ug/L		120	70 - 130	6	20
trans-1,3-Dichloropropene	10.0	10.1		ug/L		101	70 - 130	5	20
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	70 - 130	2	20
Tetrachloroethene	10.0	11.9		ug/L		119	70 - 130	1	20
1,3-Dichloropropane	10.0	11.6		ug/L		116	70 - 130	2	20
Dibromochloromethane	10.0	10.3		ug/L		103	70 - 130	5	20
1,2-Dibromoethane	10.0	10.7		ug/L		107	70 - 130	3	20
Chlorobenzene	10.0	11.6		ug/L		116	70 - 130	4	20
1,1,1,2-Tetrachloroethane	10.0	9.91		ug/L		99	70 - 130	3	20
Ethylbenzene	10.0	12.0		ug/L		120	70 - 130	6	20
m-Xylene & p-Xylene	10.0	11.9		ug/L		119	70 - 130	3	20
o-Xylene	10.0	10.8		ug/L		108	70 - 130	4	20
Xylenes, Total	20.0	22.7		ug/L		114	70 - 130	4	20
Styrene	10.0	10.6		ug/L		106	70 - 130	3	20
Bromoform	10.0	9.27		ug/L		93	70 - 130	5	20
Isopropylbenzene	10.0	11.8		ug/L		118	70 - 130	5	20
1,1,2,2-Tetrachloroethane	10.0	11.7		ug/L		117	70 - 130	3	20
Bromobenzene	10.0	11.7		ug/L		117	70 - 130	6	20
1,2,3-Trichloropropane	10.0	10.5		ug/L		105	70 - 130	1	20
N-Propylbenzene	10.0	12.0		ug/L		120	70 - 130	5	20
2-Chlorotoluene	10.0	11.7		ug/L		117	70 - 130	3	20
1,3,5-Trimethylbenzene	10.0	12.1		ug/L		121	70 - 130	4	20
4-Chlorotoluene	10.0	12.2		ug/L		122	70 - 130	6	20
tert-Butylbenzene	10.0	12.0		ug/L		120	70 - 130	4	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-536185/4
Matrix: Water
Analysis Batch: 536185

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			10.0	12.1		ug/L		121	70 - 130	4	20
sec-Butylbenzene			10.0	12.0		ug/L		120	70 - 130	6	20
1,3-Dichlorobenzene			10.0	11.6		ug/L		116	70 - 130	5	20
4-Isopropyltoluene			10.0	11.2		ug/L		112	70 - 130	3	20
1,4-Dichlorobenzene			10.0	11.5		ug/L		115	70 - 130	4	20
n-Butylbenzene			10.0	12.0		ug/L		120	70 - 130	2	20
1,2-Dichlorobenzene			10.0	11.5		ug/L		115	70 - 130	2	20
1,2-Dibromo-3-Chloropropane			10.0	9.98		ug/L		100	70 - 130	5	20
1,2,4-Trichlorobenzene			10.0	10.3		ug/L		103	70 - 130	2	20
Hexachlorobutadiene			10.0	11.3		ug/L		113	70 - 130	4	20
Naphthalene			10.0	10.8		ug/L		108	70 - 130	2	20
1,2,3-Trichlorobenzene			10.0	10.6		ug/L		106	70 - 130	8	20
Methyl-t-Butyl Ether (MTBE)			10.0	9.53		ug/L		95	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-509370/1-A ^2
Matrix: Water
Analysis Batch: 510265

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 509370

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/12/21 14:56	05/17/21 16:11	2

Lab Sample ID: LCS 160-509370/2-A ^2
Matrix: Water
Analysis Batch: 510265

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 509370

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	198		ug/L		99	82 - 116		

Lab Sample ID: 580-102962-F-1-B MS ^2
Matrix: Water
Analysis Batch: 510265

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 509370

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	200		ug/L		100	82 - 116		

Lab Sample ID: 580-102962-F-1-C MSD ^2
Matrix: Water
Analysis Batch: 510265

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 509370

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	196		ug/L		98	82 - 116	2	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148322-1
SDG: 43008

GC/MS VOA

Analysis Batch: 536185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-148322-1	43008-001	Total/NA	Water	524.2	
280-148322-2	43008-002	Total/NA	Water	524.2	
MB 280-536185/5	Method Blank	Total/NA	Water	524.2	
LCS 280-536185/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 280-536185/4	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 509370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-148322-3	43008-003	Total/NA	Water	3010A	
MB 160-509370/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-509370/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
580-102962-F-1-B MS ^2	Matrix Spike	Total/NA	Water	3010A	
580-102962-F-1-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 510265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-148322-3	43008-003	Total/NA	Water	6020A	509370
MB 160-509370/1-A ^2	Method Blank	Total/NA	Water	6020A	509370
LCS 160-509370/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	509370
580-102962-F-1-B MS ^2	Matrix Spike	Total/NA	Water	6020A	509370
580-102962-F-1-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	6020A	509370

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148322-1
SDG: 43008

Client Sample ID: 43008-001
Date Collected: 05/04/21 15:10
Date Received: 05/06/21 09:45

Lab Sample ID: 280-148322-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	524.2		1	5 mL	5 mL	536185	05/14/21 14:04	GO	TAL DEN

Client Sample ID: 43008-002
Date Collected: 05/04/21 15:15
Date Received: 05/06/21 09:45

Lab Sample ID: 280-148322-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	524.2		1	5 mL	5 mL	536185	05/14/21 14:27	GO	TAL DEN

Client Sample ID: 43008-003
Date Collected: 05/04/21 15:15
Date Received: 05/06/21 09:45

Lab Sample ID: 280-148322-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	509370	05/12/21 14:56	IG	TAL SL
Total/NA	Analysis	6020A		2			510265	05/17/21 17:54	CJJ	TAL SL

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148322-1
SDG: 43008

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
A2LA	ISO/IEC 17025	2907.01	10-31-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21
California	State	2513	01-08-22
Connecticut	State	PH-0686	11-30-22
Florida	NELAP	E87667-57	07-01-21
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-21 *
Iowa	State	IA#370	12-02-21
Kansas	NELAP	E-10166	04-30-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-21
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	06-30-21
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-21
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

Laboratory: Eurofins TestAmerica, St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11616	04-01-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3010A	Water	Thallium

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

BROOKHAVEN
NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 43008

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Metz	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD USE Trip Blank from 43004

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	5/4/21	1510	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	1515	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	↓	↓	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
~~003~~	~~E~~	~~G~~	~~TB-1~~	~~0~~			~~W~~	~~Trip Blank~~	~~40 ML~~	~~SC~~	~~3~~	~~HCL~~					~~X~~					

280-148322 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. Metz 5/5/21	Print	Print
Signature [signature] 1100	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Adam Dubicki	Print	Print
Signature [signature] 5/6/2021	Signature	Signature

945

1.7 IK 11 CFT 0.4

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 280-567481.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 280-148322-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/19/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A_DOD5/3010A_2% (MOD) Chromium, Thallium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
43008-003 (280-148322-3)	5/4/21	15:15 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification
Level 1 radioactive

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	05/10/2021 1405	ETADEN	Fedox		
Fedox			Sima Walpen	5/11/21 0910	GPASOZ

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-148322-1
SDG Number: 43008

Login Number: 148322
List Number: 1
Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-148322-1
SDG Number: 43008

Login Number: 148322
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins TestAmerica, St. Louis
List Creation: 05/11/21 11:36 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-148784-1
Laboratory Sample Delivery Group: 43048
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Rhonda Ridenhower

Authorized for release by:
6/4/2021 5:24:26 PM
Rhonda Ridenhower, Client Service Manager
Rhonda.Ridenhower@Eurofinset.com

Designee for

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148784-1
SDG: 43048

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-148784-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 280-148784-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 05/19/2021; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.9 C.

DRINKING WATER VOLATILES (GC-MS)

Samples 43048-001 (280-148784-1), 43048-002 (280-148784-2) and 43048-003 (280-148784-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 05/22/2021 and 05/23/2021.

Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS

Sample 43048-002 (280-148784-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 05/25/2021 and analyzed on 06/03/2021.

Job ID: 280-148784-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148784-1
SDG: 43048

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148784-1
SDG: 43048

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-148784-1	43048-001	Water	05/17/21 15:05	05/19/21 09:50	
280-148784-2	43048-002	Water	05/17/21 15:07	05/19/21 09:50	
280-148784-3	43048-003	Water	05/17/21 13:00	05/19/21 09:50	

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Client Sample ID: 43048-001
Date Collected: 05/17/21 15:05
Date Received: 05/19/21 09:50

Lab Sample ID: 280-148784-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			05/23/21 03:04	1
Chloromethane	0.50	U	0.50	0.097	ug/L			05/23/21 03:04	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/23/21 03:04	1
Bromomethane	0.50	U	0.50	0.27	ug/L			05/23/21 03:04	1
Chloroethane	0.50	U	0.50	0.14	ug/L			05/23/21 03:04	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			05/23/21 03:04	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			05/23/21 03:04	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			05/23/21 03:04	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			05/23/21 03:04	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			05/23/21 03:04	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			05/23/21 03:04	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			05/23/21 03:04	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			05/23/21 03:04	1
Chloroform	0.50	U	0.50	0.11	ug/L			05/23/21 03:04	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			05/23/21 03:04	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			05/23/21 03:04	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			05/23/21 03:04	1
Benzene	0.50	U	0.50	0.077	ug/L			05/23/21 03:04	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			05/23/21 03:04	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			05/23/21 03:04	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			05/23/21 03:04	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			05/23/21 03:04	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			05/23/21 03:04	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			05/23/21 03:04	1
Toluene	0.50	U	0.50	0.041	ug/L			05/23/21 03:04	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			05/23/21 03:04	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			05/23/21 03:04	1
Tetrachloroethene	**3.7**		0.50	0.072	ug/L			05/23/21 03:04	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			05/23/21 03:04	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			05/23/21 03:04	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			05/23/21 03:04	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			05/23/21 03:04	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			05/23/21 03:04	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			05/23/21 03:04	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			05/23/21 03:04	1
o-Xylene	0.50	U	0.50	0.095	ug/L			05/23/21 03:04	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			05/23/21 03:04	1
Styrene	0.50	U	0.50	0.056	ug/L			05/23/21 03:04	1
Bromoform	0.50	U	0.50	0.092	ug/L			05/23/21 03:04	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			05/23/21 03:04	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			05/23/21 03:04	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			05/23/21 03:04	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			05/23/21 03:04	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			05/23/21 03:04	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			05/23/21 03:04	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			05/23/21 03:04	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			05/23/21 03:04	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			05/23/21 03:04	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			05/23/21 03:04	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 43048-001
Date Collected: 05/17/21 15:05
Date Received: 05/19/21 09:50

Lab Sample ID: 280-148784-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			05/23/21 03:04	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			05/23/21 03:04	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			05/23/21 03:04	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			05/23/21 03:04	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			05/23/21 03:04	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			05/23/21 03:04	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			05/23/21 03:04	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			05/23/21 03:04	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			05/23/21 03:04	1
Naphthalene	0.50	U	0.50	0.085	ug/L			05/23/21 03:04	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			05/23/21 03:04	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			05/23/21 03:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*		*05/23/21 03:04*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*05/23/21 03:04*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*05/23/21 03:04*	*1*

Client Sample ID: 43048-002
Date Collected: 05/17/21 15:07
Date Received: 05/19/21 09:50

Lab Sample ID: 280-148784-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			05/22/21 20:13	1
Chloromethane	0.50	U	0.50	0.097	ug/L			05/22/21 20:13	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/22/21 20:13	1
Bromomethane	0.50	U	0.50	0.27	ug/L			05/22/21 20:13	1
Chloroethane	0.50	U	0.50	0.14	ug/L			05/22/21 20:13	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			05/22/21 20:13	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			05/22/21 20:13	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			05/22/21 20:13	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			05/22/21 20:13	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			05/22/21 20:13	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			05/22/21 20:13	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			05/22/21 20:13	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			05/22/21 20:13	1
Chloroform	0.50	U	0.50	0.11	ug/L			05/22/21 20:13	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			05/22/21 20:13	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			05/22/21 20:13	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			05/22/21 20:13	1
Benzene	0.50	U	0.50	0.077	ug/L			05/22/21 20:13	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			05/22/21 20:13	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			05/22/21 20:13	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			05/22/21 20:13	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			05/22/21 20:13	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			05/22/21 20:13	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			05/22/21 20:13	1
Toluene	0.50	U	0.50	0.041	ug/L			05/22/21 20:13	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			05/22/21 20:13	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			05/22/21 20:13	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			05/22/21 20:13	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 43048-002
Date Collected: 05/17/21 15:07
Date Received: 05/19/21 09:50

Lab Sample ID: 280-148784-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			05/22/21 20:13	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			05/22/21 20:13	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			05/22/21 20:13	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			05/22/21 20:13	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			05/22/21 20:13	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			05/22/21 20:13	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			05/22/21 20:13	1
o-Xylene	0.50	U	0.50	0.095	ug/L			05/22/21 20:13	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			05/22/21 20:13	1
Styrene	0.50	U	0.50	0.056	ug/L			05/22/21 20:13	1
Bromoform	0.50	U	0.50	0.092	ug/L			05/22/21 20:13	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			05/22/21 20:13	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			05/22/21 20:13	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			05/22/21 20:13	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			05/22/21 20:13	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			05/22/21 20:13	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			05/22/21 20:13	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			05/22/21 20:13	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			05/22/21 20:13	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			05/22/21 20:13	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			05/22/21 20:13	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			05/22/21 20:13	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			05/22/21 20:13	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			05/22/21 20:13	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			05/22/21 20:13	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			05/22/21 20:13	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			05/22/21 20:13	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			05/22/21 20:13	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			05/22/21 20:13	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			05/22/21 20:13	1
Naphthalene	0.50	U	0.50	0.085	ug/L			05/22/21 20:13	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			05/22/21 20:13	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			05/22/21 20:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*05/22/21 20:13*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*05/22/21 20:13*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*05/22/21 20:13*	*1*

Client Sample ID: 43048-003
Date Collected: 05/17/21 13:00
Date Received: 05/19/21 09:50

Lab Sample ID: 280-148784-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			05/22/21 19:50	1
Chloromethane	0.50	U	0.50	0.097	ug/L			05/22/21 19:50	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/22/21 19:50	1
Bromomethane	0.50	U	0.50	0.27	ug/L			05/22/21 19:50	1
Chloroethane	0.50	U	0.50	0.14	ug/L			05/22/21 19:50	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			05/22/21 19:50	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			05/22/21 19:50	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 43048-003
Date Collected: 05/17/21 13:00
Date Received: 05/19/21 09:50

Lab Sample ID: 280-148784-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	0.50	U	0.50	0.098	ug/L			05/22/21 19:50	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			05/22/21 19:50	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			05/22/21 19:50	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			05/22/21 19:50	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			05/22/21 19:50	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			05/22/21 19:50	1
Chloroform	0.50	U	0.50	0.11	ug/L			05/22/21 19:50	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			05/22/21 19:50	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			05/22/21 19:50	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			05/22/21 19:50	1
Benzene	0.50	U	0.50	0.077	ug/L			05/22/21 19:50	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			05/22/21 19:50	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			05/22/21 19:50	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			05/22/21 19:50	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			05/22/21 19:50	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			05/22/21 19:50	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			05/22/21 19:50	1
Toluene	0.50	U	0.50	0.041	ug/L			05/22/21 19:50	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			05/22/21 19:50	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			05/22/21 19:50	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			05/22/21 19:50	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			05/22/21 19:50	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			05/22/21 19:50	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			05/22/21 19:50	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			05/22/21 19:50	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			05/22/21 19:50	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			05/22/21 19:50	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			05/22/21 19:50	1
o-Xylene	0.50	U	0.50	0.095	ug/L			05/22/21 19:50	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			05/22/21 19:50	1
Styrene	0.50	U	0.50	0.056	ug/L			05/22/21 19:50	1
Bromoform	0.50	U	0.50	0.092	ug/L			05/22/21 19:50	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			05/22/21 19:50	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			05/22/21 19:50	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			05/22/21 19:50	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			05/22/21 19:50	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			05/22/21 19:50	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			05/22/21 19:50	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			05/22/21 19:50	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			05/22/21 19:50	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			05/22/21 19:50	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			05/22/21 19:50	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			05/22/21 19:50	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			05/22/21 19:50	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			05/22/21 19:50	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			05/22/21 19:50	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			05/22/21 19:50	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			05/22/21 19:50	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			05/22/21 19:50	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 43048-003
Date Collected: 05/17/21 13:00
Date Received: 05/19/21 09:50

Lab Sample ID: 280-148784-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			05/22/21 19:50	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			05/22/21 19:50	1
Naphthalene	0.50	U	0.50	0.085	ug/L			05/22/21 19:50	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			05/22/21 19:50	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			05/22/21 19:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*		*05/22/21 19:50*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*05/22/21 19:50*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*05/22/21 19:50*	*1*

Method: 6020A - Metals (ICP/MS)

Client Sample ID: 43048-002
Date Collected: 05/17/21 15:07
Date Received: 05/19/21 09:50

Lab Sample ID: 280-148784-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/25/21 16:25	06/03/21 17:53	2

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148784-1
SDG: 43048

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-148689-C-10 MS	Matrix Spike	98	100	96
280-148689-C-10 MSD	Matrix Spike Duplicate	94	97	101
280-148784-1	43048-001	108	99	101
280-148784-2	43048-002	103	101	97
280-148784-3	43048-003	107	99	101
LCS 280-537138/1002	Lab Control Sample	97	102	98
LCSD 280-537138/4	Lab Control Sample Dup	98	99	99
MB 280-537138/6	Method Blank	104	103	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-537138/6
Matrix: Water
Analysis Batch: 537138

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			05/22/21 19:28	1
Chloromethane	0.50	U	0.50	0.097	ug/L			05/22/21 19:28	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			05/22/21 19:28	1
Bromomethane	0.50	U	0.50	0.27	ug/L			05/22/21 19:28	1
Chloroethane	0.50	U	0.50	0.14	ug/L			05/22/21 19:28	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			05/22/21 19:28	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			05/22/21 19:28	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			05/22/21 19:28	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			05/22/21 19:28	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			05/22/21 19:28	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			05/22/21 19:28	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			05/22/21 19:28	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			05/22/21 19:28	1
Chloroform	0.50	U	0.50	0.11	ug/L			05/22/21 19:28	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			05/22/21 19:28	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			05/22/21 19:28	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			05/22/21 19:28	1
Benzene	0.50	U	0.50	0.077	ug/L			05/22/21 19:28	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			05/22/21 19:28	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			05/22/21 19:28	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			05/22/21 19:28	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			05/22/21 19:28	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			05/22/21 19:28	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			05/22/21 19:28	1
Toluene	0.50	U	0.50	0.041	ug/L			05/22/21 19:28	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			05/22/21 19:28	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			05/22/21 19:28	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			05/22/21 19:28	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			05/22/21 19:28	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			05/22/21 19:28	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			05/22/21 19:28	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			05/22/21 19:28	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			05/22/21 19:28	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			05/22/21 19:28	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			05/22/21 19:28	1
o-Xylene	0.50	U	0.50	0.095	ug/L			05/22/21 19:28	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			05/22/21 19:28	1
Styrene	0.50	U	0.50	0.056	ug/L			05/22/21 19:28	1
Bromoform	0.50	U	0.50	0.092	ug/L			05/22/21 19:28	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			05/22/21 19:28	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			05/22/21 19:28	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			05/22/21 19:28	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			05/22/21 19:28	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			05/22/21 19:28	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			05/22/21 19:28	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			05/22/21 19:28	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			05/22/21 19:28	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			05/22/21 19:28	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-537138/6
Matrix: Water
Analysis Batch: 537138

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			05/22/21 19:28	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			05/22/21 19:28	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			05/22/21 19:28	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			05/22/21 19:28	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			05/22/21 19:28	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			05/22/21 19:28	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			05/22/21 19:28	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			05/22/21 19:28	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			05/22/21 19:28	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			05/22/21 19:28	1
Naphthalene	0.50	U	0.50	0.085	ug/L			05/22/21 19:28	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			05/22/21 19:28	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			05/22/21 19:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*		*05/22/21 19:28*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*		*05/22/21 19:28*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*05/22/21 19:28*	*1*

Lab Sample ID: LCS 280-537138/1002
Matrix: Water
Analysis Batch: 537138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	20.0	22.9		ug/L		114	70 - 130
Chloromethane	20.0	20.9		ug/L		104	70 - 130
Vinyl chloride	20.0	20.0		ug/L		100	70 - 130
Bromomethane	20.0	17.9		ug/L		90	70 - 130
Chloroethane	20.0	19.9		ug/L		100	70 - 130
Trichlorofluoromethane	20.0	19.1		ug/L		95	70 - 130
1,1-Dichloroethene	20.0	17.5		ug/L		87	70 - 130
Methylene Chloride	20.0	18.2		ug/L		91	70 - 130
trans-1,2-Dichloroethene	20.0	18.0		ug/L		90	70 - 130
1,1-Dichloroethane	20.0	18.9		ug/L		94	70 - 130
cis-1,2-Dichloroethene	20.0	18.6		ug/L		93	70 - 130
2,2-Dichloropropane	20.0	19.1		ug/L		96	70 - 130
Bromochloromethane	20.0	20.7		ug/L		104	70 - 130
Chloroform	20.0	18.7		ug/L		94	70 - 130
1,1,1-Trichloroethane	20.0	18.7		ug/L		94	70 - 130
1,1-Dichloropropene	20.0	18.9		ug/L		95	70 - 130
Carbon tetrachloride	20.0	20.2		ug/L		101	70 - 130
Benzene	20.0	18.9		ug/L		94	70 - 130
1,2-Dichloroethane	20.0	20.0		ug/L		100	70 - 130
Trichloroethene	20.0	18.8		ug/L		94	70 - 130
1,2-Dichloropropane	20.0	19.7		ug/L		98	70 - 130
Dibromomethane	20.0	19.6		ug/L		98	70 - 130
Bromodichloromethane	20.0	19.8		ug/L		99	70 - 130
cis-1,3-Dichloropropene	20.0	20.8		ug/L		104	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-537138/1002
Matrix: Water
Analysis Batch: 537138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	20.0	18.7		ug/L		94	70 - 130
trans-1,3-Dichloropropene	20.0	20.7		ug/L		104	70 - 130
1,1,2-Trichloroethane	20.0	20.6		ug/L		103	70 - 130
Tetrachloroethene	20.0	19.4		ug/L		97	70 - 130
1,3-Dichloropropane	20.0	21.1		ug/L		105	70 - 130
Dibromochloromethane	20.0	21.9		ug/L		110	70 - 130
1,2-Dibromoethane	20.0	21.8		ug/L		109	70 - 130
Chlorobenzene	20.0	19.6		ug/L		98	70 - 130
1,1,1,2-Tetrachloroethane	20.0	21.5		ug/L		108	70 - 130
Ethylbenzene	20.0	19.8		ug/L		99	70 - 130
m-Xylene & p-Xylene	20.0	19.5		ug/L		97	70 - 130
o-Xylene	20.0	20.3		ug/L		102	70 - 130
Xylenes, Total	40.0	39.8		ug/L		100	70 - 130
Styrene	20.0	21.4		ug/L		107	70 - 130
Bromoform	20.0	23.2		ug/L		116	70 - 130
Isopropylbenzene	20.0	18.3		ug/L		92	70 - 130
1,1,2,2-Tetrachloroethane	20.0	19.9		ug/L		99	70 - 130
Bromobenzene	20.0	18.9		ug/L		95	70 - 130
1,2,3-Trichloropropane	20.0	21.2		ug/L		106	70 - 130
N-Propylbenzene	20.0	18.5		ug/L		93	70 - 130
2-Chlorotoluene	20.0	18.2		ug/L		91	70 - 130
1,3,5-Trimethylbenzene	20.0	19.1		ug/L		95	70 - 130
4-Chlorotoluene	20.0	19.0		ug/L		95	70 - 130
tert-Butylbenzene	20.0	18.4		ug/L		92	70 - 130
1,2,4-Trimethylbenzene	20.0	19.4		ug/L		97	70 - 130
sec-Butylbenzene	20.0	19.5		ug/L		97	70 - 130
1,3-Dichlorobenzene	20.0	18.6		ug/L		93	70 - 130
4-Isopropyltoluene	20.0	19.2		ug/L		96	70 - 130
1,4-Dichlorobenzene	20.0	18.1		ug/L		91	70 - 130
n-Butylbenzene	20.0	19.0		ug/L		95	70 - 130
1,2-Dichlorobenzene	20.0	19.4		ug/L		97	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	19.6		ug/L		98	70 - 130
1,2,4-Trichlorobenzene	20.0	17.4		ug/L		87	70 - 130
Hexachlorobutadiene	20.0	21.1		ug/L		106	70 - 130
Naphthalene	20.0	19.4		ug/L		97	70 - 130
1,2,3-Trichlorobenzene	20.0	19.0		ug/L		95	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	20.7		ug/L		104	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-537138/4
Matrix: Water
Analysis Batch: 537138

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane	20.0	22.4		ug/L		112	70 - 130	2	20
Chloromethane	20.0	20.5		ug/L		103	70 - 130	2	20
Vinyl chloride	20.0	19.5		ug/L		97	70 - 130	3	20
Bromomethane	20.0	18.0		ug/L		90	70 - 130	1	20
Chloroethane	20.0	19.7		ug/L		99	70 - 130	1	20
Trichlorofluoromethane	20.0	18.5		ug/L		93	70 - 130	3	20
1,1-Dichloroethene	20.0	19.0		ug/L		95	70 - 130	8	20
Methylene Chloride	20.0	18.5		ug/L		92	70 - 130	1	20
trans-1,2-Dichloroethene	20.0	19.3		ug/L		96	70 - 130	7	20
1,1-Dichloroethane	20.0	19.7		ug/L		98	70 - 130	4	20
cis-1,2-Dichloroethene	20.0	19.1		ug/L		95	70 - 130	2	20
2,2-Dichloropropane	20.0	20.6		ug/L		103	70 - 130	7	20
Bromochloromethane	20.0	20.3		ug/L		101	70 - 130	2	20
Chloroform	20.0	19.5		ug/L		98	70 - 130	4	20
1,1,1-Trichloroethane	20.0	20.2		ug/L		101	70 - 130	7	20
1,1-Dichloropropene	20.0	20.7		ug/L		103	70 - 130	9	20
Carbon tetrachloride	20.0	21.8		ug/L		109	70 - 130	8	20
Benzene	20.0	19.9		ug/L		99	70 - 130	5	20
1,2-Dichloroethane	20.0	20.1		ug/L		101	70 - 130	0	20
Trichloroethene	20.0	19.6		ug/L		98	70 - 130	4	20
1,2-Dichloropropane	20.0	20.3		ug/L		102	70 - 130	3	20
Dibromomethane	20.0	19.2		ug/L		96	70 - 130	2	20
Bromodichloromethane	20.0	20.0		ug/L		100	70 - 130	1	20
cis-1,3-Dichloropropene	20.0	20.8		ug/L		104	70 - 130	0	20
Toluene	20.0	19.7		ug/L		98	70 - 130	5	20
trans-1,3-Dichloropropene	20.0	20.7		ug/L		103	70 - 130	0	20
1,1,2-Trichloroethane	20.0	20.4		ug/L		102	70 - 130	1	20
Tetrachloroethene	20.0	20.3		ug/L		101	70 - 130	5	20
1,3-Dichloropropane	20.0	20.6		ug/L		103	70 - 130	2	20
Dibromochloromethane	20.0	21.2		ug/L		106	70 - 130	3	20
1,2-Dibromoethane	20.0	21.0		ug/L		105	70 - 130	4	20
Chlorobenzene	20.0	19.9		ug/L		100	70 - 130	1	20
1,1,1,2-Tetrachloroethane	20.0	21.7		ug/L		108	70 - 130	1	20
Ethylbenzene	20.0	21.0		ug/L		105	70 - 130	6	20
m-Xylene & p-Xylene	20.0	20.6		ug/L		103	70 - 130	5	20
o-Xylene	20.0	21.2		ug/L		106	70 - 130	4	20
Xylenes, Total	40.0	41.8		ug/L		105	70 - 130	5	20
Styrene	20.0	21.9		ug/L		110	70 - 130	3	20
Bromoform	20.0	22.9		ug/L		115	70 - 130	1	20
Isopropylbenzene	20.0	20.5		ug/L		103	70 - 130	11	20
1,1,2,2-Tetrachloroethane	20.0	20.2		ug/L		101	70 - 130	1	20
Bromobenzene	20.0	20.4		ug/L		102	70 - 130	8	20
1,2,3-Trichloropropane	20.0	21.2		ug/L		106	70 - 130	0	20
N-Propylbenzene	20.0	20.7		ug/L		104	70 - 130	11	20
2-Chlorotoluene	20.0	20.2		ug/L		101	70 - 130	10	20
1,3,5-Trimethylbenzene	20.0	21.0		ug/L		105	70 - 130	10	20
4-Chlorotoluene	20.0	20.7		ug/L		104	70 - 130	9	20
tert-Butylbenzene	20.0	20.5		ug/L		102	70 - 130	11	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-537138/4
Matrix: Water
Analysis Batch: 537138

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	21.0		ug/L		105	70 - 130	8	20
sec-Butylbenzene			20.0	21.7		ug/L		109	70 - 130	11	20
1,3-Dichlorobenzene			20.0	20.1		ug/L		100	70 - 130	7	20
4-Isopropyltoluene			20.0	21.3		ug/L		107	70 - 130	10	20
1,4-Dichlorobenzene			20.0	19.4		ug/L		97	70 - 130	7	20
n-Butylbenzene			20.0	20.9		ug/L		105	70 - 130	10	20
1,2-Dichlorobenzene			20.0	20.4		ug/L		102	70 - 130	5	20
1,2-Dibromo-3-Chloropropane			20.0	19.4		ug/L		97	70 - 130	1	20
1,2,4-Trichlorobenzene			20.0	18.6		ug/L		93	70 - 130	6	20
Hexachlorobutadiene			20.0	23.1		ug/L		116	70 - 130	9	20
Naphthalene			20.0	19.8		ug/L		99	70 - 130	2	20
1,2,3-Trichlorobenzene			20.0	19.8		ug/L		99	70 - 130	4	20
Methyl-t-Butyl Ether (MTBE)			20.0	21.0		ug/L		105	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 280-148689-C-10 MS
Matrix: Water
Analysis Batch: 537138

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	0.50	U	20.0	21.7		ug/L		108	70 - 130
Chloromethane	0.50	U	20.0	20.9		ug/L		105	70 - 130
Vinyl chloride	0.50	U	20.0	19.7		ug/L		99	70 - 130
Bromomethane	0.50	U	20.0	17.5		ug/L		88	70 - 130
Chloroethane	0.50	U	20.0	21.0		ug/L		105	70 - 130
Trichlorofluoromethane	0.50	U	20.0	18.3		ug/L		92	70 - 130
1,1-Dichloroethene	0.58		20.0	20.6		ug/L		100	70 - 130
Methylene Chloride	0.50	U	20.0	18.9		ug/L		94	70 - 130
trans-1,2-Dichloroethene	0.50	U	20.0	19.8		ug/L		99	70 - 130
1,1-Dichloroethane	0.50	U	20.0	20.7		ug/L		104	70 - 130
cis-1,2-Dichloroethene	0.50	U	20.0	20.6		ug/L		103	70 - 130
2,2-Dichloropropane	0.50	U	20.0	16.8		ug/L		84	70 - 130
Bromochloromethane	0.50	U	20.0	21.3		ug/L		106	70 - 130
Chloroform	0.50	U	20.0	20.9		ug/L		104	70 - 130
1,1,1-Trichloroethane	0.73		20.0	21.3		ug/L		103	70 - 130
1,1-Dichloropropene	0.50	U	20.0	21.3		ug/L		106	70 - 130
Carbon tetrachloride	2.2		20.0	24.6		ug/L		112	70 - 130
Benzene	0.50	U	20.0	21.2		ug/L		106	70 - 130
1,2-Dichloroethane	0.50	U	20.0	21.2		ug/L		106	70 - 130
Trichloroethene	0.65		20.0	20.9		ug/L		101	70 - 130
1,2-Dichloropropane	0.50	U	20.0	21.3		ug/L		106	70 - 130
Dibromomethane	0.50	U	20.0	20.7		ug/L		104	70 - 130
Bromodichloromethane	0.50	U	20.0	21.4		ug/L		107	70 - 130
cis-1,3-Dichloropropene	0.50	U	20.0	20.3		ug/L		101	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-148689-C-10 MS
Matrix: Water
Analysis Batch: 537138

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	0.50	U	20.0	20.9		ug/L		104	70 - 130
trans-1,3-Dichloropropene	0.50	U	20.0	20.5		ug/L		103	70 - 130
1,1,2-Trichloroethane	0.50	U	20.0	21.7		ug/L		108	70 - 130
Tetrachloroethene	14		20.0	34.0		ug/L		99	70 - 130
1,3-Dichloropropane	0.50	U	20.0	21.4		ug/L		107	70 - 130
Dibromochloromethane	0.50	U	20.0	22.1		ug/L		111	70 - 130
1,2-Dibromoethane	0.50	U	20.0	21.6		ug/L		108	70 - 130
Chlorobenzene	0.50	U	20.0	20.9		ug/L		105	70 - 130
1,1,1,2-Tetrachloroethane	0.50	U	20.0	23.0		ug/L		115	70 - 130
Ethylbenzene	0.50	U	20.0	22.0		ug/L		110	70 - 130
m-Xylene & p-Xylene	1.0	U	20.0	21.4		ug/L		107	70 - 130
o-Xylene	0.50	U	20.0	22.3		ug/L		111	70 - 130
Xylenes, Total	1.5	U	40.0	43.7		ug/L		109	70 - 130
Styrene	0.50	U	20.0	23.2		ug/L		116	70 - 130
Bromoform	0.50	U	20.0	23.4		ug/L		117	70 - 130
Isopropylbenzene	0.50	U	20.0	20.2		ug/L		101	70 - 130
1,1,2,2-Tetrachloroethane	0.50	U	20.0	19.8		ug/L		99	70 - 130
Bromobenzene	0.50	U	20.0	20.6		ug/L		103	70 - 130
1,2,3-Trichloropropane	0.50	U	20.0	21.6		ug/L		108	70 - 130
N-Propylbenzene	0.50	U	20.0	20.6		ug/L		103	70 - 130
2-Chlorotoluene	0.50	U	20.0	20.3		ug/L		101	70 - 130
1,3,5-Trimethylbenzene	0.50	U	20.0	21.0		ug/L		105	70 - 130
4-Chlorotoluene	0.50	U	20.0	21.1		ug/L		105	70 - 130
tert-Butylbenzene	0.50	U	20.0	20.6		ug/L		103	70 - 130
1,2,4-Trimethylbenzene	0.50	U	20.0	21.3		ug/L		106	70 - 130
sec-Butylbenzene	0.50	U	20.0	21.5		ug/L		108	70 - 130
1,3-Dichlorobenzene	0.50	U	20.0	20.0		ug/L		100	70 - 130
4-Isopropyltoluene	0.50	U	20.0	21.2		ug/L		106	70 - 130
1,4-Dichlorobenzene	0.50	U	20.0	19.9		ug/L		100	70 - 130
n-Butylbenzene	0.50	U	20.0	20.6		ug/L		103	70 - 130
1,2-Dichlorobenzene	0.50	U	20.0	20.3		ug/L		101	70 - 130
1,2-Dibromo-3-Chloropropane	0.50	U	20.0	19.5		ug/L		97	70 - 130
1,2,4-Trichlorobenzene	0.50	U	20.0	18.3		ug/L		91	70 - 130
Hexachlorobutadiene	0.50	U	20.0	21.3		ug/L		106	70 - 130
Naphthalene	0.50	U	20.0	19.6		ug/L		98	70 - 130
1,2,3-Trichlorobenzene	0.50	U	20.0	21.1		ug/L		105	70 - 130
Methyl-t-Butyl Ether (MTBE)	0.50	U	20.0	20.4		ug/L		102	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-148689-C-10 MSD
Matrix: Water
Analysis Batch: 537138

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane	0.50	U	20.0	21.7		ug/L		109	70 - 130	0	20
Chloromethane	0.50	U	20.0	21.1		ug/L		106	70 - 130	1	20
Vinyl chloride	0.50	U	20.0	20.1		ug/L		100	70 - 130	2	20
Bromomethane	0.50	U	20.0	17.0		ug/L		85	70 - 130	3	20
Chloroethane	0.50	U	20.0	20.1		ug/L		100	70 - 130	5	20
Trichlorofluoromethane	0.50	U	20.0	18.2		ug/L		91	70 - 130	1	20
1,1-Dichloroethene	0.58		20.0	20.9		ug/L		102	70 - 130	2	20
Methylene Chloride	0.50	U	20.0	19.9		ug/L		99	70 - 130	5	20
trans-1,2-Dichloroethene	0.50	U	20.0	20.3		ug/L		102	70 - 130	3	20
1,1-Dichloroethane	0.50	U	20.0	21.4		ug/L		107	70 - 130	3	20
cis-1,2-Dichloroethene	0.50	U	20.0	20.3		ug/L		101	70 - 130	2	20
2,2-Dichloropropane	0.50	U	20.0	17.5		ug/L		87	70 - 130	4	20
Bromochloromethane	0.50	U	20.0	21.7		ug/L		108	70 - 130	2	20
Chloroform	0.50	U	20.0	21.1		ug/L		106	70 - 130	1	20
1,1,1-Trichloroethane	0.73		20.0	21.7		ug/L		105	70 - 130	2	20
1,1-Dichloropropene	0.50	U	20.0	21.4		ug/L		107	70 - 130	0	20
Carbon tetrachloride	2.2		20.0	25.0		ug/L		114	70 - 130	2	20
Benzene	0.50	U	20.0	21.4		ug/L		107	70 - 130	1	20
1,2-Dichloroethane	0.50	U	20.0	21.4		ug/L		107	70 - 130	1	20
Trichloroethene	0.65		20.0	21.4		ug/L		104	70 - 130	2	20
1,2-Dichloropropane	0.50	U	20.0	21.4		ug/L		107	70 - 130	1	20
Dibromomethane	0.50	U	20.0	20.9		ug/L		104	70 - 130	1	20
Bromodichloromethane	0.50	U	20.0	21.4		ug/L		107	70 - 130	0	20
cis-1,3-Dichloropropene	0.50	U	20.0	20.4		ug/L		102	70 - 130	0	20
Toluene	0.50	U	20.0	21.0		ug/L		105	70 - 130	1	20
trans-1,3-Dichloropropene	0.50	U	20.0	20.9		ug/L		104	70 - 130	2	20
1,1,2-Trichloroethane	0.50	U	20.0	21.6		ug/L		108	70 - 130	1	20
Tetrachloroethene	14		20.0	32.9		ug/L		94	70 - 130	3	20
1,3-Dichloropropane	0.50	U	20.0	21.1		ug/L		105	70 - 130	1	20
Dibromochloromethane	0.50	U	20.0	22.4		ug/L		112	70 - 130	1	20
1,2-Dibromoethane	0.50	U	20.0	21.8		ug/L		109	70 - 130	1	20
Chlorobenzene	0.50	U	20.0	20.7		ug/L		103	70 - 130	1	20
1,1,1,2-Tetrachloroethane	0.50	U	20.0	22.9		ug/L		115	70 - 130	0	20
Ethylbenzene	0.50	U	20.0	21.3		ug/L		106	70 - 130	3	20
m-Xylene & p-Xylene	1.0	U	20.0	21.3		ug/L		106	70 - 130	0	20
o-Xylene	0.50	U	20.0	21.8		ug/L		109	70 - 130	2	20
Xylenes, Total	1.5	U	40.0	43.1		ug/L		108	70 - 130	1	20
Styrene	0.50	U	20.0	22.8		ug/L		114	70 - 130	1	20
Bromoform	0.50	U	20.0	23.6		ug/L		118	70 - 130	1	20
Isopropylbenzene	0.50	U	20.0	21.2		ug/L		106	70 - 130	5	20
1,1,2,2-Tetrachloroethane	0.50	U	20.0	21.1		ug/L		106	70 - 130	7	20
Bromobenzene	0.50	U	20.0	21.3		ug/L		107	70 - 130	4	20
1,2,3-Trichloropropane	0.50	U	20.0	22.7		ug/L		113	70 - 130	5	20
N-Propylbenzene	0.50	U	20.0	21.4		ug/L		107	70 - 130	4	20
2-Chlorotoluene	0.50	U	20.0	20.9		ug/L		104	70 - 130	3	20
1,3,5-Trimethylbenzene	0.50	U	20.0	21.9		ug/L		110	70 - 130	4	20
4-Chlorotoluene	0.50	U	20.0	21.3		ug/L		106	70 - 130	1	20
tert-Butylbenzene	0.50	U	20.0	21.4		ug/L		107	70 - 130	4	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-148689-C-10 MSD
Matrix: Water
Analysis Batch: 537138

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene	0.50	U	20.0	21.8		ug/L		109	70 - 130	2	20
sec-Butylbenzene	0.50	U	20.0	21.8		ug/L		109	70 - 130	1	20
1,3-Dichlorobenzene	0.50	U	20.0	20.7		ug/L		103	70 - 130	3	20
4-Isopropyltoluene	0.50	U	20.0	21.8		ug/L		109	70 - 130	3	20
1,4-Dichlorobenzene	0.50	U	20.0	20.3		ug/L		102	70 - 130	2	20
n-Butylbenzene	0.50	U	20.0	20.6		ug/L		103	70 - 130	0	20
1,2-Dichlorobenzene	0.50	U	20.0	21.3		ug/L		106	70 - 130	5	20
1,2-Dibromo-3-Chloropropane	0.50	U	20.0	21.0		ug/L		105	70 - 130	8	20
1,2,4-Trichlorobenzene	0.50	U	20.0	18.5		ug/L		93	70 - 130	1	20
Hexachlorobutadiene	0.50	U	20.0	22.2		ug/L		111	70 - 130	4	20
Naphthalene	0.50	U	20.0	21.0		ug/L		105	70 - 130	7	20
1,2,3-Trichlorobenzene	0.50	U	20.0	21.3		ug/L		107	70 - 130	1	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	20.0	21.9		ug/L		109	70 - 130	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-511604/1-A ^2
Matrix: Water
Analysis Batch: 512674

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 511604

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		05/25/21 16:25	06/03/21 17:23	2

Lab Sample ID: LCS 160-511604/2-A ^2
Matrix: Water
Analysis Batch: 512674

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 511604

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	196		ug/L		98	82 - 116		

Lab Sample ID: 580-103210-D-1-B MS ^2
Matrix: Water
Analysis Batch: 512674

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 511604

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	1.4	B	200	206		ug/L		102	82 - 116		

Lab Sample ID: 580-103210-D-1-C MSD ^2
Matrix: Water
Analysis Batch: 512674

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 511604

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	1.4	B	200	204		ug/L		101	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148784-1
SDG: 43048

GC/MS VOA

Analysis Batch: 537138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-148784-1	43048-001	Total/NA	Water	524.2	
280-148784-2	43048-002	Total/NA	Water	524.2	
280-148784-3	43048-003	Total/NA	Water	524.2	
MB 280-537138/6	Method Blank	Total/NA	Water	524.2	
LCS 280-537138/1002	Lab Control Sample	Total/NA	Water	524.2	
LCSD 280-537138/4	Lab Control Sample Dup	Total/NA	Water	524.2	
280-148689-C-10 MS	Matrix Spike	Total/NA	Water	524.2	
280-148689-C-10 MSD	Matrix Spike Duplicate	Total/NA	Water	524.2	

Metals

Prep Batch: 511604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-148784-2	43048-002	Total/NA	Water	3010A	
MB 160-511604/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-511604/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
580-103210-D-1-B MS ^2	Matrix Spike	Total/NA	Water	3010A	
580-103210-D-1-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 512674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-148784-2	43048-002	Total/NA	Water	6020A	511604
MB 160-511604/1-A ^2	Method Blank	Total/NA	Water	6020A	511604
LCS 160-511604/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	511604
580-103210-D-1-B MS ^2	Matrix Spike	Total/NA	Water	6020A	511604
580-103210-D-1-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	6020A	511604

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148784-1
SDG: 43048

Client Sample ID: 43048-001
Date Collected: 05/17/21 15:05
Date Received: 05/19/21 09:50

Lab Sample ID: 280-148784-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	524.2		1	5 mL	5 mL	537138	05/23/21 03:04	GO	TAL DEN

Client Sample ID: 43048-002
Date Collected: 05/17/21 15:07
Date Received: 05/19/21 09:50

Lab Sample ID: 280-148784-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	524.2		1	5 mL	5 mL	537138	05/22/21 20:13	GO	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	511604	05/25/21 16:25	IG	TAL SL
Total/NA	Analysis	6020A		2			512674	06/03/21 17:53	CJJ	TAL SL

Client Sample ID: 43048-003
Date Collected: 05/17/21 13:00
Date Received: 05/19/21 09:50

Lab Sample ID: 280-148784-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	524.2		1	5 mL	5 mL	537138	05/22/21 19:50	GO	TAL DEN

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-148784-1
SDG: 43048

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
A2LA	ISO/IEC 17025	2907.01	10-31-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21
California	State	2513	01-08-22
Connecticut	State	PH-0686	11-30-22
Florida	NELAP	E87667-57	07-01-21
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-21 *
Iowa	State	IA#370	12-02-21
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-21
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	06-30-21
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-21
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

Laboratory: Eurofins TestAmerica, St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11616	04-01-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3010A	Water	Thallium

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 43048

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Meth	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD Use Trip Blank For COC 43047

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	5/17/21	1505	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1507	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		↓	W	RTW-1 Effluent	250 ML	P	1	Hno3										X
003	E	G	TB-1	0		1300	W	Trip Blank	40 ML	SC	3	HCL					X					

280-148784 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. Meth 5/18/21	Print	Print
Signature 1400	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Adam Labick, 5/19/21	Print	Print
Signature 0950	Signature	Signature

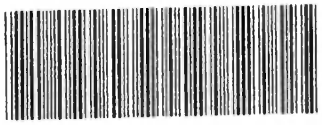
Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13) 0.5R11+0.4

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)



280-148784 Waybill

Do Not Lift using This Tag

650 4 10:30 E 3517 0519

ORIGIN ID:ISPA (631) 344-2311
BNL SHIPPING DEPT
BROOKHAVEN NATIONAL LAB
BLDG98, ROCHESTER STREET

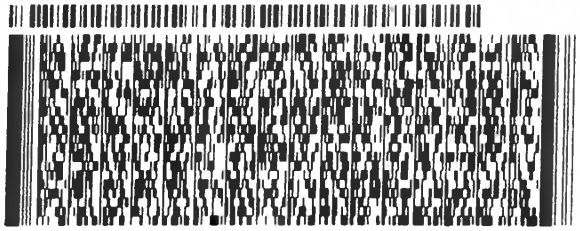
UPTON, NY 11973
UNITED STATES US

SHIP DATE: 17MAY21
ACTWGT: 41.00 LB MAN
CAD: 0221332/CAFE3409

BILL RECIPIENT

TO **RECEIVING DEPT.**
EUROFINS TEST AMERICA,DENVER
4955 YARROW STREET

ARVADA CO 800024517
(303) 736-0100
REF: 0000067737



FedEx Express

J2011201218011uv

WED - 19 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **9507 8885 3517**

NL LAAA

80002
CO-US **DEN**

Part # 156148-434 RIT EXP 07/21

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 280-569506.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 280-148784-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/1/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A_DOD5/3010A_2% (MOD) Chromium, Thallium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
43048-002 (280-148784-2)	5/17/21	15:07 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Level 1 radioactive	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	5/21/21 1330		FED EX		
2	FED EX			[signature]	5/22/21 0827	ETA STL
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-148784-1
SDG Number: 43048

Login Number: 148784
List Number: 1
Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-148784-1
SDG Number: 43048

Login Number: 148784
List Number: 2
Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis
List Creation: 05/22/21 10:00 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-149455-1
Laboratory Sample Delivery Group: 43086
Client Project/Site: BNL - OU3 B96
Revision: 1

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
7/20/2021 3:39:40 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-149455-1
SDG: 43086

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-149455-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 280-149455-1 - Revision 1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client. This revision corrects the results due to a verified mislabeling at the time of login.

RECEIPT

The samples were received on 6/4/2021 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.8º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 43086-001 (280-149455-1) and 43086-002 (280-149455-2) were analyzed for drinking water volatiles (GC-MS) in accordance

Job ID: 280-149455-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

with EPA Method 524.2. The samples were analyzed on 06/11/2021.

Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.

Analytical Batch 280-539149:
Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD was analyzed to demonstrate batch precision.

Methylene Chloride was detected in method blank MB 280-539419/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 43086-002 (280-149455-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 06/10/2021 and analyzed on 06/15/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-149455-1
SDG: 43086

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-149455-1
SDG: 43086

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-149455-1	43086-001	Water	06/03/21 11:05	06/04/21 10:10	
280-149455-2	43086-002	Water	06/03/21 11:07	06/04/21 10:10	

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Client Sample ID: 43086-001
Date Collected: 06/03/21 11:05
Date Received: 06/04/21 10:10

Lab Sample ID: 280-149455-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			06/11/21 01:28	1
Chloromethane	0.50	U	0.50	0.097	ug/L			06/11/21 01:28	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			06/11/21 01:28	1
Bromomethane	0.50	U	0.50	0.27	ug/L			06/11/21 01:28	1
Chloroethane	0.50	U	0.50	0.14	ug/L			06/11/21 01:28	1
Trichlorofluoromethane	**0.18**	**J**	0.50	0.057	ug/L			06/11/21 01:28	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			06/11/21 01:28	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			06/11/21 01:28	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			06/11/21 01:28	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			06/11/21 01:28	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			06/11/21 01:28	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			06/11/21 01:28	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			06/11/21 01:28	1
Chloroform	**0.53**		0.50	0.11	ug/L			06/11/21 01:28	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			06/11/21 01:28	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			06/11/21 01:28	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			06/11/21 01:28	1
Benzene	0.50	U	0.50	0.077	ug/L			06/11/21 01:28	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			06/11/21 01:28	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			06/11/21 01:28	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			06/11/21 01:28	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			06/11/21 01:28	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			06/11/21 01:28	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			06/11/21 01:28	1
Toluene	0.50	U	0.50	0.041	ug/L			06/11/21 01:28	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			06/11/21 01:28	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			06/11/21 01:28	1
Tetrachloroethene	**3.6**		0.50	0.072	ug/L			06/11/21 01:28	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			06/11/21 01:28	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			06/11/21 01:28	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			06/11/21 01:28	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			06/11/21 01:28	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			06/11/21 01:28	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			06/11/21 01:28	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			06/11/21 01:28	1
o-Xylene	0.50	U	0.50	0.095	ug/L			06/11/21 01:28	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			06/11/21 01:28	1
Styrene	0.50	U	0.50	0.056	ug/L			06/11/21 01:28	1
Bromoform	0.50	U	0.50	0.092	ug/L			06/11/21 01:28	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			06/11/21 01:28	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			06/11/21 01:28	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			06/11/21 01:28	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			06/11/21 01:28	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			06/11/21 01:28	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			06/11/21 01:28	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			06/11/21 01:28	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			06/11/21 01:28	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			06/11/21 01:28	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			06/11/21 01:28	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 43086-001
Date Collected: 06/03/21 11:05
Date Received: 06/04/21 10:10

Lab Sample ID: 280-149455-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			06/11/21 01:28	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			06/11/21 01:28	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			06/11/21 01:28	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			06/11/21 01:28	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			06/11/21 01:28	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			06/11/21 01:28	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			06/11/21 01:28	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			06/11/21 01:28	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			06/11/21 01:28	1
Naphthalene	0.50	U	0.50	0.085	ug/L			06/11/21 01:28	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			06/11/21 01:28	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			06/11/21 01:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*		*06/11/21 01:28*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*06/11/21 01:28*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*06/11/21 01:28*	*1*

Client Sample ID: 43086-002
Date Collected: 06/03/21 11:07
Date Received: 06/04/21 10:10

Lab Sample ID: 280-149455-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			06/11/21 01:03	1
Chloromethane	0.50	U	0.50	0.097	ug/L			06/11/21 01:03	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			06/11/21 01:03	1
Bromomethane	0.50	U	0.50	0.27	ug/L			06/11/21 01:03	1
Chloroethane	0.50	U	0.50	0.14	ug/L			06/11/21 01:03	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			06/11/21 01:03	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			06/11/21 01:03	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			06/11/21 01:03	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			06/11/21 01:03	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			06/11/21 01:03	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			06/11/21 01:03	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			06/11/21 01:03	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			06/11/21 01:03	1
Chloroform	0.50	U	0.50	0.11	ug/L			06/11/21 01:03	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			06/11/21 01:03	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			06/11/21 01:03	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			06/11/21 01:03	1
Benzene	0.50	U	0.50	0.077	ug/L			06/11/21 01:03	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			06/11/21 01:03	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			06/11/21 01:03	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			06/11/21 01:03	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			06/11/21 01:03	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			06/11/21 01:03	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			06/11/21 01:03	1
Toluene	0.50	U	0.50	0.041	ug/L			06/11/21 01:03	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			06/11/21 01:03	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			06/11/21 01:03	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			06/11/21 01:03	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 43086-002
Date Collected: 06/03/21 11:07
Date Received: 06/04/21 10:10

Lab Sample ID: 280-149455-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			06/11/21 01:03	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			06/11/21 01:03	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			06/11/21 01:03	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			06/11/21 01:03	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			06/11/21 01:03	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			06/11/21 01:03	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			06/11/21 01:03	1
o-Xylene	0.50	U	0.50	0.095	ug/L			06/11/21 01:03	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			06/11/21 01:03	1
Styrene	0.50	U	0.50	0.056	ug/L			06/11/21 01:03	1
Bromoform	0.50	U	0.50	0.092	ug/L			06/11/21 01:03	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			06/11/21 01:03	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			06/11/21 01:03	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			06/11/21 01:03	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			06/11/21 01:03	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			06/11/21 01:03	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			06/11/21 01:03	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			06/11/21 01:03	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			06/11/21 01:03	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			06/11/21 01:03	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			06/11/21 01:03	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			06/11/21 01:03	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			06/11/21 01:03	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			06/11/21 01:03	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			06/11/21 01:03	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			06/11/21 01:03	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			06/11/21 01:03	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			06/11/21 01:03	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			06/11/21 01:03	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			06/11/21 01:03	1
Naphthalene	0.50	U	0.50	0.085	ug/L			06/11/21 01:03	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			06/11/21 01:03	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			06/11/21 01:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*		*06/11/21 01:03*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*06/11/21 01:03*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*06/11/21 01:03*	*1*

Method: 6020A - Metals (ICP/MS)

Client Sample ID: 43086-002
Date Collected: 06/03/21 11:07
Date Received: 06/04/21 10:10

Lab Sample ID: 280-149455-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		06/10/21 17:13	06/15/21 22:37	2

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-149455-1
SDG: 43086

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
		DCA	TOL	BFB						
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)						
280-149455-1	43086-001	106	101	101						
280-149455-2	43086-002	107	101	99						
LCS 280-539419/3	Lab Control Sample	93	100	98						
LCSD 280-539419/4	Lab Control Sample Dup	96	101	98						
MB 280-539419/6	Method Blank	106	101	97						

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-539419/6
Matrix: Water
Analysis Batch: 539419

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			06/10/21 20:53	1
Chloromethane	0.50	U	0.50	0.097	ug/L			06/10/21 20:53	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			06/10/21 20:53	1
Bromomethane	0.50	U	0.50	0.27	ug/L			06/10/21 20:53	1
Chloroethane	0.50	U	0.50	0.14	ug/L			06/10/21 20:53	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			06/10/21 20:53	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			06/10/21 20:53	1
Methylene Chloride	0.392	J	0.50	0.098	ug/L			06/10/21 20:53	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			06/10/21 20:53	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			06/10/21 20:53	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			06/10/21 20:53	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			06/10/21 20:53	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			06/10/21 20:53	1
Chloroform	0.50	U	0.50	0.11	ug/L			06/10/21 20:53	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			06/10/21 20:53	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			06/10/21 20:53	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			06/10/21 20:53	1
Benzene	0.50	U	0.50	0.077	ug/L			06/10/21 20:53	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			06/10/21 20:53	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			06/10/21 20:53	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			06/10/21 20:53	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			06/10/21 20:53	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			06/10/21 20:53	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			06/10/21 20:53	1
Toluene	0.50	U	0.50	0.041	ug/L			06/10/21 20:53	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			06/10/21 20:53	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			06/10/21 20:53	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			06/10/21 20:53	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			06/10/21 20:53	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			06/10/21 20:53	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			06/10/21 20:53	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			06/10/21 20:53	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			06/10/21 20:53	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			06/10/21 20:53	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			06/10/21 20:53	1
o-Xylene	0.50	U	0.50	0.095	ug/L			06/10/21 20:53	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			06/10/21 20:53	1
Styrene	0.50	U	0.50	0.056	ug/L			06/10/21 20:53	1
Bromoform	0.50	U	0.50	0.092	ug/L			06/10/21 20:53	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			06/10/21 20:53	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			06/10/21 20:53	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			06/10/21 20:53	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			06/10/21 20:53	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			06/10/21 20:53	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			06/10/21 20:53	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			06/10/21 20:53	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			06/10/21 20:53	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			06/10/21 20:53	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-539419/6
Matrix: Water
Analysis Batch: 539419

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			06/10/21 20:53	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			06/10/21 20:53	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			06/10/21 20:53	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			06/10/21 20:53	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			06/10/21 20:53	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			06/10/21 20:53	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			06/10/21 20:53	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			06/10/21 20:53	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			06/10/21 20:53	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			06/10/21 20:53	1
Naphthalene	0.50	U	0.50	0.085	ug/L			06/10/21 20:53	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			06/10/21 20:53	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			06/10/21 20:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*		*06/10/21 20:53*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*06/10/21 20:53*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*06/10/21 20:53*	*1*

Lab Sample ID: LCS 280-539419/3
Matrix: Water
Analysis Batch: 539419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	20.0	19.7		ug/L		98	70 - 130
Chloromethane	20.0	16.5		ug/L		83	70 - 130
Vinyl chloride	20.0	19.9		ug/L		100	70 - 130
Bromomethane	20.0	19.0		ug/L		95	70 - 130
Chloroethane	20.0	19.3		ug/L		97	70 - 130
Trichlorofluoromethane	20.0	22.2		ug/L		111	70 - 130
1,1-Dichloroethene	20.0	22.1		ug/L		110	70 - 130
Methylene Chloride	20.0	18.6		ug/L		93	70 - 130
trans-1,2-Dichloroethene	20.0	21.5		ug/L		107	70 - 130
1,1-Dichloroethane	20.0	21.2		ug/L		106	70 - 130
cis-1,2-Dichloroethene	20.0	20.6		ug/L		103	70 - 130
2,2-Dichloropropane	20.0	22.3		ug/L		112	70 - 130
Bromochloromethane	20.0	21.1		ug/L		105	70 - 130
Chloroform	20.0	20.6		ug/L		103	70 - 130
1,1,1-Trichloroethane	20.0	21.9		ug/L		110	70 - 130
1,1-Dichloropropene	20.0	23.5		ug/L		117	70 - 130
Carbon tetrachloride	20.0	23.6		ug/L		118	70 - 130
Benzene	20.0	21.8		ug/L		109	70 - 130
1,2-Dichloroethane	20.0	20.3		ug/L		101	70 - 130
Trichloroethene	20.0	22.7		ug/L		113	70 - 130
1,2-Dichloropropane	20.0	21.5		ug/L		107	70 - 130
Dibromomethane	20.0	20.6		ug/L		103	70 - 130
Bromodichloromethane	20.0	21.1		ug/L		105	70 - 130
cis-1,3-Dichloropropene	20.0	22.8		ug/L		114	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-539419/3
Matrix: Water
Analysis Batch: 539419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	20.0	21.3		ug/L		107	70 - 130
trans-1,3-Dichloropropene	20.0	22.2		ug/L		111	70 - 130
1,1,2-Trichloroethane	20.0	21.7		ug/L		108	70 - 130
Tetrachloroethene	20.0	22.9		ug/L		114	70 - 130
1,3-Dichloropropane	20.0	22.3		ug/L		111	70 - 130
Dibromochloromethane	20.0	22.5		ug/L		113	70 - 130
1,2-Dibromoethane	20.0	22.5		ug/L		113	70 - 130
Chlorobenzene	20.0	21.3		ug/L		107	70 - 130
1,1,1,2-Tetrachloroethane	20.0	22.4		ug/L		112	70 - 130
Ethylbenzene	20.0	22.6		ug/L		113	70 - 130
m-Xylene & p-Xylene	20.0	22.4		ug/L		112	70 - 130
o-Xylene	20.0	22.1		ug/L		111	70 - 130
Xylenes, Total	40.0	44.5		ug/L		111	70 - 130
Styrene	20.0	20.9		ug/L		104	70 - 130
Bromoform	20.0	22.0		ug/L		110	70 - 130
Isopropylbenzene	20.0	22.8		ug/L		114	70 - 130
1,1,2,2-Tetrachloroethane	20.0	21.7		ug/L		109	70 - 130
Bromobenzene	20.0	21.0		ug/L		105	70 - 130
1,2,3-Trichloropropane	20.0	21.8		ug/L		109	70 - 130
N-Propylbenzene	20.0	22.8		ug/L		114	70 - 130
2-Chlorotoluene	20.0	21.7		ug/L		108	70 - 130
1,3,5-Trimethylbenzene	20.0	24.1		ug/L		121	70 - 130
4-Chlorotoluene	20.0	21.7		ug/L		109	70 - 130
tert-Butylbenzene	20.0	22.8		ug/L		114	70 - 130
1,2,4-Trimethylbenzene	20.0	22.6		ug/L		113	70 - 130
sec-Butylbenzene	20.0	23.5		ug/L		118	70 - 130
1,3-Dichlorobenzene	20.0	21.2		ug/L		106	70 - 130
4-Isopropyltoluene	20.0	23.6		ug/L		118	70 - 130
1,4-Dichlorobenzene	20.0	20.9		ug/L		105	70 - 130
n-Butylbenzene	20.0	23.9		ug/L		119	70 - 130
1,2-Dichlorobenzene	20.0	21.0		ug/L		105	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	23.4		ug/L		117	70 - 130
1,2,4-Trichlorobenzene	20.0	20.8		ug/L		104	70 - 130
Hexachlorobutadiene	20.0	21.6		ug/L		108	70 - 130
Naphthalene	20.0	21.8		ug/L		109	70 - 130
1,2,3-Trichlorobenzene	20.0	20.8		ug/L		104	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	22.6		ug/L		113	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-539419/4
Matrix: Water
Analysis Batch: 539419

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane	20.0	20.0		ug/L		100	70 - 130	2	20
Chloromethane	20.0	16.9		ug/L		84	70 - 130	2	20
Vinyl chloride	20.0	20.6		ug/L		103	70 - 130	3	20
Bromomethane	20.0	18.9		ug/L		95	70 - 130	1	20
Chloroethane	20.0	19.4		ug/L		97	70 - 130	1	20
Trichlorofluoromethane	20.0	22.5		ug/L		113	70 - 130	1	20
1,1-Dichloroethene	20.0	22.7		ug/L		114	70 - 130	3	20
Methylene Chloride	20.0	19.1		ug/L		95	70 - 130	2	20
trans-1,2-Dichloroethene	20.0	21.7		ug/L		109	70 - 130	1	20
1,1-Dichloroethane	20.0	21.5		ug/L		107	70 - 130	1	20
cis-1,2-Dichloroethene	20.0	21.1		ug/L		106	70 - 130	2	20
2,2-Dichloropropane	20.0	22.4		ug/L		112	70 - 130	0	20
Bromochloromethane	20.0	21.8		ug/L		109	70 - 130	4	20
Chloroform	20.0	21.0		ug/L		105	70 - 130	2	20
1,1,1-Trichloroethane	20.0	22.4		ug/L		112	70 - 130	2	20
1,1-Dichloropropene	20.0	23.9		ug/L		120	70 - 130	2	20
Carbon tetrachloride	20.0	24.1		ug/L		121	70 - 130	2	20
Benzene	20.0	22.3		ug/L		112	70 - 130	2	20
1,2-Dichloroethane	20.0	20.9		ug/L		104	70 - 130	3	20
Trichloroethene	20.0	23.1		ug/L		116	70 - 130	2	20
1,2-Dichloropropane	20.0	21.9		ug/L		110	70 - 130	2	20
Dibromomethane	20.0	21.1		ug/L		105	70 - 130	2	20
Bromodichloromethane	20.0	21.6		ug/L		108	70 - 130	2	20
cis-1,3-Dichloropropene	20.0	23.1		ug/L		115	70 - 130	1	20
Toluene	20.0	21.7		ug/L		108	70 - 130	2	20
trans-1,3-Dichloropropene	20.0	22.8		ug/L		114	70 - 130	3	20
1,1,2-Trichloroethane	20.0	22.0		ug/L		110	70 - 130	1	20
Tetrachloroethene	20.0	23.2		ug/L		116	70 - 130	1	20
1,3-Dichloropropane	20.0	22.6		ug/L		113	70 - 130	1	20
Dibromochloromethane	20.0	23.2		ug/L		116	70 - 130	3	20
1,2-Dibromoethane	20.0	22.8		ug/L		114	70 - 130	1	20
Chlorobenzene	20.0	21.6		ug/L		108	70 - 130	1	20
1,1,1,2-Tetrachloroethane	20.0	22.7		ug/L		114	70 - 130	2	20
Ethylbenzene	20.0	23.0		ug/L		115	70 - 130	2	20
m-Xylene & p-Xylene	20.0	22.7		ug/L		113	70 - 130	1	20
o-Xylene	20.0	22.4		ug/L		112	70 - 130	1	20
Xylenes, Total	40.0	45.1		ug/L		113	70 - 130	1	20
Styrene	20.0	21.3		ug/L		106	70 - 130	2	20
Bromoform	20.0	22.5		ug/L		113	70 - 130	2	20
Isopropylbenzene	20.0	22.9		ug/L		114	70 - 130	0	20
1,1,2,2-Tetrachloroethane	20.0	21.5		ug/L		107	70 - 130	1	20
Bromobenzene	20.0	21.1		ug/L		105	70 - 130	0	20
1,2,3-Trichloropropane	20.0	21.1		ug/L		106	70 - 130	3	20
N-Propylbenzene	20.0	22.8		ug/L		114	70 - 130	0	20
2-Chlorotoluene	20.0	21.9		ug/L		110	70 - 130	1	20
1,3,5-Trimethylbenzene	20.0	24.4		ug/L		122	70 - 130	1	20
4-Chlorotoluene	20.0	22.1		ug/L		111	70 - 130	2	20
tert-Butylbenzene	20.0	22.8		ug/L		114	70 - 130	0	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-539419/4
Matrix: Water
Analysis Batch: 539419

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	22.6		ug/L		113	70 - 130	0	20
sec-Butylbenzene			20.0	23.7		ug/L		119	70 - 130	1	20
1,3-Dichlorobenzene			20.0	21.2		ug/L		106	70 - 130	0	20
4-Isopropyltoluene			20.0	23.6		ug/L		118	70 - 130	0	20
1,4-Dichlorobenzene			20.0	21.0		ug/L		105	70 - 130	1	20
n-Butylbenzene			20.0	23.9		ug/L		120	70 - 130	0	20
1,2-Dichlorobenzene			20.0	21.2		ug/L		106	70 - 130	1	20
1,2-Dibromo-3-Chloropropane			20.0	22.7		ug/L		114	70 - 130	3	20
1,2,4-Trichlorobenzene			20.0	20.9		ug/L		105	70 - 130	1	20
Hexachlorobutadiene			20.0	21.6		ug/L		108	70 - 130	0	20
Naphthalene			20.0	21.5		ug/L		108	70 - 130	1	20
1,2,3-Trichlorobenzene			20.0	20.6		ug/L		103	70 - 130	1	20
Methyl-t-Butyl Ether (MTBE)			20.0	22.9		ug/L		114	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-513765/1-A ^2
Matrix: Water
Analysis Batch: 514492

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 513765

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		06/10/21 17:13	06/15/21 22:31	2

Lab Sample ID: LCS 160-513765/2-A ^2
Matrix: Water
Analysis Batch: 514492

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 513765

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	189		ug/L		94	82 - 116		

Lab Sample ID: 280-149455-2 MS
Matrix: Water
Analysis Batch: 514492

Client Sample ID: 43086-002
Prep Type: Total/NA
Prep Batch: 513765

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	187		ug/L		93	82 - 116		

Lab Sample ID: 280-149455-2 MSD
Matrix: Water
Analysis Batch: 514492

Client Sample ID: 43086-002
Prep Type: Total/NA
Prep Batch: 513765

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	188		ug/L		94	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-149455-1
SDG: 43086

GC/MS VOA

Analysis Batch: 539419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-149455-1	43086-001	Total/NA	Water	524.2	
280-149455-2	43086-002	Total/NA	Water	524.2	
MB 280-539419/6	Method Blank	Total/NA	Water	524.2	
LCS 280-539419/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 280-539419/4	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 513765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-149455-2	43086-002	Total/NA	Water	3010A	
MB 160-513765/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-513765/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
280-149455-2 MS	43086-002	Total/NA	Water	3010A	
280-149455-2 MSD	43086-002	Total/NA	Water	3010A	

Analysis Batch: 514492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-149455-2	43086-002	Total/NA	Water	6020A	513765
MB 160-513765/1-A ^2	Method Blank	Total/NA	Water	6020A	513765
LCS 160-513765/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	513765
280-149455-2 MS	43086-002	Total/NA	Water	6020A	513765
280-149455-2 MSD	43086-002	Total/NA	Water	6020A	513765

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-149455-1
SDG: 43086

Client Sample ID: 43086-001
Date Collected: 06/03/21 11:05
Date Received: 06/04/21 10:10

Lab Sample ID: 280-149455-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	524.2		1	5 mL	5 mL	539419	06/11/21 01:28	GO	TAL DEN

Client Sample ID: 43086-002
Date Collected: 06/03/21 11:07
Date Received: 06/04/21 10:10

Lab Sample ID: 280-149455-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	524.2		1	5 mL	5 mL	539419	06/11/21 01:03	GO	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	513765	06/10/21 17:13	LAM	TAL SL
Total/NA	Analysis	6020A		2			514492	06/15/21 22:37	CJJ	TAL SL

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-149455-1
SDG: 43086

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	06-30-21
A2LA	ISO/IEC 17025	2907.01	06-30-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21 *
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-21
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-21
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	06-30-21
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-21
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	06-30-21

Laboratory: Eurofins TestAmerica, St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11616	04-01-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3010A	Water	Thallium

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 43086

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Metz M. Yost	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD use TB-1 from 43088

Type UID	Smp	Coll	Sample Information Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	6/3/21	1105	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1107	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		↓	W	RTW-1 Effluent	250 ML	P	1	HNO3										X
~~003~~	~~E~~	~~G~~	~~TB-1~~	0			W	Trip Blank	40 ML	SC	3	HCL					X					

280-149455 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. Metz 6/3/21	Print	Print
Signature 1300	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Adam Ubick 6/4/2021	Print	Print
Signature 1010	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13) 0.4IR11+0.4

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 280-572115.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 280-149455-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/17/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A_DOD5/3010A_2% (MOD) Chromium, Thallium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
43086-002 (280-149455-2)	6/3/21	11:07 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Level 1 radioactive	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	6/9/21 1205		FE		
2	FE			[signature]	6/8/21 0855	GTMOR
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-149455-1
SDG Number: 43086

Login Number: 149455
List Number: 1
Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-149455-1
SDG Number: 43086

Login Number: 149455
List Number: 2
Creator: Geiler, Autumn R

List Source: Eurofins TestAmerica, St. Louis
List Creation: 06/10/21 03:49 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-149979-1
Laboratory Sample Delivery Group: 43114
Client Project/Site: BNL - OU3 B98

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
7/1/2021 9:42:00 AM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 280-149979-1
SDG: 43114

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-149979-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B98

Report Number: 280-149979-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 6/17/2021 9:55 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.2º C.

DRINKING WATER VOLATILES (GC-MS)

Samples 43114-001 (280-149979-1), 43114-002 (280-149979-2) and 43114-003 (280-149979-3) were analyzed for drinking water volatiles (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 06/27/2021.

Job ID: 280-149979-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

Only one internal standard - Fluorobenzene - is required by the method. The laboratory uses three.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS

Sample 43114-002 (280-149979-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 06/28/2021 and analyzed on 06/30/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

Analytical Batch 160-516652:
The low level check (CCVL) was outside upper QC limits for thallium. Only the MB and LCS were associated with this CCVL and were within limits: (CCVL 160-516652/121).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 280-149979-1
SDG: 43114

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL

Protocol References:

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 280-149979-1
SDG: 43114

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-149979-1	43114-001	Water	06/14/21 09:55	06/17/21 09:55	
280-149979-2	43114-002	Water	06/14/21 10:00	06/17/21 09:55	
280-149979-3	43114-003	Water	06/14/21 07:30	06/17/21 09:55	

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 280-149979-1
SDG: 43114

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Client Sample ID: 43114-001
Date Collected: 06/14/21 09:55
Date Received: 06/17/21 09:55

Lab Sample ID: 280-149979-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			06/27/21 13:27	1
Chloromethane	0.50	U	0.50	0.097	ug/L			06/27/21 13:27	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			06/27/21 13:27	1
Bromomethane	0.50	U	0.50	0.27	ug/L			06/27/21 13:27	1
Chloroethane	0.50	U	0.50	0.14	ug/L			06/27/21 13:27	1
Trichlorofluoromethane	**0.17**	**J**	0.50	0.057	ug/L			06/27/21 13:27	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			06/27/21 13:27	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			06/27/21 13:27	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			06/27/21 13:27	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			06/27/21 13:27	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			06/27/21 13:27	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			06/27/21 13:27	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			06/27/21 13:27	1
Chloroform	**0.49**	**J**	0.50	0.11	ug/L			06/27/21 13:27	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			06/27/21 13:27	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			06/27/21 13:27	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			06/27/21 13:27	1
Benzene	0.50	U	0.50	0.077	ug/L			06/27/21 13:27	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			06/27/21 13:27	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			06/27/21 13:27	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			06/27/21 13:27	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			06/27/21 13:27	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			06/27/21 13:27	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			06/27/21 13:27	1
Toluene	0.50	U	0.50	0.041	ug/L			06/27/21 13:27	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			06/27/21 13:27	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			06/27/21 13:27	1
Tetrachloroethene	**3.1**		0.50	0.072	ug/L			06/27/21 13:27	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			06/27/21 13:27	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			06/27/21 13:27	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			06/27/21 13:27	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			06/27/21 13:27	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			06/27/21 13:27	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			06/27/21 13:27	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			06/27/21 13:27	1
o-Xylene	0.50	U	0.50	0.095	ug/L			06/27/21 13:27	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			06/27/21 13:27	1
Styrene	0.50	U	0.50	0.056	ug/L			06/27/21 13:27	1
Bromoform	0.50	U	0.50	0.092	ug/L			06/27/21 13:27	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			06/27/21 13:27	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			06/27/21 13:27	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			06/27/21 13:27	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			06/27/21 13:27	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			06/27/21 13:27	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			06/27/21 13:27	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			06/27/21 13:27	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			06/27/21 13:27	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			06/27/21 13:27	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			06/27/21 13:27	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 43114-001
Date Collected: 06/14/21 09:55
Date Received: 06/17/21 09:55

Lab Sample ID: 280-149979-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			06/27/21 13:27	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			06/27/21 13:27	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			06/27/21 13:27	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			06/27/21 13:27	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			06/27/21 13:27	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			06/27/21 13:27	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			06/27/21 13:27	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			06/27/21 13:27	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			06/27/21 13:27	1
Naphthalene	0.50	U	0.50	0.085	ug/L			06/27/21 13:27	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			06/27/21 13:27	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			06/27/21 13:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*06/27/21 13:27*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*06/27/21 13:27*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*06/27/21 13:27*	*1*

Client Sample ID: 43114-002
Date Collected: 06/14/21 10:00
Date Received: 06/17/21 09:55

Lab Sample ID: 280-149979-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			06/27/21 13:51	1
Chloromethane	0.50	U	0.50	0.097	ug/L			06/27/21 13:51	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			06/27/21 13:51	1
Bromomethane	0.50	U	0.50	0.27	ug/L			06/27/21 13:51	1
Chloroethane	0.50	U	0.50	0.14	ug/L			06/27/21 13:51	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			06/27/21 13:51	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			06/27/21 13:51	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			06/27/21 13:51	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			06/27/21 13:51	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			06/27/21 13:51	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			06/27/21 13:51	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			06/27/21 13:51	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			06/27/21 13:51	1
Chloroform	0.50	U	0.50	0.11	ug/L			06/27/21 13:51	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			06/27/21 13:51	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			06/27/21 13:51	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			06/27/21 13:51	1
Benzene	0.50	U	0.50	0.077	ug/L			06/27/21 13:51	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			06/27/21 13:51	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			06/27/21 13:51	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			06/27/21 13:51	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			06/27/21 13:51	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			06/27/21 13:51	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			06/27/21 13:51	1
Toluene	0.50	U	0.50	0.041	ug/L			06/27/21 13:51	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			06/27/21 13:51	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			06/27/21 13:51	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			06/27/21 13:51	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 43114-002
Date Collected: 06/14/21 10:00
Date Received: 06/17/21 09:55

Lab Sample ID: 280-149979-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			06/27/21 13:51	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			06/27/21 13:51	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			06/27/21 13:51	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			06/27/21 13:51	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			06/27/21 13:51	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			06/27/21 13:51	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			06/27/21 13:51	1
o-Xylene	0.50	U	0.50	0.095	ug/L			06/27/21 13:51	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			06/27/21 13:51	1
Styrene	0.50	U	0.50	0.056	ug/L			06/27/21 13:51	1
Bromoform	0.50	U	0.50	0.092	ug/L			06/27/21 13:51	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			06/27/21 13:51	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			06/27/21 13:51	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			06/27/21 13:51	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			06/27/21 13:51	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			06/27/21 13:51	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			06/27/21 13:51	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			06/27/21 13:51	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			06/27/21 13:51	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			06/27/21 13:51	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			06/27/21 13:51	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			06/27/21 13:51	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			06/27/21 13:51	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			06/27/21 13:51	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			06/27/21 13:51	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			06/27/21 13:51	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			06/27/21 13:51	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			06/27/21 13:51	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			06/27/21 13:51	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			06/27/21 13:51	1
Naphthalene	0.50	U	0.50	0.085	ug/L			06/27/21 13:51	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			06/27/21 13:51	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			06/27/21 13:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 130*		*06/27/21 13:51*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*06/27/21 13:51*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*06/27/21 13:51*	*1*

Client Sample ID: 43114-003
Date Collected: 06/14/21 07:30
Date Received: 06/17/21 09:55

Lab Sample ID: 280-149979-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			06/27/21 14:14	1
Chloromethane	0.50	U	0.50	0.097	ug/L			06/27/21 14:14	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			06/27/21 14:14	1
Bromomethane	0.50	U	0.50	0.27	ug/L			06/27/21 14:14	1
Chloroethane	0.50	U	0.50	0.14	ug/L			06/27/21 14:14	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			06/27/21 14:14	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			06/27/21 14:14	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 43114-003
Date Collected: 06/14/21 07:30
Date Received: 06/17/21 09:55

Lab Sample ID: 280-149979-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	0.50	U	0.50	0.098	ug/L			06/27/21 14:14	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			06/27/21 14:14	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			06/27/21 14:14	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			06/27/21 14:14	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			06/27/21 14:14	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			06/27/21 14:14	1
Chloroform	0.50	U	0.50	0.11	ug/L			06/27/21 14:14	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			06/27/21 14:14	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			06/27/21 14:14	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			06/27/21 14:14	1
Benzene	0.50	U	0.50	0.077	ug/L			06/27/21 14:14	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			06/27/21 14:14	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			06/27/21 14:14	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			06/27/21 14:14	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			06/27/21 14:14	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			06/27/21 14:14	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			06/27/21 14:14	1
Toluene	0.50	U	0.50	0.041	ug/L			06/27/21 14:14	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			06/27/21 14:14	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			06/27/21 14:14	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			06/27/21 14:14	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			06/27/21 14:14	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			06/27/21 14:14	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			06/27/21 14:14	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			06/27/21 14:14	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			06/27/21 14:14	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			06/27/21 14:14	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			06/27/21 14:14	1
o-Xylene	0.50	U	0.50	0.095	ug/L			06/27/21 14:14	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			06/27/21 14:14	1
Styrene	0.50	U	0.50	0.056	ug/L			06/27/21 14:14	1
Bromoform	0.50	U	0.50	0.092	ug/L			06/27/21 14:14	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			06/27/21 14:14	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			06/27/21 14:14	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			06/27/21 14:14	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			06/27/21 14:14	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			06/27/21 14:14	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			06/27/21 14:14	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			06/27/21 14:14	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			06/27/21 14:14	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			06/27/21 14:14	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			06/27/21 14:14	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			06/27/21 14:14	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			06/27/21 14:14	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			06/27/21 14:14	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			06/27/21 14:14	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			06/27/21 14:14	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			06/27/21 14:14	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			06/27/21 14:14	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 43114-003
Date Collected: 06/14/21 07:30
Date Received: 06/17/21 09:55

Lab Sample ID: 280-149979-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			06/27/21 14:14	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			06/27/21 14:14	1
Naphthalene	0.50	U	0.50	0.085	ug/L			06/27/21 14:14	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			06/27/21 14:14	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			06/27/21 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 130*		*06/27/21 14:14*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*06/27/21 14:14*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*06/27/21 14:14*	*1*

Method: 6020A - Metals (ICP/MS)

Client Sample ID: 43114-002
Date Collected: 06/14/21 10:00
Date Received: 06/17/21 09:55

Lab Sample ID: 280-149979-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		06/28/21 13:24	06/30/21 01:41	2

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 280-149979-1
SDG: 43114

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-149979-1	43114-001	110	98	104
280-149979-2	43114-002	111	99	101
280-149979-3	43114-003	109	99	102
LCS 280-541411/3	Lab Control Sample	95	101	104
LCSD 280-541411/4	Lab Control Sample Dup	97	101	102
MB 280-541411/6	Method Blank	103	99	104

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-541411/6
Matrix: Water
Analysis Batch: 541411

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			06/27/21 10:44	1
Chloromethane	0.50	U	0.50	0.097	ug/L			06/27/21 10:44	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			06/27/21 10:44	1
Bromomethane	0.50	U	0.50	0.27	ug/L			06/27/21 10:44	1
Chloroethane	0.50	U	0.50	0.14	ug/L			06/27/21 10:44	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			06/27/21 10:44	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			06/27/21 10:44	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			06/27/21 10:44	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			06/27/21 10:44	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			06/27/21 10:44	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			06/27/21 10:44	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			06/27/21 10:44	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			06/27/21 10:44	1
Chloroform	0.50	U	0.50	0.11	ug/L			06/27/21 10:44	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			06/27/21 10:44	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			06/27/21 10:44	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			06/27/21 10:44	1
Benzene	0.50	U	0.50	0.077	ug/L			06/27/21 10:44	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			06/27/21 10:44	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			06/27/21 10:44	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			06/27/21 10:44	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			06/27/21 10:44	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			06/27/21 10:44	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			06/27/21 10:44	1
Toluene	0.50	U	0.50	0.041	ug/L			06/27/21 10:44	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			06/27/21 10:44	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			06/27/21 10:44	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			06/27/21 10:44	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			06/27/21 10:44	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			06/27/21 10:44	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			06/27/21 10:44	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			06/27/21 10:44	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			06/27/21 10:44	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			06/27/21 10:44	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			06/27/21 10:44	1
o-Xylene	0.50	U	0.50	0.095	ug/L			06/27/21 10:44	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			06/27/21 10:44	1
Styrene	0.50	U	0.50	0.056	ug/L			06/27/21 10:44	1
Bromoform	0.50	U	0.50	0.092	ug/L			06/27/21 10:44	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			06/27/21 10:44	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			06/27/21 10:44	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			06/27/21 10:44	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			06/27/21 10:44	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			06/27/21 10:44	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			06/27/21 10:44	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			06/27/21 10:44	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			06/27/21 10:44	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			06/27/21 10:44	1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-541411/6
Matrix: Water
Analysis Batch: 541411

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			06/27/21 10:44	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			06/27/21 10:44	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			06/27/21 10:44	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			06/27/21 10:44	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			06/27/21 10:44	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			06/27/21 10:44	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			06/27/21 10:44	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			06/27/21 10:44	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			06/27/21 10:44	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			06/27/21 10:44	1
Naphthalene	0.50	U	0.50	0.085	ug/L			06/27/21 10:44	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			06/27/21 10:44	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			06/27/21 10:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*06/27/21 10:44*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*06/27/21 10:44*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*06/27/21 10:44*	*1*

Lab Sample ID: LCS 280-541411/3
Matrix: Water
Analysis Batch: 541411

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	20.0	21.3		ug/L		107	70 - 130
Chloromethane	20.0	21.0		ug/L		105	70 - 130
Vinyl chloride	20.0	20.8		ug/L		104	70 - 130
Bromomethane	20.0	19.9		ug/L		99	70 - 130
Chloroethane	20.0	19.2		ug/L		96	70 - 130
Trichlorofluoromethane	20.0	19.3		ug/L		97	70 - 130
1,1-Dichloroethene	20.0	17.3		ug/L		86	70 - 130
Methylene Chloride	20.0	17.0		ug/L		85	70 - 130
trans-1,2-Dichloroethene	20.0	18.2		ug/L		91	70 - 130
1,1-Dichloroethane	20.0	18.6		ug/L		93	70 - 130
cis-1,2-Dichloroethene	20.0	18.1		ug/L		91	70 - 130
2,2-Dichloropropane	20.0	19.1		ug/L		96	70 - 130
Bromochloromethane	20.0	17.6		ug/L		88	70 - 130
Chloroform	20.0	18.3		ug/L		92	70 - 130
1,1,1-Trichloroethane	20.0	16.7		ug/L		83	70 - 130
1,1-Dichloropropene	20.0	17.6		ug/L		88	70 - 130
Carbon tetrachloride	20.0	17.9		ug/L		90	70 - 130
Benzene	20.0	18.7		ug/L		94	70 - 130
1,2-Dichloroethane	20.0	18.0		ug/L		90	70 - 130
Trichloroethene	20.0	18.1		ug/L		90	70 - 130
1,2-Dichloropropane	20.0	18.8		ug/L		94	70 - 130
Dibromomethane	20.0	18.0		ug/L		90	70 - 130
Bromodichloromethane	20.0	19.0		ug/L		95	70 - 130
cis-1,3-Dichloropropene	20.0	19.5		ug/L		98	70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-541411/3
Matrix: Water
Analysis Batch: 541411

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	20.0	18.8		ug/L		94	70 - 130
trans-1,3-Dichloropropene	20.0	19.2		ug/L		96	70 - 130
1,1,2-Trichloroethane	20.0	18.7		ug/L		93	70 - 130
Tetrachloroethene	20.0	18.5		ug/L		92	70 - 130
1,3-Dichloropropane	20.0	19.0		ug/L		95	70 - 130
Dibromochloromethane	20.0	19.5		ug/L		98	70 - 130
1,2-Dibromoethane	20.0	18.9		ug/L		94	70 - 130
Chlorobenzene	20.0	18.5		ug/L		93	70 - 130
1,1,1,2-Tetrachloroethane	20.0	19.5		ug/L		97	70 - 130
Ethylbenzene	20.0	19.3		ug/L		96	70 - 130
m-Xylene & p-Xylene	20.0	19.1		ug/L		95	70 - 130
o-Xylene	20.0	19.6		ug/L		98	70 - 130
Xylenes, Total	40.0	38.7		ug/L		97	70 - 130
Styrene	20.0	19.4		ug/L		97	70 - 130
Bromoform	20.0	19.7		ug/L		98	70 - 130
Isopropylbenzene	20.0	19.8		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	20.0	18.8		ug/L		94	70 - 130
Bromobenzene	20.0	19.1		ug/L		95	70 - 130
1,2,3-Trichloropropane	20.0	19.1		ug/L		95	70 - 130
N-Propylbenzene	20.0	19.8		ug/L		99	70 - 130
2-Chlorotoluene	20.0	19.7		ug/L		98	70 - 130
1,3,5-Trimethylbenzene	20.0	19.8		ug/L		99	70 - 130
4-Chlorotoluene	20.0	19.2		ug/L		96	70 - 130
tert-Butylbenzene	20.0	19.6		ug/L		98	70 - 130
1,2,4-Trimethylbenzene	20.0	19.8		ug/L		99	70 - 130
sec-Butylbenzene	20.0	19.5		ug/L		98	70 - 130
1,3-Dichlorobenzene	20.0	18.7		ug/L		93	70 - 130
4-Isopropyltoluene	20.0	19.6		ug/L		98	70 - 130
1,4-Dichlorobenzene	20.0	18.3		ug/L		92	70 - 130
n-Butylbenzene	20.0	19.8		ug/L		99	70 - 130
1,2-Dichlorobenzene	20.0	18.9		ug/L		94	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	19.5		ug/L		97	70 - 130
1,2,4-Trichlorobenzene	20.0	17.9		ug/L		90	70 - 130
Hexachlorobutadiene	20.0	17.7		ug/L		88	70 - 130
Naphthalene	20.0	18.6		ug/L		93	70 - 130
1,2,3-Trichlorobenzene	20.0	18.0		ug/L		90	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	18.9		ug/L		94	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-541411/4
Matrix: Water
Analysis Batch: 541411

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane	20.0	22.0		ug/L		110	70 - 130	3	20
Chloromethane	20.0	21.0		ug/L		105	70 - 130	0	20
Vinyl chloride	20.0	21.3		ug/L		106	70 - 130	2	20
Bromomethane	20.0	20.8		ug/L		104	70 - 130	4	20
Chloroethane	20.0	18.4		ug/L		92	70 - 130	4	20
Trichlorofluoromethane	20.0	20.1		ug/L		100	70 - 130	4	20
1,1-Dichloroethene	20.0	17.6		ug/L		88	70 - 130	2	20
Methylene Chloride	20.0	17.1		ug/L		85	70 - 130	1	20
trans-1,2-Dichloroethene	20.0	18.5		ug/L		93	70 - 130	2	20
1,1-Dichloroethane	20.0	18.9		ug/L		95	70 - 130	2	20
cis-1,2-Dichloroethene	20.0	18.5		ug/L		92	70 - 130	2	20
2,2-Dichloropropane	20.0	19.7		ug/L		98	70 - 130	3	20
Bromochloromethane	20.0	17.8		ug/L		89	70 - 130	1	20
Chloroform	20.0	18.4		ug/L		92	70 - 130	0	20
1,1,1-Trichloroethane	20.0	17.3		ug/L		86	70 - 130	4	20
1,1-Dichloropropene	20.0	18.4		ug/L		92	70 - 130	5	20
Carbon tetrachloride	20.0	18.9		ug/L		95	70 - 130	5	20
Benzene	20.0	19.0		ug/L		95	70 - 130	1	20
1,2-Dichloroethane	20.0	18.1		ug/L		90	70 - 130	1	20
Trichloroethene	20.0	18.6		ug/L		93	70 - 130	3	20
1,2-Dichloropropane	20.0	19.0		ug/L		95	70 - 130	1	20
Dibromomethane	20.0	18.0		ug/L		90	70 - 130	0	20
Bromodichloromethane	20.0	19.3		ug/L		96	70 - 130	1	20
cis-1,3-Dichloropropene	20.0	19.8		ug/L		99	70 - 130	2	20
Toluene	20.0	19.2		ug/L		96	70 - 130	2	20
trans-1,3-Dichloropropene	20.0	19.5		ug/L		98	70 - 130	1	20
1,1,2-Trichloroethane	20.0	18.9		ug/L		95	70 - 130	1	20
Tetrachloroethene	20.0	19.3		ug/L		97	70 - 130	4	20
1,3-Dichloropropane	20.0	19.3		ug/L		96	70 - 130	2	20
Dibromochloromethane	20.0	19.9		ug/L		99	70 - 130	2	20
1,2-Dibromoethane	20.0	19.0		ug/L		95	70 - 130	1	20
Chlorobenzene	20.0	18.9		ug/L		95	70 - 130	2	20
1,1,1,2-Tetrachloroethane	20.0	20.0		ug/L		100	70 - 130	3	20
Ethylbenzene	20.0	19.9		ug/L		100	70 - 130	3	20
m-Xylene & p-Xylene	20.0	19.5		ug/L		98	70 - 130	2	20
o-Xylene	20.0	19.9		ug/L		100	70 - 130	2	20
Xylenes, Total	40.0	39.4		ug/L		99	70 - 130	2	20
Styrene	20.0	20.0		ug/L		100	70 - 130	3	20
Bromoform	20.0	20.0		ug/L		100	70 - 130	2	20
Isopropylbenzene	20.0	20.2		ug/L		101	70 - 130	2	20
1,1,2,2-Tetrachloroethane	20.0	19.0		ug/L		95	70 - 130	1	20
Bromobenzene	20.0	19.2		ug/L		96	70 - 130	1	20
1,2,3-Trichloropropane	20.0	19.2		ug/L		96	70 - 130	1	20
N-Propylbenzene	20.0	20.4		ug/L		102	70 - 130	3	20
2-Chlorotoluene	20.0	19.9		ug/L		99	70 - 130	1	20
1,3,5-Trimethylbenzene	20.0	20.3		ug/L		102	70 - 130	2	20
4-Chlorotoluene	20.0	19.6		ug/L		98	70 - 130	2	20
tert-Butylbenzene	20.0	20.3		ug/L		101	70 - 130	3	20

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-541411/4
Matrix: Water
Analysis Batch: 541411

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	20.1		ug/L		101	70 - 130	2	20
sec-Butylbenzene			20.0	20.2		ug/L		101	70 - 130	4	20
1,3-Dichlorobenzene			20.0	19.0		ug/L		95	70 - 130	2	20
4-Isopropyltoluene			20.0	20.2		ug/L		101	70 - 130	3	20
1,4-Dichlorobenzene			20.0	18.7		ug/L		94	70 - 130	2	20
n-Butylbenzene			20.0	20.3		ug/L		102	70 - 130	2	20
1,2-Dichlorobenzene			20.0	19.0		ug/L		95	70 - 130	0	20
1,2-Dibromo-3-Chloropropane			20.0	19.6		ug/L		98	70 - 130	1	20
1,2,4-Trichlorobenzene			20.0	18.4		ug/L		92	70 - 130	2	20
Hexachlorobutadiene			20.0	18.2		ug/L		91	70 - 130	3	20
Naphthalene			20.0	18.6		ug/L		93	70 - 130	0	20
1,2,3-Trichlorobenzene			20.0	18.4		ug/L		92	70 - 130	2	20
Methyl-t-Butyl Ether (MTBE)			20.0	18.1		ug/L		91	70 - 130	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-516421/1-A ^2
Matrix: Water
Analysis Batch: 516652

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 516421

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		06/28/21 13:24	06/30/21 00:29	2

Lab Sample ID: LCS 160-516421/2-A ^2
Matrix: Water
Analysis Batch: 516652

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 516421

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	191		ug/L		96	82 - 116		

Lab Sample ID: 680-200619-A-5-B MS ^2
Matrix: Water
Analysis Batch: 516652

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 516421

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	191		ug/L		95	82 - 116		

Lab Sample ID: 680-200619-A-5-C MSD ^2
Matrix: Water
Analysis Batch: 516652

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 516421

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	193		ug/L		97	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 280-149979-1
SDG: 43114

GC/MS VOA

Analysis Batch: 541411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-149979-1	43114-001	Total/NA	Water	524.2	
280-149979-2	43114-002	Total/NA	Water	524.2	
280-149979-3	43114-003	Total/NA	Water	524.2	
MB 280-541411/6	Method Blank	Total/NA	Water	524.2	
LCS 280-541411/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 280-541411/4	Lab Control Sample Dup	Total/NA	Water	524.2	

Metals

Prep Batch: 516421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-149979-2	43114-002	Total/NA	Water	3010A	
MB 160-516421/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-516421/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
680-200619-A-5-B MS ^2	Matrix Spike	Total/NA	Water	3010A	
680-200619-A-5-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 516652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-149979-2	43114-002	Total/NA	Water	6020A	516421
MB 160-516421/1-A ^2	Method Blank	Total/NA	Water	6020A	516421
LCS 160-516421/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	516421
680-200619-A-5-B MS ^2	Matrix Spike	Total/NA	Water	6020A	516421
680-200619-A-5-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	6020A	516421

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 280-149979-1
SDG: 43114

Client Sample ID: 43114-001
Date Collected: 06/14/21 09:55
Date Received: 06/17/21 09:55

Lab Sample ID: 280-149979-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	524.2		1	5 mL	5 mL	541411	06/27/21 13:27	TAW	TAL DEN

Client Sample ID: 43114-002
Date Collected: 06/14/21 10:00
Date Received: 06/17/21 09:55

Lab Sample ID: 280-149979-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	524.2		1	5 mL	5 mL	541411	06/27/21 13:51	TAW	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	516421	06/28/21 13:24	CJJ	TAL SL
Total/NA	Analysis	6020A		2			516652	06/30/21 01:41	CJJ	TAL SL

Client Sample ID: 43114-003
Date Collected: 06/14/21 07:30
Date Received: 06/17/21 09:55

Lab Sample ID: 280-149979-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	524.2		1	5 mL	5 mL	541411	06/27/21 14:14	TAW	TAL DEN

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B98

Job ID: 280-149979-1
SDG: 43114

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
A2LA	ISO/IEC 17025	2907.01	10-31-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21 *
California	State	2513	01-08-22
Connecticut	State	PH-0686	11-30-22
Florida	NELAP	E87667-57	07-01-21
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-21
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-21
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	06-30-21
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

Laboratory: Eurofins TestAmerica, St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11616	04-01-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3010A	Water	Thallium

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

Requires EDD

280-149979 Chain of Custody

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 43114

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 13715 Rider Trail N.
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Earth City St: MO Zip: 63045
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Mett	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD Use Trip Blank for 43113

Type UID	Smp	Coll	Sample Information Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	6/14/21	0955	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1000	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		↓	W	RTW-1 Effluent	250 ML	P	1	HNO3										X
003	E	G	TB-1	0	↓	0730	W	Trip Blank	40 ML	SC	3	HCL					X					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. Mett 6/14/21	Print	Print
Signature 1700	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Adam Dubek, 06/15/2021	Print	Print
Signature 0955	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☒ Disposal by Lab
- ☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

0.8 IR12 CPT0.4

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 280-573753.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 280-149979-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/30/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B98	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A_DOD5/3010A_2% (MOD) Chromium, Thallium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
43114-002 (280-149979-2)	6/14/21	10:00 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Level 1 radioactive	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Scott C Hall	6/18/21 1515	EETA Denver	FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by:	Date/Time: 6/19/21 0930	Company EEA SLC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-149979-1
SDG Number: 43114

Login Number: 149979
List Number: 1
Creator: Rystrom, Joshua R

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-149979-1
SDG Number: 43114

Login Number: 149979
List Number: 2
Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis
List Creation: 06/19/21 03:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-150736-1
Laboratory Sample Delivery Group: 43164
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
7/23/2021 4:47:04 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-150736-1
SDG: 43164

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-150736-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 SB-P&T

Report Number: 280-150665-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The sample was received on 7/9/2021 9:20 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1º C.

VOLATILE ORGANIC COMPOUNDS

Job ID: 280-150736-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

Sample 43159-001 (280-150665-1) was analyzed for volatile organic compounds in accordance with SW 846 Method 8260C. The samples were analyzed on 07/20/2021.

Analytical Batch 280-543625:
The continuing calibration verification (CCV) recovered above the upper control limit for 1,1,1,2-Tetrachloroethane at 23.6%D) (20%), Chlorodibromomethane at 22.6%D (20%), 1,3-Dichloropropane at 22.2%D (20%D), cis-1,3-Dichloropropene at 21.6%D (20%D), and Styrene at 21.2%D (20%D). The samples associated with this CCV were non-detect for the affected analytes; therefore, the data was reported: 43159-001 (280-150665-1).

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD was analyzed to demonstrate batch precision.

Methylene Chloride was detected in method blank MB 280-543625/5 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TRITIUM, TOTAL (LSC)
Sample 43159-001 (280-150665-1) was analyzed for Tritium, Total (LSC) in accordance with USEPA 906.0. The samples were prepared on 07/16/2021 and analyzed on 07/20/2021.

Preparation Batch 160-518921:
The Tritium matrix spike (MS) associated with the following samples has a spike recovery outside of the control limits at 138% (67-130%). Sample matrix interference and/or non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits. The data was reported with this narrative: 43159-001 (280-150665-1), (160-42600-C-4-A), (160-42600-C-5-A), and (160-42600-C-5-B DU).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-150736-1
SDG: 43164

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL
5030C	Purge and Trap	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-150736-1
SDG: 43164

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-150736-1	43164-001	Water	07/09/21 12:10	07/13/21 09:10
280-150736-2	43164-002	Water	07/09/21 12:15	07/13/21 09:10
280-150736-3	43164-003	Water	07/09/21 10:00	07/13/21 09:10

Method: 8260C - Volatile Organic Compounds (GCMS)

Client Sample ID: 43164-001
Date Collected: 07/09/21 12:10
Date Received: 07/13/21 09:10

Lab Sample ID: 280-150736-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			07/20/21 17:39	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			07/20/21 17:39	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			07/20/21 17:39	1
Bromoform	0.50	U	0.50	0.092	ug/L			07/20/21 17:39	1
Bromomethane	0.50	U	0.50	0.27	ug/L			07/20/21 17:39	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			07/20/21 17:39	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			07/20/21 17:39	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			07/20/21 17:39	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			07/20/21 17:39	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			07/20/21 17:39	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			07/20/21 17:39	1
Chloroethane	0.50	U	0.50	0.14	ug/L			07/20/21 17:39	1
Chloroform	**0.50**		0.50	0.11	ug/L			07/20/21 17:39	1
Chloromethane	0.50	U	0.50	0.097	ug/L			07/20/21 17:39	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			07/20/21 17:39	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			07/20/21 17:39	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			07/20/21 17:39	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			07/20/21 17:39	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			07/20/21 17:39	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			07/20/21 17:39	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			07/20/21 17:39	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			07/20/21 17:39	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			07/20/21 17:39	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			07/20/21 17:39	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			07/20/21 17:39	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			07/20/21 17:39	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			07/20/21 17:39	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			07/20/21 17:39	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			07/20/21 17:39	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			07/20/21 17:39	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			07/20/21 17:39	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			07/20/21 17:39	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			07/20/21 17:39	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			07/20/21 17:39	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			07/20/21 17:39	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			07/20/21 17:39	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			07/20/21 17:39	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			07/20/21 17:39	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			07/20/21 17:39	1
Naphthalene	0.50	U	0.50	0.085	ug/L			07/20/21 17:39	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			07/20/21 17:39	1
Styrene	0.50	U	0.50	0.056	ug/L			07/20/21 17:39	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			07/20/21 17:39	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			07/20/21 17:39	1
Tetrachloroethene	**3.4**		0.50	0.072	ug/L			07/20/21 17:39	1
Toluene	0.50	U	0.50	0.041	ug/L			07/20/21 17:39	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			07/20/21 17:39	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			07/20/21 17:39	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			07/20/21 17:39	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43164-001
Date Collected: 07/09/21 12:10
Date Received: 07/13/21 09:10

Lab Sample ID: 280-150736-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			07/20/21 17:39	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			07/20/21 17:39	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			07/20/21 17:39	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			07/20/21 17:39	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			07/20/21 17:39	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			07/20/21 17:39	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/20/21 17:39	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			07/20/21 17:39	1
o-Xylene	0.50	U	0.50	0.095	ug/L			07/20/21 17:39	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			07/20/21 17:39	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			07/20/21 17:39	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			07/20/21 17:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*70 - 130*		*07/20/21 17:39*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*07/20/21 17:39*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*07/20/21 17:39*	*1*

Client Sample ID: 43164-002
Date Collected: 07/09/21 12:15
Date Received: 07/13/21 09:10

Lab Sample ID: 280-150736-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			07/20/21 18:03	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			07/20/21 18:03	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			07/20/21 18:03	1
Bromoform	0.50	U	0.50	0.092	ug/L			07/20/21 18:03	1
Bromomethane	0.50	U	0.50	0.27	ug/L			07/20/21 18:03	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			07/20/21 18:03	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			07/20/21 18:03	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			07/20/21 18:03	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			07/20/21 18:03	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			07/20/21 18:03	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			07/20/21 18:03	1
Chloroethane	0.50	U	0.50	0.14	ug/L			07/20/21 18:03	1
Chloroform	0.50	U	0.50	0.11	ug/L			07/20/21 18:03	1
Chloromethane	0.50	U	0.50	0.097	ug/L			07/20/21 18:03	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			07/20/21 18:03	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			07/20/21 18:03	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			07/20/21 18:03	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			07/20/21 18:03	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			07/20/21 18:03	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			07/20/21 18:03	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			07/20/21 18:03	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			07/20/21 18:03	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			07/20/21 18:03	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			07/20/21 18:03	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			07/20/21 18:03	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			07/20/21 18:03	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			07/20/21 18:03	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			07/20/21 18:03	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43164-002
Date Collected: 07/09/21 12:15
Date Received: 07/13/21 09:10

Lab Sample ID: 280-150736-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			07/20/21 18:03	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			07/20/21 18:03	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			07/20/21 18:03	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			07/20/21 18:03	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			07/20/21 18:03	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			07/20/21 18:03	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			07/20/21 18:03	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			07/20/21 18:03	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			07/20/21 18:03	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			07/20/21 18:03	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			07/20/21 18:03	1
Naphthalene	0.50	U	0.50	0.085	ug/L			07/20/21 18:03	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			07/20/21 18:03	1
Styrene	0.50	U	0.50	0.056	ug/L			07/20/21 18:03	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			07/20/21 18:03	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			07/20/21 18:03	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			07/20/21 18:03	1
Toluene	0.50	U	0.50	0.041	ug/L			07/20/21 18:03	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			07/20/21 18:03	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			07/20/21 18:03	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			07/20/21 18:03	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			07/20/21 18:03	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			07/20/21 18:03	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			07/20/21 18:03	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			07/20/21 18:03	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			07/20/21 18:03	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			07/20/21 18:03	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/20/21 18:03	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			07/20/21 18:03	1
o-Xylene	0.50	U	0.50	0.095	ug/L			07/20/21 18:03	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			07/20/21 18:03	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			07/20/21 18:03	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			07/20/21 18:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*		*07/20/21 18:03*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*07/20/21 18:03*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*07/20/21 18:03*	*1*

Client Sample ID: 43164-003
Date Collected: 07/09/21 10:00
Date Received: 07/13/21 09:10

Lab Sample ID: 280-150736-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			07/20/21 18:26	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			07/20/21 18:26	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			07/20/21 18:26	1
Bromoform	0.50	U	0.50	0.092	ug/L			07/20/21 18:26	1
Bromomethane	0.50	U	0.50	0.27	ug/L			07/20/21 18:26	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			07/20/21 18:26	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			07/20/21 18:26	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43164-003
Date Collected: 07/09/21 10:00
Date Received: 07/13/21 09:10

Lab Sample ID: 280-150736-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			07/20/21 18:26	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			07/20/21 18:26	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			07/20/21 18:26	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			07/20/21 18:26	1
Chloroethane	0.50	U	0.50	0.14	ug/L			07/20/21 18:26	1
Chloroform	0.50	U	0.50	0.11	ug/L			07/20/21 18:26	1
Chloromethane	0.50	U	0.50	0.097	ug/L			07/20/21 18:26	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			07/20/21 18:26	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			07/20/21 18:26	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			07/20/21 18:26	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			07/20/21 18:26	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			07/20/21 18:26	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			07/20/21 18:26	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			07/20/21 18:26	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			07/20/21 18:26	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			07/20/21 18:26	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			07/20/21 18:26	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			07/20/21 18:26	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			07/20/21 18:26	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			07/20/21 18:26	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			07/20/21 18:26	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			07/20/21 18:26	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			07/20/21 18:26	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			07/20/21 18:26	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			07/20/21 18:26	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			07/20/21 18:26	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			07/20/21 18:26	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			07/20/21 18:26	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			07/20/21 18:26	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			07/20/21 18:26	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			07/20/21 18:26	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			07/20/21 18:26	1
Naphthalene	0.50	U	0.50	0.085	ug/L			07/20/21 18:26	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			07/20/21 18:26	1
Styrene	0.50	U	0.50	0.056	ug/L			07/20/21 18:26	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			07/20/21 18:26	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			07/20/21 18:26	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			07/20/21 18:26	1
Toluene	0.50	U	0.50	0.041	ug/L			07/20/21 18:26	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			07/20/21 18:26	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			07/20/21 18:26	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			07/20/21 18:26	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			07/20/21 18:26	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			07/20/21 18:26	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			07/20/21 18:26	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			07/20/21 18:26	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			07/20/21 18:26	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			07/20/21 18:26	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/20/21 18:26	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43164-003
Date Collected: 07/09/21 10:00
Date Received: 07/13/21 09:10

Lab Sample ID: 280-150736-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			07/20/21 18:26	1
o-Xylene	0.50	U	0.50	0.095	ug/L			07/20/21 18:26	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			07/20/21 18:26	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			07/20/21 18:26	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			07/20/21 18:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 130*		*07/20/21 18:26*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*07/20/21 18:26*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*07/20/21 18:26*	*1*

Method: 6020A - Metals (ICP/MS)

Client Sample ID: 43164-002
Date Collected: 07/09/21 12:15
Date Received: 07/13/21 09:10

Lab Sample ID: 280-150736-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		07/19/21 13:21	07/21/21 13:01	2

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-150736-1
SDG: 43164

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-150736-1	43164-001	113	98	103
280-150736-2	43164-002	108	99	103
280-150736-3	43164-003	109	101	103
LCS 280-543625/3	Lab Control Sample	100	105	104
LCSD 280-543625/4	Lab Control Sample Dup	99	104	104
MB 280-543625/5	Method Blank	108	97	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 280-543625/5
Matrix: Water
Analysis Batch: 543625

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			07/20/21 10:36	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			07/20/21 10:36	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			07/20/21 10:36	1
Bromoform	0.50	U	0.50	0.092	ug/L			07/20/21 10:36	1
Bromomethane	0.50	U	0.50	0.27	ug/L			07/20/21 10:36	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			07/20/21 10:36	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			07/20/21 10:36	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			07/20/21 10:36	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			07/20/21 10:36	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			07/20/21 10:36	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			07/20/21 10:36	1
Chloroethane	0.50	U	0.50	0.14	ug/L			07/20/21 10:36	1
Chloroform	0.50	U	0.50	0.11	ug/L			07/20/21 10:36	1
Chloromethane	0.50	U	0.50	0.097	ug/L			07/20/21 10:36	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			07/20/21 10:36	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			07/20/21 10:36	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			07/20/21 10:36	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			07/20/21 10:36	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			07/20/21 10:36	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			07/20/21 10:36	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			07/20/21 10:36	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			07/20/21 10:36	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			07/20/21 10:36	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			07/20/21 10:36	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			07/20/21 10:36	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			07/20/21 10:36	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			07/20/21 10:36	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			07/20/21 10:36	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			07/20/21 10:36	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			07/20/21 10:36	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			07/20/21 10:36	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			07/20/21 10:36	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			07/20/21 10:36	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			07/20/21 10:36	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			07/20/21 10:36	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			07/20/21 10:36	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			07/20/21 10:36	1
Methylene Chloride	0.183	J	0.50	0.098	ug/L			07/20/21 10:36	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			07/20/21 10:36	1
Naphthalene	0.50	U	0.50	0.085	ug/L			07/20/21 10:36	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			07/20/21 10:36	1
Styrene	0.50	U	0.50	0.056	ug/L			07/20/21 10:36	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			07/20/21 10:36	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			07/20/21 10:36	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			07/20/21 10:36	1
Toluene	0.50	U	0.50	0.041	ug/L			07/20/21 10:36	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			07/20/21 10:36	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			07/20/21 10:36	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-543625/5
Matrix: Water
Analysis Batch: 543625

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			07/20/21 10:36	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			07/20/21 10:36	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			07/20/21 10:36	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			07/20/21 10:36	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			07/20/21 10:36	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			07/20/21 10:36	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			07/20/21 10:36	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/20/21 10:36	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			07/20/21 10:36	1
o-Xylene	0.50	U	0.50	0.095	ug/L			07/20/21 10:36	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			07/20/21 10:36	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			07/20/21 10:36	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			07/20/21 10:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*		*07/20/21 10:36*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*07/20/21 10:36*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*07/20/21 10:36*	*1*

Lab Sample ID: LCS 280-543625/3
Matrix: Water
Analysis Batch: 543625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	24.1		ug/L		121	70 - 130
Bromochloromethane	20.0	19.7		ug/L		98	70 - 130
Bromodichloromethane	20.0	23.4		ug/L		117	70 - 130
Bromoform	20.0	22.2		ug/L		111	70 - 130
Bromomethane	20.0	20.1		ug/L		101	70 - 130
n-Butylbenzene	20.0	23.6		ug/L		118	70 - 130
sec-Butylbenzene	20.0	22.5		ug/L		113	70 - 130
tert-Butylbenzene	20.0	22.8		ug/L		114	70 - 130
Carbon tetrachloride	20.0	21.8		ug/L		109	70 - 130
Chlorobenzene	20.0	22.9		ug/L		114	70 - 130
Dibromochloromethane	20.0	25.2		ug/L		126	70 - 130
Chloroethane	20.0	20.5		ug/L		102	70 - 130
Chloroform	20.0	21.4		ug/L		107	70 - 130
Chloromethane	20.0	20.1		ug/L		100	70 - 130
2-Chlorotoluene	20.0	23.1		ug/L		116	70 - 130
4-Chlorotoluene	20.0	22.7		ug/L		114	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	21.8		ug/L		109	70 - 130
Dibromomethane	20.0	21.3		ug/L		107	70 - 130
1,2-Dichlorobenzene	20.0	22.2		ug/L		111	70 - 130
1,3-Dichlorobenzene	20.0	21.9		ug/L		109	70 - 130
1,4-Dichlorobenzene	20.0	21.7		ug/L		109	70 - 130
Dichlorodifluoromethane	20.0	21.0		ug/L		105	70 - 130
1,1-Dichloroethane	20.0	22.9		ug/L		115	70 - 130
1,2-Dichloroethane	20.0	22.6		ug/L		113	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-543625/3
Matrix: Water
Analysis Batch: 543625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	20.0	20.8		ug/L		104	70 - 130
trans-1,2-Dichloroethene	20.0	19.9		ug/L		100	70 - 130
1,1-Dichloroethene	20.0	18.8		ug/L		94	70 - 130
1,2-Dichloropropane	20.0	23.8		ug/L		119	70 - 130
1,3-Dichloropropane	20.0	24.8		ug/L		124	70 - 130
2,2-Dichloropropane	20.0	21.2		ug/L		106	70 - 130
cis-1,3-Dichloropropene	20.0	25.0		ug/L		125	70 - 130
trans-1,3-Dichloropropene	20.0	23.4		ug/L		117	70 - 130
1,1-Dichloropropene	20.0	22.2		ug/L		111	70 - 130
Ethylbenzene	20.0	23.7		ug/L		119	70 - 130
Hexachlorobutadiene	20.0	20.9		ug/L		105	70 - 130
Isopropylbenzene	20.0	22.6		ug/L		113	70 - 130
4-Isopropyltoluene	20.0	23.1		ug/L		115	70 - 130
Methylene Chloride	20.0	20.3		ug/L		102	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	20.8		ug/L		104	70 - 130
Naphthalene	20.0	20.0		ug/L		100	70 - 130
N-Propylbenzene	20.0	23.9		ug/L		119	70 - 130
Styrene	20.0	24.4		ug/L		122	70 - 130
1,1,1,2-Tetrachloroethane	20.0	24.9		ug/L		124	70 - 130
1,1,2,2-Tetrachloroethane	20.0	23.1		ug/L		115	70 - 130
Tetrachloroethene	20.0	21.7		ug/L		109	70 - 130
Toluene	20.0	22.3		ug/L		112	70 - 130
1,2,3-Trichlorobenzene	20.0	20.9		ug/L		104	70 - 130
1,2,4-Trichlorobenzene	20.0	20.6		ug/L		103	70 - 130
1,1,1-Trichloroethane	20.0	20.7		ug/L		104	70 - 130
1,1,2-Trichloroethane	20.0	22.7		ug/L		113	70 - 130
Trichloroethene	20.0	22.1		ug/L		110	70 - 130
Trichlorofluoromethane	20.0	19.8		ug/L		99	70 - 130
1,2,3-Trichloropropane	20.0	22.5		ug/L		113	70 - 130
1,2,4-Trimethylbenzene	20.0	23.7		ug/L		119	70 - 130
1,3,5-Trimethylbenzene	20.0	23.7		ug/L		118	70 - 130
Vinyl chloride	20.0	22.7		ug/L		113	70 - 130
m-Xylene & p-Xylene	20.0	23.3		ug/L		116	70 - 130
o-Xylene	20.0	24.0		ug/L		120	70 - 130
Xylenes, Total	40.0	47.3		ug/L		118	70 - 130
Bromobenzene	20.0	22.1		ug/L		111	70 - 130
1,2-Dibromoethane	20.0	23.4		ug/L		117	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*
Toluene-d8 (Surr)	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-543625/4
Matrix: Water
Analysis Batch: 543625

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	24.9		ug/L		125	70 - 130	3	20
Bromochloromethane	20.0	19.8		ug/L		99	70 - 130	1	20
Bromodichloromethane	20.0	23.5		ug/L		118	70 - 130	0	20
Bromoform	20.0	22.5		ug/L		112	70 - 130	1	20
Bromomethane	20.0	23.9		ug/L		119	70 - 130	17	20
n-Butylbenzene	20.0	24.9		ug/L		124	70 - 130	5	20
sec-Butylbenzene	20.0	23.9		ug/L		120	70 - 130	6	20
tert-Butylbenzene	20.0	24.2		ug/L		121	70 - 130	6	20
Carbon tetrachloride	20.0	23.6		ug/L		118	70 - 130	8	20
Chlorobenzene	20.0	23.3		ug/L		116	70 - 130	2	20
Dibromochloromethane	20.0	25.3		ug/L		126	70 - 130	0	20
Chloroethane	20.0	23.2		ug/L		116	70 - 130	13	20
Chloroform	20.0	22.2		ug/L		111	70 - 130	4	20
Chloromethane	20.0	20.8		ug/L		104	70 - 130	4	20
2-Chlorotoluene	20.0	24.1		ug/L		121	70 - 130	4	20
4-Chlorotoluene	20.0	23.7		ug/L		119	70 - 130	4	20
1,2-Dibromo-3-Chloropropane	20.0	22.6		ug/L		113	70 - 130	4	20
Dibromomethane	20.0	21.7		ug/L		109	70 - 130	2	20
1,2-Dichlorobenzene	20.0	22.9		ug/L		115	70 - 130	3	20
1,3-Dichlorobenzene	20.0	22.8		ug/L		114	70 - 130	4	20
1,4-Dichlorobenzene	20.0	22.4		ug/L		112	70 - 130	3	20
Dichlorodifluoromethane	20.0	22.7		ug/L		113	70 - 130	8	20
1,1-Dichloroethane	20.0	23.2		ug/L		116	70 - 130	1	20
1,2-Dichloroethane	20.0	22.7		ug/L		114	70 - 130	1	20
cis-1,2-Dichloroethene	20.0	21.5		ug/L		107	70 - 130	3	20
trans-1,2-Dichloroethene	20.0	20.9		ug/L		105	70 - 130	5	20
1,1-Dichloroethene	20.0	19.9		ug/L		100	70 - 130	6	20
1,2-Dichloropropane	20.0	24.5		ug/L		123	70 - 130	3	20
1,3-Dichloropropane	20.0	24.9		ug/L		124	70 - 130	0	20
2,2-Dichloropropane	20.0	22.6		ug/L		113	70 - 130	6	20
cis-1,3-Dichloropropene	20.0	25.3		ug/L		127	70 - 130	1	20
trans-1,3-Dichloropropene	20.0	23.6		ug/L		118	70 - 130	1	20
1,1-Dichloropropene	20.0	24.0		ug/L		120	70 - 130	8	20
Ethylbenzene	20.0	24.3		ug/L		121	70 - 130	2	20
Hexachlorobutadiene	20.0	21.8		ug/L		109	70 - 130	4	20
Isopropylbenzene	20.0	24.1		ug/L		121	70 - 130	6	20
4-Isopropyltoluene	20.0	24.3		ug/L		122	70 - 130	5	20
Methylene Chloride	20.0	20.8		ug/L		104	70 - 130	2	20
Methyl-t-Butyl Ether (MTBE)	20.0	22.1		ug/L		111	70 - 130	6	20
Naphthalene	20.0	20.8		ug/L		104	70 - 130	4	20
N-Propylbenzene	20.0	25.1		ug/L		126	70 - 130	5	20
Styrene	20.0	24.5		ug/L		123	70 - 130	0	20
1,1,1,2-Tetrachloroethane	20.0	24.8		ug/L		124	70 - 130	0	20
1,1,2,2-Tetrachloroethane	20.0	23.5		ug/L		118	70 - 130	2	20
Tetrachloroethene	20.0	23.0		ug/L		115	70 - 130	6	20
Toluene	20.0	23.1		ug/L		116	70 - 130	3	20
1,2,3-Trichlorobenzene	20.0	21.8		ug/L		109	70 - 130	5	20
1,2,4-Trichlorobenzene	20.0	20.9		ug/L		105	70 - 130	2	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-543625/4
Matrix: Water
Analysis Batch: 543625

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	22.3		ug/L		111	70 - 130	7	20
1,1,2-Trichloroethane			20.0	22.8		ug/L		114	70 - 130	0	20
Trichloroethene			20.0	23.4		ug/L		117	70 - 130	6	20
Trichlorofluoromethane			20.0	22.0		ug/L		110	70 - 130	10	20
1,2,3-Trichloropropane			20.0	23.1		ug/L		116	70 - 130	2	20
1,2,4-Trimethylbenzene			20.0	24.9		ug/L		125	70 - 130	5	20
1,3,5-Trimethylbenzene			20.0	24.8		ug/L		124	70 - 130	5	20
Vinyl chloride			20.0	24.1		ug/L		121	70 - 130	6	20
m-Xylene & p-Xylene			20.0	24.3		ug/L		121	70 - 130	4	20
o-Xylene			20.0	24.3		ug/L		122	70 - 130	1	20
Xylenes, Total			40.0	48.6		ug/L		122	70 - 130	3	20
Bromobenzene			20.0	22.6		ug/L		113	70 - 130	2	20
1,2-Dibromoethane			20.0	23.5		ug/L		118	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-519178/1-A
Matrix: Water
Analysis Batch: 519659

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 519178

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		07/19/21 13:21	07/21/21 12:09	2

Lab Sample ID: LCS 160-519178/2-A
Matrix: Water
Analysis Batch: 519659

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 519178

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	186		ug/L		93	82 - 116		

Lab Sample ID: 160-42750-A-6-B MS
Matrix: Water
Analysis Batch: 519659

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 519178

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	192		ug/L		96	82 - 116		

Lab Sample ID: 160-42750-A-6-C MSD
Matrix: Water
Analysis Batch: 519659

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 519178

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	190		ug/L		95	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-150736-1
SDG: 43164

GC/MS VOA

Analysis Batch: 543625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-150736-1	43164-001	Total/NA	Water	8260C	
280-150736-2	43164-002	Total/NA	Water	8260C	
280-150736-3	43164-003	Total/NA	Water	8260C	
MB 280-543625/5	Method Blank	Total/NA	Water	8260C	
LCS 280-543625/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-543625/4	Lab Control Sample Dup	Total/NA	Water	8260C	

Metals

Prep Batch: 519178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-150736-2	43164-002	Total/NA	Water	3010A	
MB 160-519178/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-519178/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-42750-A-6-B MS	Matrix Spike	Dissolved	Water	3010A	
160-42750-A-6-C MSD	Matrix Spike Duplicate	Dissolved	Water	3010A	

Analysis Batch: 519659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-150736-2	43164-002	Total/NA	Water	6020A	519178
MB 160-519178/1-A	Method Blank	Total/NA	Water	6020A	519178
LCS 160-519178/2-A	Lab Control Sample	Total/NA	Water	6020A	519178
160-42750-A-6-B MS	Matrix Spike	Dissolved	Water	6020A	519178
160-42750-A-6-C MSD	Matrix Spike Duplicate	Dissolved	Water	6020A	519178

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-150736-1
SDG: 43164

Client Sample ID: 43164-001
Date Collected: 07/09/21 12:10
Date Received: 07/13/21 09:10

Lab Sample ID: 280-150736-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	543625	07/20/21 17:39	TAW	TAL DEN

Client Sample ID: 43164-002
Date Collected: 07/09/21 12:15
Date Received: 07/13/21 09:10

Lab Sample ID: 280-150736-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	543625	07/20/21 18:03	TAW	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	519178	07/19/21 13:21	CJJ	TAL SL
Total/NA	Analysis	6020A		2			519659	07/21/21 13:01	CJJ	TAL SL

Client Sample ID: 43164-003
Date Collected: 07/09/21 10:00
Date Received: 07/13/21 09:10

Lab Sample ID: 280-150736-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	543625	07/20/21 18:26	TAW	TAL DEN

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-150736-1
SDG: 43164

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-02-21
A2LA	ISO/IEC 17025	2907.01	11-02-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21 *
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	07-01-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

Laboratory: Eurofins TestAmerica, St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11616	04-01-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3010A	Water	Thallium

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 43164

Requires EDD X

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext: 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Mehta	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	8260 EPA 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	7/9/21	1210	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1215	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		↓	W	RTW-1 Effluent	250 ML	P	1	HNO3												
003	E	G	TB-1	0		1000	W	Trip Blank	40 ML	SC	3	HCL					X					X		

280-150736 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. Mehta	Print	Print
Signature	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Adam Dubyk 07/13/2021 0910	Print	Print
Signature	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- X Disposal by Lab
- ☐ Archive For ____ Months

Data Package: ☐ Full X Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- X 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

2.3 IR12 CH6.4

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 280-577039.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 280-150736-1
Address: 13715 Rider Trail North, .	Due Date Requested: 7/26/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A_DOD5/3010A_2% (MOD) Chromium, Thallium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
43164-002 (280-150736-2)	7/9/21	12:15 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Level 1 radioactive	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time	Company		Date/Time	Company
Relinquished by: [signature]	7/15/21 14:00	ETA DEN	Received by: FED EX		
Relinquished by: FED EX			Received by: Dina Worthington	7/16/21 1300	GMSR
Relinquished by:			Received by:		

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-150736-1
SDG Number: 43164

Login Number: 150736
List Number: 1
Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-150736-1
SDG Number: 43164

Login Number: 150736
List Number: 2
Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis
List Creation: 07/16/21 06:26 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-151019-1
Laboratory Sample Delivery Group: 43193
Client Project/Site: BNL - OU3 B-96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
7/29/2021 3:42:07 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

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www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B-96

Job ID: 280-151019-1
SDG: 43193

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-151019-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B-96

Report Number: 280-151019-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 7/21/2021 9:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.5º C.

VOLATILE ORGANIC COMPOUNDS

Samples 43193-001 (280-151019-1), 43193-002 (280-151019-2), 43193-003 (280-151019-3), 43193-004 (280-151019-4), 43193-005 (280-151019-5) and 43193-006 (280-151019-6) were analyzed for volatile organic compounds in accordance with SW 846 Method 8260C.

Job ID: 280-151019-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

The samples were analyzed on 07/27/2021.

Analytical Batch 280-544427:
Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD was analyzed to demonstrate batch precision.

1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene were detected in method blank MB 280-544427/11 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 43193-002 (280-151019-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 07/26/2021 and analyzed on 07/28/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B-96

Job ID: 280-151019-1
SDG: 43193

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL
5030C	Purge and Trap	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B-96

Job ID: 280-151019-1
SDG: 43193

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-151019-1	43193-001	Water	07/19/21 13:45	07/21/21 09:20
280-151019-2	43193-002	Water	07/19/21 13:45	07/21/21 09:20
280-151019-3	43193-003	Water	07/19/21 14:05	07/21/21 09:20
280-151019-4	43193-004	Water	07/19/21 14:07	07/21/21 09:20
280-151019-5	43193-005	Water	07/19/21 14:10	07/21/21 09:20
280-151019-6	43193-006	Water	07/19/21 09:00	07/21/21 09:20

Method: 8260C - Volatile Organic Compounds (GCMS)

Client Sample ID: 43193-001
Date Collected: 07/19/21 13:45
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			07/27/21 19:10	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			07/27/21 19:10	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			07/27/21 19:10	1
Bromoform	0.50	U	0.50	0.092	ug/L			07/27/21 19:10	1
Bromomethane	0.50	U	0.50	0.27	ug/L			07/27/21 19:10	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			07/27/21 19:10	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			07/27/21 19:10	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 19:10	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			07/27/21 19:10	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			07/27/21 19:10	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			07/27/21 19:10	1
Chloroethane	0.50	U	0.50	0.14	ug/L			07/27/21 19:10	1
Chloroform	**0.45**	**J**	0.50	0.11	ug/L			07/27/21 19:10	1
Chloromethane	0.50	U	0.50	0.097	ug/L			07/27/21 19:10	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			07/27/21 19:10	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			07/27/21 19:10	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			07/27/21 19:10	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			07/27/21 19:10	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			07/27/21 19:10	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			07/27/21 19:10	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			07/27/21 19:10	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			07/27/21 19:10	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			07/27/21 19:10	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			07/27/21 19:10	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			07/27/21 19:10	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			07/27/21 19:10	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			07/27/21 19:10	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			07/27/21 19:10	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			07/27/21 19:10	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			07/27/21 19:10	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			07/27/21 19:10	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			07/27/21 19:10	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			07/27/21 19:10	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 19:10	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			07/27/21 19:10	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			07/27/21 19:10	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			07/27/21 19:10	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			07/27/21 19:10	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			07/27/21 19:10	1
Naphthalene	0.50	U	0.50	0.085	ug/L			07/27/21 19:10	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			07/27/21 19:10	1
Styrene	0.50	U	0.50	0.056	ug/L			07/27/21 19:10	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			07/27/21 19:10	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			07/27/21 19:10	1
Tetrachloroethene	**3.1**		0.50	0.072	ug/L			07/27/21 19:10	1
Toluene	0.50	U	0.50	0.041	ug/L			07/27/21 19:10	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 19:10	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			07/27/21 19:10	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			07/27/21 19:10	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43193-001
Date Collected: 07/19/21 13:45
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			07/27/21 19:10	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			07/27/21 19:10	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			07/27/21 19:10	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			07/27/21 19:10	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			07/27/21 19:10	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			07/27/21 19:10	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/27/21 19:10	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			07/27/21 19:10	1
o-Xylene	0.50	U	0.50	0.095	ug/L			07/27/21 19:10	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			07/27/21 19:10	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 19:10	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			07/27/21 19:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*		*07/27/21 19:10*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*07/27/21 19:10*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*07/27/21 19:10*	*1*

Client Sample ID: 43193-002
Date Collected: 07/19/21 13:45
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			07/27/21 19:33	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			07/27/21 19:33	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			07/27/21 19:33	1
Bromoform	0.50	U	0.50	0.092	ug/L			07/27/21 19:33	1
Bromomethane	0.50	U	0.50	0.27	ug/L			07/27/21 19:33	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			07/27/21 19:33	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			07/27/21 19:33	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 19:33	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			07/27/21 19:33	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			07/27/21 19:33	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			07/27/21 19:33	1
Chloroethane	0.50	U	0.50	0.14	ug/L			07/27/21 19:33	1
Chloroform	0.50	U	0.50	0.11	ug/L			07/27/21 19:33	1
Chloromethane	0.50	U	0.50	0.097	ug/L			07/27/21 19:33	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			07/27/21 19:33	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			07/27/21 19:33	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			07/27/21 19:33	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			07/27/21 19:33	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			07/27/21 19:33	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			07/27/21 19:33	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			07/27/21 19:33	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			07/27/21 19:33	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			07/27/21 19:33	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			07/27/21 19:33	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			07/27/21 19:33	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			07/27/21 19:33	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			07/27/21 19:33	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			07/27/21 19:33	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43193-002
Date Collected: 07/19/21 13:45
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			07/27/21 19:33	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			07/27/21 19:33	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			07/27/21 19:33	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			07/27/21 19:33	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			07/27/21 19:33	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 19:33	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			07/27/21 19:33	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			07/27/21 19:33	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			07/27/21 19:33	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			07/27/21 19:33	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			07/27/21 19:33	1
Naphthalene	0.50	U	0.50	0.085	ug/L			07/27/21 19:33	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			07/27/21 19:33	1
Styrene	0.50	U	0.50	0.056	ug/L			07/27/21 19:33	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			07/27/21 19:33	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			07/27/21 19:33	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			07/27/21 19:33	1
Toluene	0.50	U	0.50	0.041	ug/L			07/27/21 19:33	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 19:33	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			07/27/21 19:33	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			07/27/21 19:33	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			07/27/21 19:33	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			07/27/21 19:33	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			07/27/21 19:33	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			07/27/21 19:33	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			07/27/21 19:33	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			07/27/21 19:33	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/27/21 19:33	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			07/27/21 19:33	1
o-Xylene	0.50	U	0.50	0.095	ug/L			07/27/21 19:33	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			07/27/21 19:33	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 19:33	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			07/27/21 19:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*07/27/21 19:33*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*07/27/21 19:33*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*07/27/21 19:33*	*1*

Client Sample ID: 43193-003
Date Collected: 07/19/21 14:05
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			07/27/21 19:56	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			07/27/21 19:56	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			07/27/21 19:56	1
Bromoform	0.50	U	0.50	0.092	ug/L			07/27/21 19:56	1
Bromomethane	0.50	U	0.50	0.27	ug/L			07/27/21 19:56	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			07/27/21 19:56	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			07/27/21 19:56	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43193-003
Date Collected: 07/19/21 14:05
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 19:56	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			07/27/21 19:56	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			07/27/21 19:56	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			07/27/21 19:56	1
Chloroethane	0.50	U	0.50	0.14	ug/L			07/27/21 19:56	1
Chloroform	**1.3**		0.50	0.11	ug/L			07/27/21 19:56	1
Chloromethane	0.50	U	0.50	0.097	ug/L			07/27/21 19:56	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			07/27/21 19:56	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			07/27/21 19:56	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			07/27/21 19:56	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			07/27/21 19:56	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			07/27/21 19:56	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			07/27/21 19:56	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			07/27/21 19:56	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			07/27/21 19:56	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			07/27/21 19:56	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			07/27/21 19:56	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			07/27/21 19:56	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			07/27/21 19:56	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			07/27/21 19:56	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			07/27/21 19:56	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			07/27/21 19:56	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			07/27/21 19:56	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			07/27/21 19:56	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			07/27/21 19:56	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			07/27/21 19:56	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 19:56	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			07/27/21 19:56	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			07/27/21 19:56	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			07/27/21 19:56	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			07/27/21 19:56	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			07/27/21 19:56	1
Naphthalene	0.50	U	0.50	0.085	ug/L			07/27/21 19:56	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			07/27/21 19:56	1
Styrene	0.50	U	0.50	0.056	ug/L			07/27/21 19:56	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			07/27/21 19:56	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			07/27/21 19:56	1
Tetrachloroethene	**0.31**	**J**	0.50	0.072	ug/L			07/27/21 19:56	1
Toluene	0.50	U	0.50	0.041	ug/L			07/27/21 19:56	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 19:56	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			07/27/21 19:56	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			07/27/21 19:56	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			07/27/21 19:56	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			07/27/21 19:56	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			07/27/21 19:56	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			07/27/21 19:56	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			07/27/21 19:56	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			07/27/21 19:56	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/27/21 19:56	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43193-003
Date Collected: 07/19/21 14:05
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			07/27/21 19:56	1
o-Xylene	0.50	U	0.50	0.095	ug/L			07/27/21 19:56	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			07/27/21 19:56	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 19:56	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			07/27/21 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 130*		*07/27/21 19:56*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*07/27/21 19:56*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*07/27/21 19:56*	*1*

Client Sample ID: 43193-004
Date Collected: 07/19/21 14:07
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-4
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			07/27/21 20:20	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			07/27/21 20:20	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			07/27/21 20:20	1
Bromoform	0.50	U	0.50	0.092	ug/L			07/27/21 20:20	1
Bromomethane	0.50	U	0.50	0.27	ug/L			07/27/21 20:20	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			07/27/21 20:20	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			07/27/21 20:20	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 20:20	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			07/27/21 20:20	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			07/27/21 20:20	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			07/27/21 20:20	1
Chloroethane	0.50	U	0.50	0.14	ug/L			07/27/21 20:20	1
Chloroform	**1.0**		0.50	0.11	ug/L			07/27/21 20:20	1
Chloromethane	0.50	U	0.50	0.097	ug/L			07/27/21 20:20	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			07/27/21 20:20	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			07/27/21 20:20	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			07/27/21 20:20	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			07/27/21 20:20	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			07/27/21 20:20	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			07/27/21 20:20	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			07/27/21 20:20	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			07/27/21 20:20	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			07/27/21 20:20	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			07/27/21 20:20	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			07/27/21 20:20	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			07/27/21 20:20	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			07/27/21 20:20	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			07/27/21 20:20	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			07/27/21 20:20	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			07/27/21 20:20	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			07/27/21 20:20	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			07/27/21 20:20	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			07/27/21 20:20	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 20:20	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			07/27/21 20:20	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43193-004
Date Collected: 07/19/21 14:07
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-4
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			07/27/21 20:20	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			07/27/21 20:20	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			07/27/21 20:20	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			07/27/21 20:20	1
Naphthalene	0.50	U	0.50	0.085	ug/L			07/27/21 20:20	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			07/27/21 20:20	1
Styrene	0.50	U	0.50	0.056	ug/L			07/27/21 20:20	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			07/27/21 20:20	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			07/27/21 20:20	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			07/27/21 20:20	1
Toluene	0.50	U	0.50	0.041	ug/L			07/27/21 20:20	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 20:20	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			07/27/21 20:20	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			07/27/21 20:20	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			07/27/21 20:20	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			07/27/21 20:20	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			07/27/21 20:20	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			07/27/21 20:20	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			07/27/21 20:20	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			07/27/21 20:20	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/27/21 20:20	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			07/27/21 20:20	1
o-Xylene	0.50	U	0.50	0.095	ug/L			07/27/21 20:20	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			07/27/21 20:20	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 20:20	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			07/27/21 20:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*07/27/21 20:20*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*07/27/21 20:20*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*07/27/21 20:20*	*1*

Client Sample ID: 43193-005
Date Collected: 07/19/21 14:10
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-5
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			07/27/21 20:43	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			07/27/21 20:43	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			07/27/21 20:43	1
Bromoform	0.50	U	0.50	0.092	ug/L			07/27/21 20:43	1
Bromomethane	0.50	U	0.50	0.27	ug/L			07/27/21 20:43	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			07/27/21 20:43	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			07/27/21 20:43	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 20:43	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			07/27/21 20:43	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			07/27/21 20:43	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			07/27/21 20:43	1
Chloroethane	0.50	U	0.50	0.14	ug/L			07/27/21 20:43	1
Chloroform	0.50	U	0.50	0.11	ug/L			07/27/21 20:43	1
Chloromethane	0.50	U	0.50	0.097	ug/L			07/27/21 20:43	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43193-005
Date Collected: 07/19/21 14:10
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-5
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			07/27/21 20:43	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			07/27/21 20:43	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			07/27/21 20:43	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			07/27/21 20:43	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			07/27/21 20:43	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			07/27/21 20:43	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			07/27/21 20:43	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			07/27/21 20:43	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			07/27/21 20:43	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			07/27/21 20:43	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			07/27/21 20:43	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			07/27/21 20:43	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			07/27/21 20:43	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			07/27/21 20:43	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			07/27/21 20:43	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			07/27/21 20:43	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			07/27/21 20:43	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			07/27/21 20:43	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			07/27/21 20:43	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 20:43	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			07/27/21 20:43	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			07/27/21 20:43	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			07/27/21 20:43	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			07/27/21 20:43	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			07/27/21 20:43	1
Naphthalene	0.50	U	0.50	0.085	ug/L			07/27/21 20:43	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			07/27/21 20:43	1
Styrene	0.50	U	0.50	0.056	ug/L			07/27/21 20:43	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			07/27/21 20:43	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			07/27/21 20:43	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			07/27/21 20:43	1
Toluene	0.50	U	0.50	0.041	ug/L			07/27/21 20:43	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 20:43	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			07/27/21 20:43	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			07/27/21 20:43	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			07/27/21 20:43	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			07/27/21 20:43	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			07/27/21 20:43	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			07/27/21 20:43	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			07/27/21 20:43	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			07/27/21 20:43	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/27/21 20:43	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			07/27/21 20:43	1
o-Xylene	0.50	U	0.50	0.095	ug/L			07/27/21 20:43	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			07/27/21 20:43	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 20:43	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			07/27/21 20:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*07/27/21 20:43*	*1*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43193-005
Date Collected: 07/19/21 14:10
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-5
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*70 - 130*		*07/27/21 20:43*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*07/27/21 20:43*	*1*

Client Sample ID: 43193-006
Date Collected: 07/19/21 09:00
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-6
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			07/27/21 21:06	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			07/27/21 21:06	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			07/27/21 21:06	1
Bromoform	0.50	U	0.50	0.092	ug/L			07/27/21 21:06	1
Bromomethane	0.50	U	0.50	0.27	ug/L			07/27/21 21:06	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			07/27/21 21:06	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			07/27/21 21:06	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 21:06	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			07/27/21 21:06	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			07/27/21 21:06	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			07/27/21 21:06	1
Chloroethane	0.50	U	0.50	0.14	ug/L			07/27/21 21:06	1
Chloroform	0.50	U	0.50	0.11	ug/L			07/27/21 21:06	1
Chloromethane	0.50	U	0.50	0.097	ug/L			07/27/21 21:06	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			07/27/21 21:06	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			07/27/21 21:06	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			07/27/21 21:06	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			07/27/21 21:06	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			07/27/21 21:06	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			07/27/21 21:06	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			07/27/21 21:06	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			07/27/21 21:06	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			07/27/21 21:06	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			07/27/21 21:06	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			07/27/21 21:06	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			07/27/21 21:06	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			07/27/21 21:06	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			07/27/21 21:06	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			07/27/21 21:06	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			07/27/21 21:06	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			07/27/21 21:06	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			07/27/21 21:06	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			07/27/21 21:06	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 21:06	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			07/27/21 21:06	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			07/27/21 21:06	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			07/27/21 21:06	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			07/27/21 21:06	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			07/27/21 21:06	1
Naphthalene	0.50	U	0.50	0.085	ug/L			07/27/21 21:06	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			07/27/21 21:06	1
Styrene	0.50	U	0.50	0.056	ug/L			07/27/21 21:06	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43193-006
Date Collected: 07/19/21 09:00
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-6
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			07/27/21 21:06	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			07/27/21 21:06	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			07/27/21 21:06	1
Toluene	0.50	U	0.50	0.041	ug/L			07/27/21 21:06	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 21:06	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			07/27/21 21:06	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			07/27/21 21:06	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			07/27/21 21:06	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			07/27/21 21:06	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			07/27/21 21:06	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			07/27/21 21:06	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			07/27/21 21:06	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			07/27/21 21:06	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/27/21 21:06	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			07/27/21 21:06	1
o-Xylene	0.50	U	0.50	0.095	ug/L			07/27/21 21:06	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			07/27/21 21:06	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 21:06	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			07/27/21 21:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 130*		*07/27/21 21:06*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*07/27/21 21:06*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*07/27/21 21:06*	*1*

Method: 6020A - Metals (ICP/MS)

Client Sample ID: 43193-002
Date Collected: 07/19/21 13:45
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		07/26/21 14:47	07/28/21 00:49	2

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B-96

Job ID: 280-151019-1
SDG: 43193

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-151019-1	43193-001	108	99	97
280-151019-2	43193-002	110	99	97
280-151019-3	43193-003	109	99	97
280-151019-4	43193-004	110	101	98
280-151019-5	43193-005	110	101	97
280-151019-6	43193-006	111	102	97
LCS 280-544427/9	Lab Control Sample	96	101	100
LCSD 280-544427/10	Lab Control Sample Dup	93	102	102
MB 280-544427/11	Method Blank	99	101	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 280-544427/11
Matrix: Water
Analysis Batch: 544427

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			07/27/21 14:47	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			07/27/21 14:47	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			07/27/21 14:47	1
Bromoform	0.50	U	0.50	0.092	ug/L			07/27/21 14:47	1
Bromomethane	0.50	U	0.50	0.27	ug/L			07/27/21 14:47	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			07/27/21 14:47	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			07/27/21 14:47	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 14:47	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			07/27/21 14:47	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			07/27/21 14:47	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			07/27/21 14:47	1
Chloroethane	0.50	U	0.50	0.14	ug/L			07/27/21 14:47	1
Chloroform	0.50	U	0.50	0.11	ug/L			07/27/21 14:47	1
Chloromethane	0.50	U	0.50	0.097	ug/L			07/27/21 14:47	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			07/27/21 14:47	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			07/27/21 14:47	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			07/27/21 14:47	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			07/27/21 14:47	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			07/27/21 14:47	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			07/27/21 14:47	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			07/27/21 14:47	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			07/27/21 14:47	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			07/27/21 14:47	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			07/27/21 14:47	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			07/27/21 14:47	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			07/27/21 14:47	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			07/27/21 14:47	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			07/27/21 14:47	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			07/27/21 14:47	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			07/27/21 14:47	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			07/27/21 14:47	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			07/27/21 14:47	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			07/27/21 14:47	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			07/27/21 14:47	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			07/27/21 14:47	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			07/27/21 14:47	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			07/27/21 14:47	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			07/27/21 14:47	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			07/27/21 14:47	1
Naphthalene	0.50	U	0.50	0.085	ug/L			07/27/21 14:47	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			07/27/21 14:47	1
Styrene	0.50	U	0.50	0.056	ug/L			07/27/21 14:47	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			07/27/21 14:47	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			07/27/21 14:47	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			07/27/21 14:47	1
Toluene	0.50	U	0.50	0.041	ug/L			07/27/21 14:47	1
1,2,3-Trichlorobenzene	0.390	J	0.50	0.10	ug/L			07/27/21 14:47	1
1,2,4-Trichlorobenzene	0.192	J	0.50	0.057	ug/L			07/27/21 14:47	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-544427/11
Matrix: Water
Analysis Batch: 544427

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			07/27/21 14:47	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			07/27/21 14:47	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			07/27/21 14:47	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			07/27/21 14:47	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			07/27/21 14:47	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			07/27/21 14:47	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			07/27/21 14:47	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			07/27/21 14:47	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			07/27/21 14:47	1
o-Xylene	0.50	U	0.50	0.095	ug/L			07/27/21 14:47	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			07/27/21 14:47	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			07/27/21 14:47	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			07/27/21 14:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*07/27/21 14:47*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*07/27/21 14:47*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*07/27/21 14:47*	*1*

Lab Sample ID: LCS 280-544427/9
Matrix: Water
Analysis Batch: 544427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	18.6		ug/L		93	70 - 130
Bromochloromethane	20.0	17.5		ug/L		87	70 - 130
Bromodichloromethane	20.0	18.4		ug/L		92	70 - 130
Bromoform	20.0	19.5		ug/L		98	70 - 130
Bromomethane	20.0	18.1		ug/L		91	70 - 130
n-Butylbenzene	20.0	20.0		ug/L		100	70 - 130
sec-Butylbenzene	20.0	19.8		ug/L		99	70 - 130
tert-Butylbenzene	20.0	20.2		ug/L		101	70 - 130
Carbon tetrachloride	20.0	18.2		ug/L		91	70 - 130
Chlorobenzene	20.0	18.1		ug/L		90	70 - 130
Dibromochloromethane	20.0	19.6		ug/L		98	70 - 130
Chloroethane	20.0	17.7		ug/L		89	70 - 130
Chloroform	20.0	17.8		ug/L		89	70 - 130
Chloromethane	20.0	17.8		ug/L		89	70 - 130
2-Chlorotoluene	20.0	19.0		ug/L		95	70 - 130
4-Chlorotoluene	20.0	19.1		ug/L		96	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	20.7		ug/L		104	70 - 130
Dibromomethane	20.0	17.9		ug/L		89	70 - 130
1,2-Dichlorobenzene	20.0	18.8		ug/L		94	70 - 130
1,3-Dichlorobenzene	20.0	18.4		ug/L		92	70 - 130
1,4-Dichlorobenzene	20.0	17.9		ug/L		90	70 - 130
Dichlorodifluoromethane	20.0	20.5		ug/L		102	70 - 130
1,1-Dichloroethane	20.0	17.8		ug/L		89	70 - 130
1,2-Dichloroethane	20.0	18.0		ug/L		90	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-544427/9
Matrix: Water
Analysis Batch: 544427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	20.0	18.3		ug/L		91	70 - 130
trans-1,2-Dichloroethene	20.0	17.4		ug/L		87	70 - 130
1,1-Dichloroethene	20.0	18.3		ug/L		91	70 - 130
1,2-Dichloropropane	20.0	18.3		ug/L		92	70 - 130
1,3-Dichloropropane	20.0	19.0		ug/L		95	70 - 130
2,2-Dichloropropane	20.0	17.8		ug/L		89	70 - 130
cis-1,3-Dichloropropene	20.0	19.0		ug/L		95	70 - 130
trans-1,3-Dichloropropene	20.0	19.5		ug/L		98	70 - 130
1,1-Dichloropropene	20.0	18.4		ug/L		92	70 - 130
Ethylbenzene	20.0	19.4		ug/L		97	70 - 130
Hexachlorobutadiene	20.0	18.7		ug/L		93	70 - 130
Isopropylbenzene	20.0	19.9		ug/L		99	70 - 130
4-Isopropyltoluene	20.0	20.4		ug/L		102	70 - 130
Methylene Chloride	20.0	19.6		ug/L		98	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	20.0		ug/L		100	70 - 130
Naphthalene	20.0	20.0		ug/L		100	70 - 130
N-Propylbenzene	20.0	19.3		ug/L		96	70 - 130
Styrene	20.0	20.0		ug/L		100	70 - 130
1,1,1,2-Tetrachloroethane	20.0	19.0		ug/L		95	70 - 130
1,1,2,2-Tetrachloroethane	20.0	19.5		ug/L		97	70 - 130
Tetrachloroethene	20.0	18.1		ug/L		90	70 - 130
Toluene	20.0	18.5		ug/L		92	70 - 130
1,2,3-Trichlorobenzene	20.0	19.1		ug/L		96	70 - 130
1,2,4-Trichlorobenzene	20.0	19.4		ug/L		97	70 - 130
1,1,1-Trichloroethane	20.0	18.0		ug/L		90	70 - 130
1,1,2-Trichloroethane	20.0	19.1		ug/L		96	70 - 130
Trichloroethene	20.0	17.9		ug/L		89	70 - 130
Trichlorofluoromethane	20.0	18.5		ug/L		93	70 - 130
1,2,3-Trichloropropane	20.0	19.3		ug/L		97	70 - 130
1,2,4-Trimethylbenzene	20.0	20.3		ug/L		101	70 - 130
1,3,5-Trimethylbenzene	20.0	20.0		ug/L		100	70 - 130
Vinyl chloride	20.0	19.4		ug/L		97	70 - 130
m-Xylene & p-Xylene	20.0	19.5		ug/L		97	70 - 130
o-Xylene	20.0	20.2		ug/L		101	70 - 130
Xylenes, Total	40.0	39.7		ug/L		99	70 - 130
Bromobenzene	20.0	18.7		ug/L		93	70 - 130
1,2-Dibromoethane	20.0	18.9		ug/L		94	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-544427/10
Matrix: Water
Analysis Batch: 544427

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			20.0	18.9		ug/L		94	70 - 130	1	20
Bromochloromethane			20.0	17.4		ug/L		87	70 - 130	0	20
Bromodichloromethane			20.0	18.6		ug/L		93	70 - 130	1	20
Bromoform			20.0	18.6		ug/L		93	70 - 130	5	20
Bromomethane			20.0	16.5		ug/L		83	70 - 130	9	20
n-Butylbenzene			20.0	20.4		ug/L		102	70 - 130	2	20
sec-Butylbenzene			20.0	20.6		ug/L		103	70 - 130	4	20
tert-Butylbenzene			20.0	21.2		ug/L		106	70 - 130	5	20
Carbon tetrachloride			20.0	18.6		ug/L		93	70 - 130	2	20
Chlorobenzene			20.0	18.4		ug/L		92	70 - 130	2	20
Dibromochloromethane			20.0	19.2		ug/L		96	70 - 130	2	20
Chloroethane			20.0	18.2		ug/L		91	70 - 130	3	20
Chloroform			20.0	17.8		ug/L		89	70 - 130	0	20
Chloromethane			20.0	18.8		ug/L		94	70 - 130	5	20
2-Chlorotoluene			20.0	19.8		ug/L		99	70 - 130	4	20
4-Chlorotoluene			20.0	19.7		ug/L		99	70 - 130	3	20
1,2-Dibromo-3-Chloropropane			20.0	18.2		ug/L		91	70 - 130	13	20
Dibromomethane			20.0	17.7		ug/L		89	70 - 130	1	20
1,2-Dichlorobenzene			20.0	18.7		ug/L		94	70 - 130	0	20
1,3-Dichlorobenzene			20.0	18.9		ug/L		94	70 - 130	2	20
1,4-Dichlorobenzene			20.0	18.4		ug/L		92	70 - 130	3	20
Dichlorodifluoromethane			20.0	20.8		ug/L		104	70 - 130	2	20
1,1-Dichloroethane			20.0	18.5		ug/L		92	70 - 130	4	20
1,2-Dichloroethane			20.0	17.8		ug/L		89	70 - 130	1	20
cis-1,2-Dichloroethene			20.0	18.7		ug/L		93	70 - 130	2	20
trans-1,2-Dichloroethene			20.0	17.8		ug/L		89	70 - 130	2	20
1,1-Dichloroethene			20.0	18.6		ug/L		93	70 - 130	2	20
1,2-Dichloropropane			20.0	18.7		ug/L		93	70 - 130	2	20
1,3-Dichloropropane			20.0	18.7		ug/L		93	70 - 130	2	20
2,2-Dichloropropane			20.0	17.7		ug/L		88	70 - 130	0	20
cis-1,3-Dichloropropene			20.0	19.2		ug/L		96	70 - 130	1	20
trans-1,3-Dichloropropene			20.0	19.1		ug/L		96	70 - 130	2	20
1,1-Dichloropropene			20.0	18.7		ug/L		94	70 - 130	2	20
Ethylbenzene			20.0	19.8		ug/L		99	70 - 130	2	20
Hexachlorobutadiene			20.0	19.0		ug/L		95	70 - 130	1	20
Isopropylbenzene			20.0	20.7		ug/L		104	70 - 130	4	20
4-Isopropyltoluene			20.0	21.0		ug/L		105	70 - 130	3	20
Methylene Chloride			20.0	19.7		ug/L		98	70 - 130	1	20
Methyl-t-Butyl Ether (MTBE)			20.0	19.0		ug/L		95	70 - 130	5	20
Naphthalene			20.0	17.6		ug/L		88	70 - 130	13	20
N-Propylbenzene			20.0	20.1		ug/L		100	70 - 130	4	20
Styrene			20.0	20.4		ug/L		102	70 - 130	2	20
1,1,1,2-Tetrachloroethane			20.0	19.0		ug/L		95	70 - 130	0	20
1,1,2,2-Tetrachloroethane			20.0	18.1		ug/L		91	70 - 130	7	20
Tetrachloroethene			20.0	18.6		ug/L		93	70 - 130	3	20
Toluene			20.0	18.6		ug/L		93	70 - 130	1	20
1,2,3-Trichlorobenzene			20.0	18.6		ug/L		93	70 - 130	3	20
1,2,4-Trichlorobenzene			20.0	19.4		ug/L		97	70 - 130	0	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-544427/10
Matrix: Water
Analysis Batch: 544427

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	18.3		ug/L		91	70 - 130	2	20
1,1,2-Trichloroethane			20.0	18.4		ug/L		92	70 - 130	4	20
Trichloroethene			20.0	18.9		ug/L		95	70 - 130	6	20
Trichlorofluoromethane			20.0	19.5		ug/L		97	70 - 130	5	20
1,2,3-Trichloropropane			20.0	18.0		ug/L		90	70 - 130	7	20
1,2,4-Trimethylbenzene			20.0	21.2		ug/L		106	70 - 130	4	20
1,3,5-Trimethylbenzene			20.0	20.8		ug/L		104	70 - 130	4	20
Vinyl chloride			20.0	19.5		ug/L		97	70 - 130	0	20
m-Xylene & p-Xylene			20.0	19.7		ug/L		99	70 - 130	1	20
o-Xylene			20.0	20.6		ug/L		103	70 - 130	2	20
Xylenes, Total			40.0	40.3		ug/L		101	70 - 130	1	20
Bromobenzene			20.0	19.3		ug/L		96	70 - 130	3	20
1,2-Dibromoethane			20.0	17.9		ug/L		90	70 - 130	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-520176/1-A
Matrix: Water
Analysis Batch: 520388

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 520176

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		07/26/21 12:18	07/27/21 23:09	2

Lab Sample ID: LCS 160-520176/2-A
Matrix: Water
Analysis Batch: 520388

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 520176

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	191		ug/L		95	82 - 116		

Lab Sample ID: 160-42805-A-11-B MS
Matrix: Water
Analysis Batch: 520388

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 520176

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	196		ug/L		98	82 - 116		

Lab Sample ID: 160-42805-A-11-C MSD
Matrix: Water
Analysis Batch: 520388

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 520176

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	199		ug/L		99	82 - 116	2	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B-96

Job ID: 280-151019-1
SDG: 43193

GC/MS VOA

Analysis Batch: 544427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-151019-1	43193-001	Total/NA	Water	8260C	
280-151019-2	43193-002	Total/NA	Water	8260C	
280-151019-3	43193-003	Total/NA	Water	8260C	
280-151019-4	43193-004	Total/NA	Water	8260C	
280-151019-5	43193-005	Total/NA	Water	8260C	
280-151019-6	43193-006	Total/NA	Water	8260C	
MB 280-544427/11	Method Blank	Total/NA	Water	8260C	
LCS 280-544427/9	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-544427/10	Lab Control Sample Dup	Total/NA	Water	8260C	

Metals

Prep Batch: 520176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-151019-2	43193-002	Total/NA	Water	3010A	
MB 160-520176/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-520176/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-42805-A-11-B MS	Matrix Spike	Total/NA	Water	3010A	
160-42805-A-11-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 520388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-151019-2	43193-002	Total/NA	Water	6020A	520176
MB 160-520176/1-A	Method Blank	Total/NA	Water	6020A	520176
LCS 160-520176/2-A	Lab Control Sample	Total/NA	Water	6020A	520176
160-42805-A-11-B MS	Matrix Spike	Total/NA	Water	6020A	520176
160-42805-A-11-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	520176

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B-96

Job ID: 280-151019-1
SDG: 43193

Client Sample ID: 43193-001
Date Collected: 07/19/21 13:45
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	544427	07/27/21 19:10	GO	TAL DEN

Client Sample ID: 43193-002
Date Collected: 07/19/21 13:45
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	544427	07/27/21 19:33	GO	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	520176	07/26/21 14:47	LAM	TAL SL
Total/NA	Analysis	6020A		2			520388	07/28/21 00:49	CJJ	TAL SL

Client Sample ID: 43193-003
Date Collected: 07/19/21 14:05
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	544427	07/27/21 19:56	GO	TAL DEN

Client Sample ID: 43193-004
Date Collected: 07/19/21 14:07
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	544427	07/27/21 20:20	GO	TAL DEN

Client Sample ID: 43193-005
Date Collected: 07/19/21 14:10
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	544427	07/27/21 20:43	GO	TAL DEN

Client Sample ID: 43193-006
Date Collected: 07/19/21 09:00
Date Received: 07/21/21 09:20

Lab Sample ID: 280-151019-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	544427	07/27/21 21:06	GO	TAL DEN

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B-96

Job ID: 280-151019-1
SDG: 43193

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-02-21
A2LA	ISO/IEC 17025	2907.01	11-02-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21 *
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	07-01-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

Laboratory: Eurofins TestAmerica, St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11616	04-01-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3010A	Water	Thallium

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 43193

Requires EDD ☑

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23398 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Metz	Phone: 314-298-8566
2	M. Yost	Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD use TB for 43194

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	8260x EPA 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	7/19/21	1345	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0			W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0			W	RTW-1 Effluent	250 ML	p	1	Hno3										X		
003	E	G	095-153	0		1405	W	RTW-2 Influent	40 ML	SC	3	HCL					X							
004	E	G	095-155	0		1407	W	RTW-3 Influent	40 ML	SC	3	HCL					X							
005	E	G	095-157	0		1410	W	RTW-4 Influent	40 ML	SC	3	HCL					X							
006	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X							

280-151019 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. Metz 7/20/21	Print	Print
Signature 1000	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Adam Ubicki 07/21/2021	Print	Print
Signature 0920	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☑ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☑ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☑ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

0.9 IRIC CFTOL

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 280-577935.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 280-151019-1
Address: 13715 Rider Trail North,	Due Date Requested: 8/3/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B-96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A_DOD5/3010A_2% (MOD) Chromium, Thallium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
43193-002 (280-151019-2)	7/19/21	13:45 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Level 1 radioactive	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Relinquished by: [signature] FED EX	Date/Time: 7/22/21 14:10	Company ETA DEN	Received by: FED EX	Date/Time:	Company
2	Relinquished by: FED EX	Date/Time:	Company	Received by: Sierra Worthington	Date/Time: 7/23/21 0855	Company ETAST
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-151019-1
SDG Number: 43193

Login Number: 151019
List Number: 1
Creator: Rystrom, Joshua R

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-151019-1
SDG Number: 43193

Login Number: 151019
List Number: 2
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis
List Creation: 07/23/21 07:24 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-151576-1
Laboratory Sample Delivery Group: 43247
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Rhonda Ridenhower

Authorized for release by:
8/19/2021 5:57:45 PM
Rhonda Ridenhower, Client Service Manager
Rhonda.Ridenhower@Eurofinset.com

Designee for

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151576-1
SDG: 43247

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
*	MS/MSD RPD exceeded the control limit
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-151576-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 280-151576-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 08/05/2021; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.5 C.

VOLATILE ORGANIC COMPOUNDS

Samples 43247-001 (280-151576-1), 43247-002 (280-151576-2) and 43247-003 (280-151576-3) were analyzed for volatile organic compounds in accordance with SW 846 Method 8260C. The samples were analyzed on 08/16/2021.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 280-546577. An LCS/LCSD was analyzed for batch precision and accuracy.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample 43247-002 (280-151576-2) was analyzed for metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 08/13/2021 and analyzed on 08/18/2021.

Job ID: 280-151576-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

The matrix spike / matrix spike duplicate (MS/MSD) RPD was outside control limits for --- Thallium. The MS/MSD % recoveries were within acceptable limits. No further action is required, original results will be reported. (280-151576-A-2-B MS ^2) and (280-151576-A-2-C MSD ^2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151576-1
SDG: 43247

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SL
5030C	Purge and Trap	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151576-1
SDG: 43247

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-151576-1	43247-001	Water	08/03/21 11:50	08/05/21 09:20
280-151576-2	43247-002	Water	08/03/21 11:55	08/05/21 09:20
280-151576-3	43247-003	Water	08/03/21 09:00	08/05/21 09:20

Method: 8260C - Volatile Organic Compounds (GCMS)

Client Sample ID: 43247-001
Date Collected: 08/03/21 11:50
Date Received: 08/05/21 09:20

Lab Sample ID: 280-151576-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			08/16/21 13:01	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			08/16/21 13:01	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			08/16/21 13:01	1
Bromoform	0.50	U	0.50	0.092	ug/L			08/16/21 13:01	1
Bromomethane	0.50	U	0.50	0.27	ug/L			08/16/21 13:01	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			08/16/21 13:01	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			08/16/21 13:01	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			08/16/21 13:01	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			08/16/21 13:01	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			08/16/21 13:01	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			08/16/21 13:01	1
Chloroethane	0.50	U	0.50	0.14	ug/L			08/16/21 13:01	1
Chloroform	**0.44**	**J**	0.50	0.11	ug/L			08/16/21 13:01	1
Chloromethane	0.50	U	0.50	0.097	ug/L			08/16/21 13:01	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			08/16/21 13:01	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			08/16/21 13:01	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			08/16/21 13:01	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			08/16/21 13:01	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			08/16/21 13:01	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			08/16/21 13:01	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			08/16/21 13:01	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			08/16/21 13:01	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			08/16/21 13:01	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			08/16/21 13:01	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			08/16/21 13:01	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			08/16/21 13:01	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			08/16/21 13:01	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			08/16/21 13:01	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			08/16/21 13:01	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			08/16/21 13:01	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			08/16/21 13:01	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			08/16/21 13:01	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			08/16/21 13:01	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			08/16/21 13:01	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			08/16/21 13:01	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			08/16/21 13:01	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			08/16/21 13:01	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			08/16/21 13:01	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			08/16/21 13:01	1
Naphthalene	0.50	U	0.50	0.085	ug/L			08/16/21 13:01	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			08/16/21 13:01	1
Styrene	0.50	U	0.50	0.056	ug/L			08/16/21 13:01	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			08/16/21 13:01	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			08/16/21 13:01	1
Tetrachloroethene	**2.9**		0.50	0.072	ug/L			08/16/21 13:01	1
Toluene	0.50	U	0.50	0.041	ug/L			08/16/21 13:01	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			08/16/21 13:01	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			08/16/21 13:01	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			08/16/21 13:01	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43247-001
Date Collected: 08/03/21 11:50
Date Received: 08/05/21 09:20

Lab Sample ID: 280-151576-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			08/16/21 13:01	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			08/16/21 13:01	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			08/16/21 13:01	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			08/16/21 13:01	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			08/16/21 13:01	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			08/16/21 13:01	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/16/21 13:01	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			08/16/21 13:01	1
o-Xylene	0.50	U	0.50	0.095	ug/L			08/16/21 13:01	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			08/16/21 13:01	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			08/16/21 13:01	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			08/16/21 13:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*08/16/21 13:01*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*08/16/21 13:01*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*08/16/21 13:01*	*1*

Client Sample ID: 43247-002
Date Collected: 08/03/21 11:55
Date Received: 08/05/21 09:20

Lab Sample ID: 280-151576-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			08/16/21 13:24	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			08/16/21 13:24	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			08/16/21 13:24	1
Bromoform	0.50	U	0.50	0.092	ug/L			08/16/21 13:24	1
Bromomethane	0.50	U	0.50	0.27	ug/L			08/16/21 13:24	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			08/16/21 13:24	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			08/16/21 13:24	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			08/16/21 13:24	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			08/16/21 13:24	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			08/16/21 13:24	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			08/16/21 13:24	1
Chloroethane	0.50	U	0.50	0.14	ug/L			08/16/21 13:24	1
Chloroform	0.50	U	0.50	0.11	ug/L			08/16/21 13:24	1
Chloromethane	0.50	U	0.50	0.097	ug/L			08/16/21 13:24	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			08/16/21 13:24	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			08/16/21 13:24	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			08/16/21 13:24	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			08/16/21 13:24	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			08/16/21 13:24	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			08/16/21 13:24	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			08/16/21 13:24	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			08/16/21 13:24	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			08/16/21 13:24	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			08/16/21 13:24	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			08/16/21 13:24	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			08/16/21 13:24	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			08/16/21 13:24	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			08/16/21 13:24	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43247-002
Date Collected: 08/03/21 11:55
Date Received: 08/05/21 09:20

Lab Sample ID: 280-151576-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			08/16/21 13:24	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			08/16/21 13:24	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			08/16/21 13:24	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			08/16/21 13:24	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			08/16/21 13:24	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			08/16/21 13:24	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			08/16/21 13:24	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			08/16/21 13:24	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			08/16/21 13:24	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			08/16/21 13:24	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			08/16/21 13:24	1
Naphthalene	0.50	U	0.50	0.085	ug/L			08/16/21 13:24	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			08/16/21 13:24	1
Styrene	0.50	U	0.50	0.056	ug/L			08/16/21 13:24	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			08/16/21 13:24	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			08/16/21 13:24	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			08/16/21 13:24	1
Toluene	0.50	U	0.50	0.041	ug/L			08/16/21 13:24	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			08/16/21 13:24	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			08/16/21 13:24	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			08/16/21 13:24	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			08/16/21 13:24	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			08/16/21 13:24	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			08/16/21 13:24	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			08/16/21 13:24	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			08/16/21 13:24	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			08/16/21 13:24	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/16/21 13:24	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			08/16/21 13:24	1
o-Xylene	0.50	U	0.50	0.095	ug/L			08/16/21 13:24	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			08/16/21 13:24	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			08/16/21 13:24	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			08/16/21 13:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*		*08/16/21 13:24*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*		*08/16/21 13:24*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*08/16/21 13:24*	*1*

Client Sample ID: 43247-003
Date Collected: 08/03/21 09:00
Date Received: 08/05/21 09:20

Lab Sample ID: 280-151576-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			08/16/21 13:47	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			08/16/21 13:47	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			08/16/21 13:47	1
Bromoform	0.50	U	0.50	0.092	ug/L			08/16/21 13:47	1
Bromomethane	0.50	U	0.50	0.27	ug/L			08/16/21 13:47	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			08/16/21 13:47	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			08/16/21 13:47	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43247-003
Date Collected: 08/03/21 09:00
Date Received: 08/05/21 09:20

Lab Sample ID: 280-151576-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			08/16/21 13:47	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			08/16/21 13:47	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			08/16/21 13:47	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			08/16/21 13:47	1
Chloroethane	0.50	U	0.50	0.14	ug/L			08/16/21 13:47	1
Chloroform	0.50	U	0.50	0.11	ug/L			08/16/21 13:47	1
Chloromethane	0.50	U	0.50	0.097	ug/L			08/16/21 13:47	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			08/16/21 13:47	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			08/16/21 13:47	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			08/16/21 13:47	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			08/16/21 13:47	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			08/16/21 13:47	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			08/16/21 13:47	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			08/16/21 13:47	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			08/16/21 13:47	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			08/16/21 13:47	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			08/16/21 13:47	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			08/16/21 13:47	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			08/16/21 13:47	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			08/16/21 13:47	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			08/16/21 13:47	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			08/16/21 13:47	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			08/16/21 13:47	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			08/16/21 13:47	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			08/16/21 13:47	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			08/16/21 13:47	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			08/16/21 13:47	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			08/16/21 13:47	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			08/16/21 13:47	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			08/16/21 13:47	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			08/16/21 13:47	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			08/16/21 13:47	1
Naphthalene	0.50	U	0.50	0.085	ug/L			08/16/21 13:47	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			08/16/21 13:47	1
Styrene	0.50	U	0.50	0.056	ug/L			08/16/21 13:47	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			08/16/21 13:47	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			08/16/21 13:47	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			08/16/21 13:47	1
Toluene	0.50	U	0.50	0.041	ug/L			08/16/21 13:47	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			08/16/21 13:47	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			08/16/21 13:47	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			08/16/21 13:47	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			08/16/21 13:47	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			08/16/21 13:47	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			08/16/21 13:47	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			08/16/21 13:47	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			08/16/21 13:47	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			08/16/21 13:47	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/16/21 13:47	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43247-003
Date Collected: 08/03/21 09:00
Date Received: 08/05/21 09:20

Lab Sample ID: 280-151576-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			08/16/21 13:47	1
o-Xylene	0.50	U	0.50	0.095	ug/L			08/16/21 13:47	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			08/16/21 13:47	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			08/16/21 13:47	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			08/16/21 13:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*08/16/21 13:47*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*08/16/21 13:47*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*08/16/21 13:47*	*1*

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: 43247-002
Date Collected: 08/03/21 11:55
Date Received: 08/05/21 09:20

Lab Sample ID: 280-151576-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	5.0	U	5.0	0.90	ug/L		08/13/21 12:48	08/18/21 17:41	2

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151576-1
SDG: 43247

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-151576-1	43247-001	110	97	98
280-151576-2	43247-002	107	95	98
280-151576-3	43247-003	110	96	98
LCS 280-546577/3	Lab Control Sample	92	96	99
LCSD 280-546577/4	Lab Control Sample Dup	92	97	100
MB 280-546577/6	Method Blank	102	98	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 280-546577/6
Matrix: Water
Analysis Batch: 546577

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			08/16/21 12:37	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			08/16/21 12:37	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			08/16/21 12:37	1
Bromoform	0.50	U	0.50	0.092	ug/L			08/16/21 12:37	1
Bromomethane	0.50	U	0.50	0.27	ug/L			08/16/21 12:37	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			08/16/21 12:37	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			08/16/21 12:37	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			08/16/21 12:37	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			08/16/21 12:37	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			08/16/21 12:37	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			08/16/21 12:37	1
Chloroethane	0.50	U	0.50	0.14	ug/L			08/16/21 12:37	1
Chloroform	0.50	U	0.50	0.11	ug/L			08/16/21 12:37	1
Chloromethane	0.50	U	0.50	0.097	ug/L			08/16/21 12:37	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			08/16/21 12:37	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			08/16/21 12:37	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			08/16/21 12:37	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			08/16/21 12:37	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			08/16/21 12:37	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			08/16/21 12:37	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			08/16/21 12:37	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			08/16/21 12:37	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			08/16/21 12:37	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			08/16/21 12:37	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			08/16/21 12:37	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			08/16/21 12:37	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			08/16/21 12:37	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			08/16/21 12:37	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			08/16/21 12:37	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			08/16/21 12:37	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			08/16/21 12:37	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			08/16/21 12:37	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			08/16/21 12:37	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			08/16/21 12:37	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			08/16/21 12:37	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			08/16/21 12:37	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			08/16/21 12:37	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			08/16/21 12:37	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			08/16/21 12:37	1
Naphthalene	0.50	U	0.50	0.085	ug/L			08/16/21 12:37	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			08/16/21 12:37	1
Styrene	0.50	U	0.50	0.056	ug/L			08/16/21 12:37	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			08/16/21 12:37	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			08/16/21 12:37	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			08/16/21 12:37	1
Toluene	0.50	U	0.50	0.041	ug/L			08/16/21 12:37	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			08/16/21 12:37	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			08/16/21 12:37	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-546577/6
Matrix: Water
Analysis Batch: 546577

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			08/16/21 12:37	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			08/16/21 12:37	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			08/16/21 12:37	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			08/16/21 12:37	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			08/16/21 12:37	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			08/16/21 12:37	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			08/16/21 12:37	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/16/21 12:37	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			08/16/21 12:37	1
o-Xylene	0.50	U	0.50	0.095	ug/L			08/16/21 12:37	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			08/16/21 12:37	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			08/16/21 12:37	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			08/16/21 12:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*		*08/16/21 12:37*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*08/16/21 12:37*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*08/16/21 12:37*	*1*

Lab Sample ID: LCS 280-546577/3
Matrix: Water
Analysis Batch: 546577

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	20.4		ug/L		102	70 - 130
Bromochloromethane	20.0	19.0		ug/L		95	70 - 130
Bromodichloromethane	20.0	20.8		ug/L		104	70 - 130
Bromoform	20.0	21.8		ug/L		109	70 - 130
Bromomethane	20.0	24.6		ug/L		123	70 - 130
n-Butylbenzene	20.0	23.0		ug/L		115	70 - 130
sec-Butylbenzene	20.0	22.7		ug/L		113	70 - 130
tert-Butylbenzene	20.0	23.0		ug/L		115	70 - 130
Carbon tetrachloride	20.0	22.1		ug/L		111	70 - 130
Chlorobenzene	20.0	20.2		ug/L		101	70 - 130
Dibromochloromethane	20.0	21.5		ug/L		108	70 - 130
Chloroethane	20.0	21.7		ug/L		108	70 - 130
Chloroform	20.0	19.1		ug/L		96	70 - 130
Chloromethane	20.0	18.1		ug/L		91	70 - 130
2-Chlorotoluene	20.0	21.7		ug/L		108	70 - 130
4-Chlorotoluene	20.0	21.6		ug/L		108	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	22.2		ug/L		111	70 - 130
Dibromomethane	20.0	19.8		ug/L		99	70 - 130
1,2-Dichlorobenzene	20.0	21.0		ug/L		105	70 - 130
1,3-Dichlorobenzene	20.0	21.1		ug/L		105	70 - 130
1,4-Dichlorobenzene	20.0	20.5		ug/L		102	70 - 130
Dichlorodifluoromethane	20.0	17.6		ug/L		88	70 - 130
1,1-Dichloroethane	20.0	19.4		ug/L		97	70 - 130
1,2-Dichloroethane	20.0	19.8		ug/L		99	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-546577/3
Matrix: Water
Analysis Batch: 546577

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	20.0	19.6		ug/L		98	70 - 130
trans-1,2-Dichloroethene	20.0	19.1		ug/L		95	70 - 130
1,1-Dichloroethene	20.0	19.9		ug/L		99	70 - 130
1,2-Dichloropropane	20.0	20.4		ug/L		102	70 - 130
1,3-Dichloropropane	20.0	20.3		ug/L		101	70 - 130
2,2-Dichloropropane	20.0	20.8		ug/L		104	70 - 130
cis-1,3-Dichloropropene	20.0	20.7		ug/L		104	70 - 130
trans-1,3-Dichloropropene	20.0	21.4		ug/L		107	70 - 130
1,1-Dichloropropene	20.0	21.2		ug/L		106	70 - 130
Ethylbenzene	20.0	21.9		ug/L		109	70 - 130
Hexachlorobutadiene	20.0	22.4		ug/L		112	70 - 130
Isopropylbenzene	20.0	22.6		ug/L		113	70 - 130
4-Isopropyltoluene	20.0	23.5		ug/L		117	70 - 130
Methylene Chloride	20.0	20.6		ug/L		103	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	20.3		ug/L		102	70 - 130
Naphthalene	20.0	21.0		ug/L		105	70 - 130
N-Propylbenzene	20.0	22.3		ug/L		112	70 - 130
Styrene	20.0	22.8		ug/L		114	70 - 130
1,1,1,2-Tetrachloroethane	20.0	21.3		ug/L		106	70 - 130
1,1,2,2-Tetrachloroethane	20.0	20.8		ug/L		104	70 - 130
Tetrachloroethene	20.0	21.0		ug/L		105	70 - 130
Toluene	20.0	21.2		ug/L		106	70 - 130
1,2,3-Trichlorobenzene	20.0	21.2		ug/L		106	70 - 130
1,2,4-Trichlorobenzene	20.0	20.8		ug/L		104	70 - 130
1,1,1-Trichloroethane	20.0	20.7		ug/L		104	70 - 130
1,1,2-Trichloroethane	20.0	20.8		ug/L		104	70 - 130
Trichloroethene	20.0	19.4		ug/L		97	70 - 130
Trichlorofluoromethane	20.0	24.9		ug/L		125	70 - 130
1,2,3-Trichloropropane	20.0	21.3		ug/L		107	70 - 130
1,2,4-Trimethylbenzene	20.0	23.0		ug/L		115	70 - 130
1,3,5-Trimethylbenzene	20.0	22.6		ug/L		113	70 - 130
Vinyl chloride	20.0	21.3		ug/L		107	70 - 130
m-Xylene & p-Xylene	20.0	21.8		ug/L		109	70 - 130
o-Xylene	20.0	22.5		ug/L		113	70 - 130
Xylenes, Total	40.0	44.3		ug/L		111	70 - 130
Bromobenzene	20.0	21.2		ug/L		106	70 - 130
1,2-Dibromoethane	20.0	20.1		ug/L		100	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-546577/4
Matrix: Water
Analysis Batch: 546577

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			20.0	20.8		ug/L		104	70 - 130	2	20
Bromochloromethane			20.0	18.7		ug/L		93	70 - 130	2	20
Bromodichloromethane			20.0	21.0		ug/L		105	70 - 130	1	20
Bromoform			20.0	22.0		ug/L		110	70 - 130	1	20
Bromomethane			20.0	25.8		ug/L		129	70 - 130	5	20
n-Butylbenzene			20.0	23.5		ug/L		118	70 - 130	2	20
sec-Butylbenzene			20.0	23.1		ug/L		115	70 - 130	2	20
tert-Butylbenzene			20.0	23.4		ug/L		117	70 - 130	2	20
Carbon tetrachloride			20.0	22.3		ug/L		111	70 - 130	0	20
Chlorobenzene			20.0	20.4		ug/L		102	70 - 130	1	20
Dibromochloromethane			20.0	21.5		ug/L		107	70 - 130	0	20
Chloroethane			20.0	21.9		ug/L		110	70 - 130	1	20
Chloroform			20.0	19.2		ug/L		96	70 - 130	1	20
Chloromethane			20.0	18.5		ug/L		92	70 - 130	2	20
2-Chlorotoluene			20.0	22.0		ug/L		110	70 - 130	2	20
4-Chlorotoluene			20.0	22.2		ug/L		111	70 - 130	3	20
1,2-Dibromo-3-Chloropropane			20.0	23.5		ug/L		118	70 - 130	5	20
Dibromomethane			20.0	19.6		ug/L		98	70 - 130	1	20
1,2-Dichlorobenzene			20.0	21.3		ug/L		106	70 - 130	1	20
1,3-Dichlorobenzene			20.0	21.3		ug/L		106	70 - 130	1	20
1,4-Dichlorobenzene			20.0	20.6		ug/L		103	70 - 130	0	20
Dichlorodifluoromethane			20.0	17.8		ug/L		89	70 - 130	1	20
1,1-Dichloroethane			20.0	19.2		ug/L		96	70 - 130	1	20
1,2-Dichloroethane			20.0	19.9		ug/L		100	70 - 130	1	20
cis-1,2-Dichloroethene			20.0	19.4		ug/L		97	70 - 130	1	20
trans-1,2-Dichloroethene			20.0	19.5		ug/L		98	70 - 130	2	20
1,1-Dichloroethene			20.0	20.4		ug/L		102	70 - 130	3	20
1,2-Dichloropropane			20.0	20.2		ug/L		101	70 - 130	1	20
1,3-Dichloropropane			20.0	20.2		ug/L		101	70 - 130	0	20
2,2-Dichloropropane			20.0	20.5		ug/L		102	70 - 130	1	20
cis-1,3-Dichloropropene			20.0	20.8		ug/L		104	70 - 130	0	20
trans-1,3-Dichloropropene			20.0	21.4		ug/L		107	70 - 130	0	20
1,1-Dichloropropene			20.0	21.4		ug/L		107	70 - 130	1	20
Ethylbenzene			20.0	22.2		ug/L		111	70 - 130	1	20
Hexachlorobutadiene			20.0	23.0		ug/L		115	70 - 130	3	20
Isopropylbenzene			20.0	23.1		ug/L		116	70 - 130	2	20
4-Isopropyltoluene			20.0	23.8		ug/L		119	70 - 130	1	20
Methylene Chloride			20.0	20.3		ug/L		102	70 - 130	1	20
Methyl-t-Butyl Ether (MTBE)			20.0	19.5		ug/L		97	70 - 130	4	20
Naphthalene			20.0	21.7		ug/L		109	70 - 130	4	20
N-Propylbenzene			20.0	22.5		ug/L		112	70 - 130	1	20
Styrene			20.0	22.7		ug/L		114	70 - 130	0	20
1,1,1,2-Tetrachloroethane			20.0	21.3		ug/L		106	70 - 130	0	20
1,1,2,2-Tetrachloroethane			20.0	20.8		ug/L		104	70 - 130	0	20
Tetrachloroethene			20.0	21.3		ug/L		106	70 - 130	1	20
Toluene			20.0	21.4		ug/L		107	70 - 130	1	20
1,2,3-Trichlorobenzene			20.0	21.7		ug/L		108	70 - 130	2	20
1,2,4-Trichlorobenzene			20.0	21.6		ug/L		108	70 - 130	4	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-546577/4
Matrix: Water
Analysis Batch: 546577

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	20.9		ug/L		105	70 - 130	1	20
1,1,2-Trichloroethane			20.0	20.5		ug/L		103	70 - 130	1	20
Trichloroethene			20.0	20.0		ug/L		100	70 - 130	3	20
Trichlorofluoromethane			20.0	25.5		ug/L		127	70 - 130	2	20
1,2,3-Trichloropropane			20.0	21.2		ug/L		106	70 - 130	1	20
1,2,4-Trimethylbenzene			20.0	23.2		ug/L		116	70 - 130	1	20
1,3,5-Trimethylbenzene			20.0	23.0		ug/L		115	70 - 130	2	20
Vinyl chloride			20.0	22.2		ug/L		111	70 - 130	4	20
m-Xylene & p-Xylene			20.0	22.2		ug/L		111	70 - 130	2	20
o-Xylene			20.0	22.5		ug/L		113	70 - 130	0	20
Xylenes, Total			40.0	44.7		ug/L		112	70 - 130	1	20
Bromobenzene			20.0	21.2		ug/L		106	70 - 130	0	20
1,2-Dibromoethane			20.0	20.0		ug/L		100	70 - 130	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-522544/1-A ^2
Matrix: Water
Analysis Batch: 523220

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 522544

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	5.0	U	5.0	0.90	ug/L		08/13/21 12:48	08/18/21 17:34	2

Lab Sample ID: LCS 160-522544/2-A ^2
Matrix: Water
Analysis Batch: 523220

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 522544

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	207		ug/L		103	80 - 120		

Lab Sample ID: 280-151576-2 MS
Matrix: Water
Analysis Batch: 523220

Client Sample ID: 43247-002
Prep Type: Total Recoverable
Prep Batch: 522544

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	5.0	U	200	150		ug/L		75	75 - 125		

Lab Sample ID: 280-151576-2 MSD
Matrix: Water
Analysis Batch: 523220

Client Sample ID: 43247-002
Prep Type: Total Recoverable
Prep Batch: 522544

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	5.0	U	200	198	*	ug/L		99	75 - 125	28	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151576-1
SDG: 43247

GC/MS VOA

Analysis Batch: 546577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-151576-1	43247-001	Total/NA	Water	8260C	
280-151576-2	43247-002	Total/NA	Water	8260C	
280-151576-3	43247-003	Total/NA	Water	8260C	
MB 280-546577/6	Method Blank	Total/NA	Water	8260C	
LCS 280-546577/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-546577/4	Lab Control Sample Dup	Total/NA	Water	8260C	

Metals

Prep Batch: 522544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-151576-2	43247-002	Total Recoverable	Water	3005A	
MB 160-522544/1-A ^2	Method Blank	Total Recoverable	Water	3005A	
LCS 160-522544/2-A ^2	Lab Control Sample	Total Recoverable	Water	3005A	
280-151576-2 MS	43247-002	Total Recoverable	Water	3005A	
280-151576-2 MSD	43247-002	Total Recoverable	Water	3005A	

Analysis Batch: 523220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-151576-2	43247-002	Total Recoverable	Water	6020A	522544
MB 160-522544/1-A ^2	Method Blank	Total Recoverable	Water	6020A	522544
LCS 160-522544/2-A ^2	Lab Control Sample	Total Recoverable	Water	6020A	522544
280-151576-2 MS	43247-002	Total Recoverable	Water	6020A	522544
280-151576-2 MSD	43247-002	Total Recoverable	Water	6020A	522544

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151576-1
SDG: 43247

Client Sample ID: 43247-001
Date Collected: 08/03/21 11:50
Date Received: 08/05/21 09:20

Lab Sample ID: 280-151576-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	546577	08/16/21 13:01	GO	TAL DEN

Client Sample ID: 43247-002
Date Collected: 08/03/21 11:55
Date Received: 08/05/21 09:20

Lab Sample ID: 280-151576-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	546577	08/16/21 13:24	GO	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	522544	08/13/21 12:48	LAM	TAL SL
Total Recoverable	Analysis	6020A		2			523220	08/18/21 17:41	CJJ	TAL SL

Client Sample ID: 43247-003
Date Collected: 08/03/21 09:00
Date Received: 08/05/21 09:20

Lab Sample ID: 280-151576-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	546577	08/16/21 13:47	GO	TAL DEN

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151576-1
SDG: 43247

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-02-21
A2LA	ISO/IEC 17025	2907.01	11-02-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21 *
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	08-01-22
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	07-01-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-22
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21 *
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-22
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

Laboratory: Eurofins TestAmerica, St. Louis

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11616	04-01-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 43247

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. metz	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD Use Trip Blank For 43241

Type UID	Smp	Coll	Sample Information Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	~~8260~~ EPA 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	8/3/21	1150	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1155	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		↓	W	RTW-1 Effluent	250 ML	P	1	HNO3										X
003	E	G	TB-1	0	↓	0900	W	Trip Blank	40 ML	SC	3	HCL					X					

280-151576 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. Metz 8/4/21	Print	Print
Signature 1000	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Karen Rochmer 8/5/21	Print	Print
Signature 0930	Signature	Signature

Contractor Lab Sample Disposal: ❑ Return To Client ☒ Disposal by Lab ❑ Archive For ____ Months

Data Package: ❑ Full ☒ Summary

Turn-Around Time Required: ❑ Rush (1 Day) ☒ 14 Days ❑ 30 Days ❑ 7 Days ❑ Other ( )

BNL F 3101F (rev. 6/13)

0.9 CF 0.6 IR 12

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Do Not Use This Tag

ORIGIN ID:ISPA (631) 344-2311
BNL SHIPPING DEPT
BROOKHAVEN NATIONAL LAB
BLDG98, ROCHESTER STREET

UPTON, NY 11973
UNITED STATES US

SHIP DATE: 04AUG21
ACTWGT: 53.00 LB MAN
CAD: 0221332/CAFE3409

BILL RECIPIENT

TO RECEIVING DEPT.
EUROFINS TEST AMERICA,DENVER
4955 YARROW STREET

ARVADA CO 800024517

0.9

(303) 736-0100
REF: 0000068490

56DC1/BAF3/05A2

FedEx Express

J2011201218011uv

TRK# 0201 9507 8885 9434

THU - 05 AUG 10:30A
PRIORITY OVERNIGHT

NL LAAA

80002
CO-US DEN

650

4
10:30 E
9434
08 05

280-151576 Waybill

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 280-580013.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 280-151576-1
Address: 13715 Rider Trail North,	Due Date Requested: 9/4/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - Project Name	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) TAL Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
43247-002 (280-151576-2)	8/3/21	11:55 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	FEDEX	8/9/21 1430		FEDEX		
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: AUG 10 2021 08:45	Company EDA SRL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-151576-1
SDG Number: 43247

Login Number: 151576
List Number: 1
Creator: Dubicki, Adam L

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-151576-1
SDG Number: 43247

Login Number: 151576
List Number: 2
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis
List Creation: 08/10/21 03:16 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-151964-1
Laboratory Sample Delivery Group: 43276
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
8/31/2021 6:07:53 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151964-1
SDG: 43276

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-151964-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 280-151964-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 8/18/2021 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.1°C

VOLATILE ORGANIC COMPOUNDS

Samples 43276-001 (280-151964-1), 43276-002 (280-151964-2) and 43276-003 (280-151964-3) were analyzed for volatile organic

Job ID: 280-151964-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

compounds in accordance with SW 846 Method 8260C. The samples were analyzed on 08/27/2021.

Analytical Batch 280-547920:
The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) recovered outside control limits for the following analytes: numerous analytes. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data was reported.

Insufficient sample volume was available to prepare a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD was prepared to demonstrate batch precision.

The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recovered outside control limits for dichlorodifluoromethane at 21%D (20%D). The analyte recovered high in the LCS and was within limits in the LCSD. The analyte was not detected in the associated samples; therefore, the data was reported.

No additonal analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 43276-002 (280-151964-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 08/25/2021 and analyzed on 08/26/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151964-1
SDG: 43276

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL
5030C	Purge and Trap	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151964-1
SDG: 43276

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-151964-1	43276-001	Water	08/16/21 10:45	08/18/21 09:30
280-151964-2	43276-002	Water	08/16/21 10:50	08/18/21 09:30
280-151964-3	43276-003	Water	08/16/21 10:30	08/18/21 09:30

Method: 8260C - Volatile Organic Compounds (GCMS)

Client Sample ID: 43276-001
Date Collected: 08/16/21 10:45
Date Received: 08/18/21 09:30

Lab Sample ID: 280-151964-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			08/27/21 10:35	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			08/27/21 10:35	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			08/27/21 10:35	1
Bromoform	0.50	U	0.50	0.092	ug/L			08/27/21 10:35	1
Bromomethane	0.50	U	0.50	0.27	ug/L			08/27/21 10:35	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			08/27/21 10:35	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			08/27/21 10:35	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			08/27/21 10:35	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			08/27/21 10:35	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			08/27/21 10:35	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			08/27/21 10:35	1
Chloroethane	0.50	U	0.50	0.14	ug/L			08/27/21 10:35	1
Chloroform	**0.44**	**J**	0.50	0.11	ug/L			08/27/21 10:35	1
Chloromethane	0.50	U	0.50	0.097	ug/L			08/27/21 10:35	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			08/27/21 10:35	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			08/27/21 10:35	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			08/27/21 10:35	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			08/27/21 10:35	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			08/27/21 10:35	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			08/27/21 10:35	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			08/27/21 10:35	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			08/27/21 10:35	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			08/27/21 10:35	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			08/27/21 10:35	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			08/27/21 10:35	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			08/27/21 10:35	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			08/27/21 10:35	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			08/27/21 10:35	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			08/27/21 10:35	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			08/27/21 10:35	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			08/27/21 10:35	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			08/27/21 10:35	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			08/27/21 10:35	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			08/27/21 10:35	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			08/27/21 10:35	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			08/27/21 10:35	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			08/27/21 10:35	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			08/27/21 10:35	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			08/27/21 10:35	1
Naphthalene	0.50	U	0.50	0.085	ug/L			08/27/21 10:35	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			08/27/21 10:35	1
Styrene	0.50	U	0.50	0.056	ug/L			08/27/21 10:35	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			08/27/21 10:35	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			08/27/21 10:35	1
Tetrachloroethene	**2.8**		0.50	0.072	ug/L			08/27/21 10:35	1
Toluene	0.50	U	0.50	0.041	ug/L			08/27/21 10:35	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			08/27/21 10:35	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			08/27/21 10:35	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			08/27/21 10:35	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43276-001
Date Collected: 08/16/21 10:45
Date Received: 08/18/21 09:30

Lab Sample ID: 280-151964-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			08/27/21 10:35	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			08/27/21 10:35	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			08/27/21 10:35	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			08/27/21 10:35	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			08/27/21 10:35	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			08/27/21 10:35	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/27/21 10:35	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			08/27/21 10:35	1
o-Xylene	0.50	U	0.50	0.095	ug/L			08/27/21 10:35	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			08/27/21 10:35	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			08/27/21 10:35	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			08/27/21 10:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*08/27/21 10:35*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*08/27/21 10:35*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*08/27/21 10:35*	*1*

Client Sample ID: 43276-002
Date Collected: 08/16/21 10:50
Date Received: 08/18/21 09:30

Lab Sample ID: 280-151964-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			08/27/21 09:48	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			08/27/21 09:48	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			08/27/21 09:48	1
Bromoform	0.50	U	0.50	0.092	ug/L			08/27/21 09:48	1
Bromomethane	0.50	U	0.50	0.27	ug/L			08/27/21 09:48	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			08/27/21 09:48	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			08/27/21 09:48	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			08/27/21 09:48	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			08/27/21 09:48	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			08/27/21 09:48	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			08/27/21 09:48	1
Chloroethane	0.50	U	0.50	0.14	ug/L			08/27/21 09:48	1
Chloroform	0.50	U	0.50	0.11	ug/L			08/27/21 09:48	1
Chloromethane	0.50	U	0.50	0.097	ug/L			08/27/21 09:48	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			08/27/21 09:48	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			08/27/21 09:48	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			08/27/21 09:48	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			08/27/21 09:48	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			08/27/21 09:48	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			08/27/21 09:48	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			08/27/21 09:48	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			08/27/21 09:48	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			08/27/21 09:48	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			08/27/21 09:48	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			08/27/21 09:48	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			08/27/21 09:48	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			08/27/21 09:48	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			08/27/21 09:48	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43276-002
Date Collected: 08/16/21 10:50
Date Received: 08/18/21 09:30

Lab Sample ID: 280-151964-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			08/27/21 09:48	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			08/27/21 09:48	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			08/27/21 09:48	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			08/27/21 09:48	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			08/27/21 09:48	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			08/27/21 09:48	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			08/27/21 09:48	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			08/27/21 09:48	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			08/27/21 09:48	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			08/27/21 09:48	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			08/27/21 09:48	1
Naphthalene	0.50	U	0.50	0.085	ug/L			08/27/21 09:48	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			08/27/21 09:48	1
Styrene	0.50	U	0.50	0.056	ug/L			08/27/21 09:48	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			08/27/21 09:48	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			08/27/21 09:48	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			08/27/21 09:48	1
Toluene	0.50	U	0.50	0.041	ug/L			08/27/21 09:48	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			08/27/21 09:48	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			08/27/21 09:48	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			08/27/21 09:48	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			08/27/21 09:48	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			08/27/21 09:48	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			08/27/21 09:48	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			08/27/21 09:48	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			08/27/21 09:48	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			08/27/21 09:48	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/27/21 09:48	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			08/27/21 09:48	1
o-Xylene	0.50	U	0.50	0.095	ug/L			08/27/21 09:48	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			08/27/21 09:48	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			08/27/21 09:48	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			08/27/21 09:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*		*08/27/21 09:48*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*08/27/21 09:48*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*08/27/21 09:48*	*1*

Client Sample ID: 43276-003
Date Collected: 08/16/21 10:30
Date Received: 08/18/21 09:30

Lab Sample ID: 280-151964-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			08/27/21 10:11	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			08/27/21 10:11	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			08/27/21 10:11	1
Bromoform	0.50	U	0.50	0.092	ug/L			08/27/21 10:11	1
Bromomethane	0.50	U	0.50	0.27	ug/L			08/27/21 10:11	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			08/27/21 10:11	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			08/27/21 10:11	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43276-003
Date Collected: 08/16/21 10:30
Date Received: 08/18/21 09:30

Lab Sample ID: 280-151964-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			08/27/21 10:11	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			08/27/21 10:11	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			08/27/21 10:11	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			08/27/21 10:11	1
Chloroethane	0.50	U	0.50	0.14	ug/L			08/27/21 10:11	1
Chloroform	0.50	U	0.50	0.11	ug/L			08/27/21 10:11	1
Chloromethane	0.50	U	0.50	0.097	ug/L			08/27/21 10:11	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			08/27/21 10:11	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			08/27/21 10:11	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			08/27/21 10:11	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			08/27/21 10:11	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			08/27/21 10:11	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			08/27/21 10:11	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			08/27/21 10:11	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			08/27/21 10:11	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			08/27/21 10:11	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			08/27/21 10:11	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			08/27/21 10:11	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			08/27/21 10:11	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			08/27/21 10:11	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			08/27/21 10:11	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			08/27/21 10:11	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			08/27/21 10:11	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			08/27/21 10:11	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			08/27/21 10:11	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			08/27/21 10:11	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			08/27/21 10:11	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			08/27/21 10:11	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			08/27/21 10:11	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			08/27/21 10:11	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			08/27/21 10:11	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			08/27/21 10:11	1
Naphthalene	0.50	U	0.50	0.085	ug/L			08/27/21 10:11	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			08/27/21 10:11	1
Styrene	0.50	U	0.50	0.056	ug/L			08/27/21 10:11	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			08/27/21 10:11	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			08/27/21 10:11	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			08/27/21 10:11	1
Toluene	0.50	U	0.50	0.041	ug/L			08/27/21 10:11	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			08/27/21 10:11	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			08/27/21 10:11	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			08/27/21 10:11	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			08/27/21 10:11	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			08/27/21 10:11	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			08/27/21 10:11	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			08/27/21 10:11	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			08/27/21 10:11	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			08/27/21 10:11	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/27/21 10:11	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43276-003
Date Collected: 08/16/21 10:30
Date Received: 08/18/21 09:30

Lab Sample ID: 280-151964-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			08/27/21 10:11	1
o-Xylene	0.50	U	0.50	0.095	ug/L			08/27/21 10:11	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			08/27/21 10:11	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			08/27/21 10:11	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			08/27/21 10:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*130*		*70 - 130*		*08/27/21 10:11*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*		*08/27/21 10:11*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*08/27/21 10:11*	*1*

Method: 6020A - Metals (ICP/MS)

Client Sample ID: 43276-002
Date Collected: 08/16/21 10:50
Date Received: 08/18/21 09:30

Lab Sample ID: 280-151964-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		08/25/21 11:53	08/26/21 16:26	2

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151964-1
SDG: 43276

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-151964-1	43276-001	110	100	99
280-151964-2	43276-002	108	97	101
280-151964-3	43276-003	130	95	98
LCS 280-547920/4	Lab Control Sample	97	95	101
LCSD 280-547920/5	Lab Control Sample Dup	100	96	100
MB 280-547920/7	Method Blank	112	92	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 280-547920/7
Matrix: Water
Analysis Batch: 547920

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			08/27/21 09:11	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			08/27/21 09:11	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			08/27/21 09:11	1
Bromoform	0.50	U	0.50	0.092	ug/L			08/27/21 09:11	1
Bromomethane	0.50	U	0.50	0.27	ug/L			08/27/21 09:11	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			08/27/21 09:11	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			08/27/21 09:11	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			08/27/21 09:11	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			08/27/21 09:11	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			08/27/21 09:11	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			08/27/21 09:11	1
Chloroethane	0.50	U	0.50	0.14	ug/L			08/27/21 09:11	1
Chloroform	0.50	U	0.50	0.11	ug/L			08/27/21 09:11	1
Chloromethane	0.50	U	0.50	0.097	ug/L			08/27/21 09:11	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			08/27/21 09:11	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			08/27/21 09:11	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			08/27/21 09:11	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			08/27/21 09:11	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			08/27/21 09:11	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			08/27/21 09:11	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			08/27/21 09:11	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			08/27/21 09:11	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			08/27/21 09:11	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			08/27/21 09:11	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			08/27/21 09:11	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			08/27/21 09:11	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			08/27/21 09:11	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			08/27/21 09:11	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			08/27/21 09:11	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			08/27/21 09:11	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			08/27/21 09:11	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			08/27/21 09:11	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			08/27/21 09:11	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			08/27/21 09:11	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			08/27/21 09:11	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			08/27/21 09:11	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			08/27/21 09:11	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			08/27/21 09:11	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			08/27/21 09:11	1
Naphthalene	0.50	U	0.50	0.085	ug/L			08/27/21 09:11	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			08/27/21 09:11	1
Styrene	0.50	U	0.50	0.056	ug/L			08/27/21 09:11	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			08/27/21 09:11	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			08/27/21 09:11	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			08/27/21 09:11	1
Toluene	0.50	U	0.50	0.041	ug/L			08/27/21 09:11	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			08/27/21 09:11	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			08/27/21 09:11	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-547920/7
Matrix: Water
Analysis Batch: 547920

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			08/27/21 09:11	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			08/27/21 09:11	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			08/27/21 09:11	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			08/27/21 09:11	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			08/27/21 09:11	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			08/27/21 09:11	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			08/27/21 09:11	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			08/27/21 09:11	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			08/27/21 09:11	1
o-Xylene	0.50	U	0.50	0.095	ug/L			08/27/21 09:11	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			08/27/21 09:11	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			08/27/21 09:11	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			08/27/21 09:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*70 - 130*		*08/27/21 09:11*	*1*
Toluene-d8 (Surr)	*92*		*70 - 130*		*08/27/21 09:11*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*08/27/21 09:11*	*1*

Lab Sample ID: LCS 280-547920/4
Matrix: Water
Analysis Batch: 547920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	18.4		ug/L		92	70 - 130
Bromochloromethane	20.0	19.8		ug/L		99	70 - 130
Bromodichloromethane	20.0	20.5		ug/L		102	70 - 130
Bromoform	20.0	20.9		ug/L		104	70 - 130
Bromomethane	20.0	30.7		ug/L		154	70 - 130
n-Butylbenzene	20.0	20.2		ug/L		101	70 - 130
sec-Butylbenzene	20.0	19.5		ug/L		98	70 - 130
tert-Butylbenzene	20.0	20.3		ug/L		102	70 - 130
Carbon tetrachloride	20.0	21.0		ug/L		105	70 - 130
Chlorobenzene	20.0	18.5		ug/L		92	70 - 130
Dibromochloromethane	20.0	20.0		ug/L		100	70 - 130
Chloroethane	20.0	27.6		ug/L		138	70 - 130
Chloroform	20.0	20.5		ug/L		102	70 - 130
Chloromethane	20.0	26.4		ug/L		132	70 - 130
2-Chlorotoluene	20.0	19.2		ug/L		96	70 - 130
4-Chlorotoluene	20.0	19.3		ug/L		96	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	19.9		ug/L		100	70 - 130
Dibromomethane	20.0	19.2		ug/L		96	70 - 130
1,2-Dichlorobenzene	20.0	19.1		ug/L		96	70 - 130
1,3-Dichlorobenzene	20.0	18.9		ug/L		94	70 - 130
1,4-Dichlorobenzene	20.0	18.3		ug/L		92	70 - 130
Dichlorodifluoromethane	20.0	26.9		ug/L		134	70 - 130
1,1-Dichloroethane	20.0	20.7		ug/L		104	70 - 130
1,2-Dichloroethane	20.0	19.8		ug/L		99	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-547920/4
Matrix: Water
Analysis Batch: 547920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	20.0	20.5		ug/L		102	70 - 130
trans-1,2-Dichloroethene	20.0	19.3		ug/L		96	70 - 130
1,1-Dichloroethene	20.0	20.2		ug/L		101	70 - 130
1,2-Dichloropropane	20.0	18.2		ug/L		91	70 - 130
1,3-Dichloropropane	20.0	18.6		ug/L		93	70 - 130
2,2-Dichloropropane	20.0	20.8		ug/L		104	70 - 130
cis-1,3-Dichloropropene	20.0	18.9		ug/L		94	70 - 130
trans-1,3-Dichloropropene	20.0	20.6		ug/L		103	70 - 130
1,1-Dichloropropene	20.0	20.2		ug/L		101	70 - 130
Ethylbenzene	20.0	19.5		ug/L		98	70 - 130
Hexachlorobutadiene	20.0	19.3		ug/L		97	70 - 130
Isopropylbenzene	20.0	19.6		ug/L		98	70 - 130
4-Isopropyltoluene	20.0	20.7		ug/L		103	70 - 130
Methylene Chloride	20.0	22.7		ug/L		113	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	22.0		ug/L		110	70 - 130
Naphthalene	20.0	19.0		ug/L		95	70 - 130
N-Propylbenzene	20.0	19.3		ug/L		96	70 - 130
Styrene	20.0	21.1		ug/L		105	70 - 130
1,1,1,2-Tetrachloroethane	20.0	19.9		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	20.0	18.3		ug/L		91	70 - 130
Tetrachloroethene	20.0	17.6		ug/L		88	70 - 130
Toluene	20.0	19.4		ug/L		97	70 - 130
1,2,3-Trichlorobenzene	20.0	19.2		ug/L		96	70 - 130
1,2,4-Trichlorobenzene	20.0	19.1		ug/L		95	70 - 130
1,1,1-Trichloroethane	20.0	21.1		ug/L		106	70 - 130
1,1,2-Trichloroethane	20.0	19.4		ug/L		97	70 - 130
Trichloroethene	20.0	17.0		ug/L		85	70 - 130
Trichlorofluoromethane	20.0	29.4		ug/L		147	70 - 130
1,2,3-Trichloropropane	20.0	19.2		ug/L		96	70 - 130
1,2,4-Trimethylbenzene	20.0	20.9		ug/L		105	70 - 130
1,3,5-Trimethylbenzene	20.0	20.4		ug/L		102	70 - 130
Vinyl chloride	20.0	30.9		ug/L		154	70 - 130
m-Xylene & p-Xylene	20.0	19.7		ug/L		99	70 - 130
o-Xylene	20.0	20.6		ug/L		103	70 - 130
Xylenes, Total	40.0	40.3		ug/L		101	70 - 130
Bromobenzene	20.0	18.8		ug/L		94	70 - 130
1,2-Dibromoethane	20.0	18.6		ug/L		93	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*95*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-547920/5
Matrix: Water
Analysis Batch: 547920

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	19.5		ug/L		97	70 - 130	6	20
Bromochloromethane	20.0	18.2		ug/L		91	70 - 130	8	20
Bromodichloromethane	20.0	19.3		ug/L		96	70 - 130	6	20
Bromoform	20.0	19.9		ug/L		99	70 - 130	5	20
Bromomethane	20.0	29.7		ug/L		149	70 - 130	3	20
n-Butylbenzene	20.0	20.7		ug/L		103	70 - 130	2	20
sec-Butylbenzene	20.0	20.2		ug/L		101	70 - 130	3	20
tert-Butylbenzene	20.0	20.8		ug/L		104	70 - 130	2	20
Carbon tetrachloride	20.0	21.7		ug/L		108	70 - 130	3	20
Chlorobenzene	20.0	18.5		ug/L		92	70 - 130	0	20
Dibromochloromethane	20.0	19.7		ug/L		99	70 - 130	1	20
Chloroethane	20.0	25.4		ug/L		127	70 - 130	8	20
Chloroform	20.0	19.1		ug/L		96	70 - 130	7	20
Chloromethane	20.0	24.0		ug/L		120	70 - 130	10	20
2-Chlorotoluene	20.0	19.2		ug/L		96	70 - 130	0	20
4-Chlorotoluene	20.0	19.3		ug/L		97	70 - 130	0	20
1,2-Dibromo-3-Chloropropane	20.0	19.0		ug/L		95	70 - 130	5	20
Dibromomethane	20.0	18.6		ug/L		93	70 - 130	3	20
1,2-Dichlorobenzene	20.0	18.8		ug/L		94	70 - 130	2	20
1,3-Dichlorobenzene	20.0	18.9		ug/L		94	70 - 130	0	20
1,4-Dichlorobenzene	20.0	18.4		ug/L		92	70 - 130	0	20
Dichlorodifluoromethane	20.0	21.9		ug/L		109	70 - 130	21	20
1,1-Dichloroethane	20.0	19.2		ug/L		96	70 - 130	8	20
1,2-Dichloroethane	20.0	19.3		ug/L		97	70 - 130	3	20
cis-1,2-Dichloroethene	20.0	19.2		ug/L		96	70 - 130	6	20
trans-1,2-Dichloroethene	20.0	18.6		ug/L		93	70 - 130	4	20
1,1-Dichloroethene	20.0	19.9		ug/L		99	70 - 130	2	20
1,2-Dichloropropane	20.0	18.8		ug/L		94	70 - 130	3	20
1,3-Dichloropropane	20.0	18.3		ug/L		92	70 - 130	2	20
2,2-Dichloropropane	20.0	20.5		ug/L		103	70 - 130	1	20
cis-1,3-Dichloropropene	20.0	18.5		ug/L		93	70 - 130	2	20
trans-1,3-Dichloropropene	20.0	18.5		ug/L		92	70 - 130	11	20
1,1-Dichloropropene	20.0	21.2		ug/L		106	70 - 130	5	20
Ethylbenzene	20.0	20.1		ug/L		101	70 - 130	3	20
Hexachlorobutadiene	20.0	20.4		ug/L		102	70 - 130	5	20
Isopropylbenzene	20.0	20.3		ug/L		102	70 - 130	4	20
4-Isopropyltoluene	20.0	21.2		ug/L		106	70 - 130	3	20
Methylene Chloride	20.0	20.7		ug/L		103	70 - 130	9	20
Methyl-t-Butyl Ether (MTBE)	20.0	19.9		ug/L		99	70 - 130	10	20
Naphthalene	20.0	18.6		ug/L		93	70 - 130	2	20
N-Propylbenzene	20.0	19.9		ug/L		100	70 - 130	3	20
Styrene	20.0	21.2		ug/L		106	70 - 130	1	20
1,1,1,2-Tetrachloroethane	20.0	19.9		ug/L		100	70 - 130	0	20
1,1,2,2-Tetrachloroethane	20.0	17.5		ug/L		88	70 - 130	4	20
Tetrachloroethene	20.0	19.0		ug/L		95	70 - 130	7	20
Toluene	20.0	17.8		ug/L		89	70 - 130	8	20
1,2,3-Trichlorobenzene	20.0	19.1		ug/L		96	70 - 130	0	20
1,2,4-Trichlorobenzene	20.0	19.2		ug/L		96	70 - 130	1	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-547920/5
Matrix: Water
Analysis Batch: 547920

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	20.3		ug/L		102	70 - 130	4	20
1,1,2-Trichloroethane			20.0	17.5		ug/L		88	70 - 130	10	20
Trichloroethene			20.0	19.3		ug/L		96	70 - 130	13	20
Trichlorofluoromethane			20.0	24.8		ug/L		124	70 - 130	17	20
1,2,3-Trichloropropane			20.0	18.5		ug/L		92	70 - 130	4	20
1,2,4-Trimethylbenzene			20.0	21.1		ug/L		106	70 - 130	1	20
1,3,5-Trimethylbenzene			20.0	20.6		ug/L		103	70 - 130	1	20
Vinyl chloride			20.0	26.9		ug/L		135	70 - 130	14	20
m-Xylene & p-Xylene			20.0	20.3		ug/L		101	70 - 130	3	20
o-Xylene			20.0	20.6		ug/L		103	70 - 130	0	20
Xylenes, Total			40.0	40.9		ug/L		102	70 - 130	1	20
Bromobenzene			20.0	18.7		ug/L		93	70 - 130	0	20
1,2-Dibromoethane			20.0	18.2		ug/L		91	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-523979/1-A ^2
Matrix: Water
Analysis Batch: 524305

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 523979

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		08/25/21 11:53	08/26/21 16:02	2

Lab Sample ID: LCS 160-523979/2-A ^2
Matrix: Water
Analysis Batch: 524305

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 523979

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	207		ug/L		104	82 - 116		

Lab Sample ID: 280-151552-C-2-B MS ^2
Matrix: Water
Analysis Batch: 524305

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 523979

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	2.0	U	200	205		ug/L		102	82 - 116		

Lab Sample ID: 280-151552-C-2-C MSD ^2
Matrix: Water
Analysis Batch: 524305

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 523979

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	2.0	U	200	199		ug/L		100	82 - 116	3	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151964-1
SDG: 43276

GC/MS VOA

Analysis Batch: 547920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-151964-1	43276-001	Total/NA	Water	8260C	
280-151964-2	43276-002	Total/NA	Water	8260C	
280-151964-3	43276-003	Total/NA	Water	8260C	
MB 280-547920/7	Method Blank	Total/NA	Water	8260C	
LCS 280-547920/4	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-547920/5	Lab Control Sample Dup	Total/NA	Water	8260C	

Metals

Prep Batch: 523979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-151964-2	43276-002	Total/NA	Water	3010A	
MB 160-523979/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-523979/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
280-151552-C-2-B MS ^2	Matrix Spike	Total/NA	Water	3010A	
280-151552-C-2-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 524305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-151964-2	43276-002	Total/NA	Water	6020A	523979
MB 160-523979/1-A ^2	Method Blank	Total/NA	Water	6020A	523979
LCS 160-523979/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	523979
280-151552-C-2-B MS ^2	Matrix Spike	Total/NA	Water	6020A	523979
280-151552-C-2-C MSD ^2	Matrix Spike Duplicate	Total/NA	Water	6020A	523979

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151964-1
SDG: 43276

Client Sample ID: 43276-001
Date Collected: 08/16/21 10:45
Date Received: 08/18/21 09:30

Lab Sample ID: 280-151964-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	547920	08/27/21 10:35	TAW	TAL DEN

Client Sample ID: 43276-002
Date Collected: 08/16/21 10:50
Date Received: 08/18/21 09:30

Lab Sample ID: 280-151964-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	547920	08/27/21 09:48	TAW	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	523979	08/25/21 11:53	LAM	TAL SL
Total/NA	Analysis	6020A		2			524305	08/26/21 16:26	CJJ	TAL SL

Client Sample ID: 43276-003
Date Collected: 08/16/21 10:30
Date Received: 08/18/21 09:30

Lab Sample ID: 280-151964-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	547920	08/27/21 10:11	TAW	TAL DEN

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-151964-1
SDG: 43276

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-02-21
A2LA	ISO/IEC 17025	2907.01	11-02-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21 *
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	08-01-22
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	07-01-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-22
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21 *
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-22
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

Laboratory: Eurofins TestAmerica, St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11616	04-01-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3010A	Water	Thallium

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

BROOKHAVEN
NATIONAL LABORATORY

P.O. #

Chain of Custody No. 43276

Requires EDD X

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23398 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R Metz	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: **SPDES TAT for EDD**

Type UID	Type Imp	Type Cal	Sample Information: Site ID/Bldg/Line #	Depth/WP	Date	Time	Matrix	Additional Sample Information: Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	EPA 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	8/16/21	1045	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1050	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		↓	W	RTW-1 Effluent	250 ML	P	1	HNO3										X
003	E	G	TB-1	0		1030	W	Trip Blank	40 ML	SC	3	HCL					X					

280-151964 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. Metz 8/17/21	Print	Print
Signature [signature] 1400	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Josh Eystrom 8/18/21	Print	Print
Signature [signature] 0930	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For ____ Month

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13) 0.1 RR CF+1.0

Distribution: WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 280-581737.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 280-151964-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 9/1/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A_DOD5/3010A_2% Chromium, Thallium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
43276-002 (280-151964-2)	8/16/21	10:50 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Level 1 radioactive	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		8-20-21 1317	ETDEN	FED EX		
2	FED EX					
3					8/21/21 0842	ETA STL
4						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-151964-1
SDG Number: 43276

Login Number: 151964
List Number: 1
Creator: Dubicki, Adam L

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-151964-1
SDG Number: 43276

Login Number: 151964
List Number: 2
Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis
List Creation: 08/21/21 12:16 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-152633-1
Laboratory Sample Delivery Group: 43315
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
9/17/2021 8:58:31 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-152633-1
SDG: 43315

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
N	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-152633-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 280-152633-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 9/3/2021 9:25 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.9º C.

VOLATILE ORGANIC COMPOUNDS

Samples 43315-001 (280-152633-1), 43315-002 (280-152633-2) and 43315-003 (280-152633-3) were analyzed for volatile organic compounds in accordance with SW 846 Method 8260C. The samples were analyzed on 09/13/2021.

Job ID: 280-152633-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

Analytical Batch 280-549599:
Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD was prepared to demonstrate batch precision.

Analytical Batch 280-549231:
The initial calibration verification (ICV) result was above the upper control limit of 30%D for Bromomethane at 62.1%D. The analyte was not detected in the samples; therefore the results were reported..

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recovered outside control limits for Bromomethane at 144% and 150% respectively (70-130%). The analyte was biased high in the LCS and was not detected in the samples; therefore, the data was reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS
Sample 43315-002 (280-152633-2) was analyzed for ICP-MS in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 09/10/2021 and analyzed on 09/14/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

Preparation Batch 160-526282, Analytical Batch 160-526858:
Due to the high concentration of thallium, the matrix spike / matrix spike duplicate (MS/MSD) could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria: (280-152463-C-1-B MS ^10) and (280-152463-C-1-C MSD ^10).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-152633-1
SDG: 43315

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL SL
3010A	Preparation, Total Metals	SW846	TAL SL
5030C	Purge and Trap	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-152633-1
SDG: 43315

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-152633-1	43315-001	Water	09/01/21 11:37	09/03/21 09:25
280-152633-2	43315-002	Water	09/01/21 11:39	09/03/21 09:25
280-152633-3	43315-003	Water	09/01/21 11:00	09/03/21 09:25

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-152633-1
SDG: 43315

Method: 8260C - Volatile Organic Compounds (GCMS)

Client Sample ID: 43315-001
Date Collected: 09/01/21 11:37
Date Received: 09/03/21 09:25

Lab Sample ID: 280-152633-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			09/13/21 11:58	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			09/13/21 11:58	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			09/13/21 11:58	1
Bromoform	0.50	U	0.50	0.092	ug/L			09/13/21 11:58	1
Bromomethane	0.50	U	0.50	0.27	ug/L			09/13/21 11:58	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			09/13/21 11:58	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			09/13/21 11:58	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			09/13/21 11:58	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			09/13/21 11:58	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			09/13/21 11:58	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			09/13/21 11:58	1
Chloroethane	0.50	U	0.50	0.14	ug/L			09/13/21 11:58	1
Chloroform	**0.49**	**J**	0.50	0.11	ug/L			09/13/21 11:58	1
Chloromethane	0.50	U	0.50	0.097	ug/L			09/13/21 11:58	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			09/13/21 11:58	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			09/13/21 11:58	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			09/13/21 11:58	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			09/13/21 11:58	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			09/13/21 11:58	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			09/13/21 11:58	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			09/13/21 11:58	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			09/13/21 11:58	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			09/13/21 11:58	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			09/13/21 11:58	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			09/13/21 11:58	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			09/13/21 11:58	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			09/13/21 11:58	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			09/13/21 11:58	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			09/13/21 11:58	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			09/13/21 11:58	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			09/13/21 11:58	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			09/13/21 11:58	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			09/13/21 11:58	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			09/13/21 11:58	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			09/13/21 11:58	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			09/13/21 11:58	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			09/13/21 11:58	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			09/13/21 11:58	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			09/13/21 11:58	1
Naphthalene	**0.38**	**J**	0.50	0.085	ug/L			09/13/21 11:58	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			09/13/21 11:58	1
Styrene	0.50	U	0.50	0.056	ug/L			09/13/21 11:58	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			09/13/21 11:58	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			09/13/21 11:58	1
Tetrachloroethene	**2.8**		0.50	0.072	ug/L			09/13/21 11:58	1
Toluene	0.50	U	0.50	0.041	ug/L			09/13/21 11:58	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			09/13/21 11:58	1
1,2,4-Trichlorobenzene	**0.17**	**J**	0.50	0.057	ug/L			09/13/21 11:58	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			09/13/21 11:58	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43315-001
Date Collected: 09/01/21 11:37
Date Received: 09/03/21 09:25

Lab Sample ID: 280-152633-1
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			09/13/21 11:58	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			09/13/21 11:58	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			09/13/21 11:58	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			09/13/21 11:58	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			09/13/21 11:58	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			09/13/21 11:58	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/13/21 11:58	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			09/13/21 11:58	1
o-Xylene	0.50	U	0.50	0.095	ug/L			09/13/21 11:58	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			09/13/21 11:58	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			09/13/21 11:58	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			09/13/21 11:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*09/13/21 11:58*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*09/13/21 11:58*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*09/13/21 11:58*	*1*

Client Sample ID: 43315-002
Date Collected: 09/01/21 11:39
Date Received: 09/03/21 09:25

Lab Sample ID: 280-152633-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			09/13/21 12:21	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			09/13/21 12:21	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			09/13/21 12:21	1
Bromoform	0.50	U	0.50	0.092	ug/L			09/13/21 12:21	1
Bromomethane	0.50	U	0.50	0.27	ug/L			09/13/21 12:21	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			09/13/21 12:21	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			09/13/21 12:21	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			09/13/21 12:21	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			09/13/21 12:21	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			09/13/21 12:21	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			09/13/21 12:21	1
Chloroethane	0.50	U	0.50	0.14	ug/L			09/13/21 12:21	1
Chloroform	0.50	U	0.50	0.11	ug/L			09/13/21 12:21	1
Chloromethane	0.50	U	0.50	0.097	ug/L			09/13/21 12:21	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			09/13/21 12:21	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			09/13/21 12:21	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			09/13/21 12:21	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			09/13/21 12:21	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			09/13/21 12:21	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			09/13/21 12:21	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			09/13/21 12:21	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			09/13/21 12:21	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			09/13/21 12:21	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			09/13/21 12:21	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			09/13/21 12:21	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			09/13/21 12:21	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			09/13/21 12:21	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			09/13/21 12:21	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43315-002
Date Collected: 09/01/21 11:39
Date Received: 09/03/21 09:25

Lab Sample ID: 280-152633-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			09/13/21 12:21	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			09/13/21 12:21	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			09/13/21 12:21	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			09/13/21 12:21	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			09/13/21 12:21	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			09/13/21 12:21	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			09/13/21 12:21	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			09/13/21 12:21	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			09/13/21 12:21	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			09/13/21 12:21	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			09/13/21 12:21	1
Naphthalene	0.50	U	0.50	0.085	ug/L			09/13/21 12:21	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			09/13/21 12:21	1
Styrene	0.50	U	0.50	0.056	ug/L			09/13/21 12:21	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			09/13/21 12:21	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			09/13/21 12:21	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			09/13/21 12:21	1
Toluene	0.50	U	0.50	0.041	ug/L			09/13/21 12:21	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			09/13/21 12:21	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			09/13/21 12:21	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			09/13/21 12:21	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			09/13/21 12:21	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			09/13/21 12:21	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			09/13/21 12:21	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			09/13/21 12:21	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			09/13/21 12:21	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			09/13/21 12:21	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/13/21 12:21	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			09/13/21 12:21	1
o-Xylene	0.50	U	0.50	0.095	ug/L			09/13/21 12:21	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			09/13/21 12:21	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			09/13/21 12:21	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			09/13/21 12:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*		*09/13/21 12:21*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*09/13/21 12:21*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*09/13/21 12:21*	*1*

Client Sample ID: 43315-003
Date Collected: 09/01/21 11:00
Date Received: 09/03/21 09:25

Lab Sample ID: 280-152633-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			09/13/21 12:44	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			09/13/21 12:44	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			09/13/21 12:44	1
Bromoform	0.50	U	0.50	0.092	ug/L			09/13/21 12:44	1
Bromomethane	0.50	U	0.50	0.27	ug/L			09/13/21 12:44	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			09/13/21 12:44	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			09/13/21 12:44	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43315-003
Date Collected: 09/01/21 11:00
Date Received: 09/03/21 09:25

Lab Sample ID: 280-152633-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			09/13/21 12:44	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			09/13/21 12:44	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			09/13/21 12:44	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			09/13/21 12:44	1
Chloroethane	0.50	U	0.50	0.14	ug/L			09/13/21 12:44	1
Chloroform	0.50	U	0.50	0.11	ug/L			09/13/21 12:44	1
Chloromethane	0.50	U	0.50	0.097	ug/L			09/13/21 12:44	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			09/13/21 12:44	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			09/13/21 12:44	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			09/13/21 12:44	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			09/13/21 12:44	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			09/13/21 12:44	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			09/13/21 12:44	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			09/13/21 12:44	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			09/13/21 12:44	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			09/13/21 12:44	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			09/13/21 12:44	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			09/13/21 12:44	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			09/13/21 12:44	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			09/13/21 12:44	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			09/13/21 12:44	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			09/13/21 12:44	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			09/13/21 12:44	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			09/13/21 12:44	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			09/13/21 12:44	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			09/13/21 12:44	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			09/13/21 12:44	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			09/13/21 12:44	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			09/13/21 12:44	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			09/13/21 12:44	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			09/13/21 12:44	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			09/13/21 12:44	1
Naphthalene	0.50	U	0.50	0.085	ug/L			09/13/21 12:44	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			09/13/21 12:44	1
Styrene	0.50	U	0.50	0.056	ug/L			09/13/21 12:44	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			09/13/21 12:44	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			09/13/21 12:44	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			09/13/21 12:44	1
Toluene	0.50	U	0.50	0.041	ug/L			09/13/21 12:44	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			09/13/21 12:44	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			09/13/21 12:44	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			09/13/21 12:44	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			09/13/21 12:44	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			09/13/21 12:44	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			09/13/21 12:44	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			09/13/21 12:44	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			09/13/21 12:44	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			09/13/21 12:44	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/13/21 12:44	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Client Sample ID: 43315-003
Date Collected: 09/01/21 11:00
Date Received: 09/03/21 09:25

Lab Sample ID: 280-152633-3
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			09/13/21 12:44	1
o-Xylene	0.50	U	0.50	0.095	ug/L			09/13/21 12:44	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			09/13/21 12:44	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			09/13/21 12:44	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			09/13/21 12:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*09/13/21 12:44*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*09/13/21 12:44*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*09/13/21 12:44*	*1*

Method: 6020A - Metals (ICP/MS)

Client Sample ID: 43315-002
Date Collected: 09/01/21 11:39
Date Received: 09/03/21 09:25

Lab Sample ID: 280-152633-2
Matrix: Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		09/10/21 13:26	09/14/21 00:43	2

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-152633-1
SDG: 43315

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
		DCA	TOL	BFB						
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)						
280-152633-1	43315-001	99	101	100						
280-152633-2	43315-002	97	99	101						
280-152633-3	43315-003	98	98	99						
LCS 280-549599/3	Lab Control Sample	97	99	99						
LCSD 280-549599/4	Lab Control Sample Dup	96	101	98						
MB 280-549599/5	Method Blank	98	100	99						

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 280-549599/5
Matrix: Water
Analysis Batch: 549599

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			09/13/21 10:34	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			09/13/21 10:34	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			09/13/21 10:34	1
Bromoform	0.50	U	0.50	0.092	ug/L			09/13/21 10:34	1
Bromomethane	0.50	U	0.50	0.27	ug/L			09/13/21 10:34	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			09/13/21 10:34	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			09/13/21 10:34	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			09/13/21 10:34	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			09/13/21 10:34	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			09/13/21 10:34	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			09/13/21 10:34	1
Chloroethane	0.50	U	0.50	0.14	ug/L			09/13/21 10:34	1
Chloroform	0.50	U	0.50	0.11	ug/L			09/13/21 10:34	1
Chloromethane	0.50	U	0.50	0.097	ug/L			09/13/21 10:34	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			09/13/21 10:34	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			09/13/21 10:34	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			09/13/21 10:34	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			09/13/21 10:34	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			09/13/21 10:34	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			09/13/21 10:34	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			09/13/21 10:34	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			09/13/21 10:34	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			09/13/21 10:34	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			09/13/21 10:34	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			09/13/21 10:34	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			09/13/21 10:34	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			09/13/21 10:34	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			09/13/21 10:34	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			09/13/21 10:34	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			09/13/21 10:34	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			09/13/21 10:34	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			09/13/21 10:34	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			09/13/21 10:34	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			09/13/21 10:34	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			09/13/21 10:34	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			09/13/21 10:34	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			09/13/21 10:34	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			09/13/21 10:34	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			09/13/21 10:34	1
Naphthalene	0.50	U	0.50	0.085	ug/L			09/13/21 10:34	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			09/13/21 10:34	1
Styrene	0.50	U	0.50	0.056	ug/L			09/13/21 10:34	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			09/13/21 10:34	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			09/13/21 10:34	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			09/13/21 10:34	1
Toluene	0.50	U	0.50	0.041	ug/L			09/13/21 10:34	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			09/13/21 10:34	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			09/13/21 10:34	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-549599/5
Matrix: Water
Analysis Batch: 549599

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			09/13/21 10:34	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			09/13/21 10:34	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			09/13/21 10:34	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			09/13/21 10:34	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			09/13/21 10:34	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			09/13/21 10:34	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			09/13/21 10:34	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/13/21 10:34	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			09/13/21 10:34	1
o-Xylene	0.50	U	0.50	0.095	ug/L			09/13/21 10:34	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			09/13/21 10:34	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			09/13/21 10:34	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			09/13/21 10:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*09/13/21 10:34*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*09/13/21 10:34*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*09/13/21 10:34*	*1*

Lab Sample ID: LCS 280-549599/3
Matrix: Water
Analysis Batch: 549599

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	21.1		ug/L		106	70 - 130
Bromochloromethane	20.0	21.1		ug/L		105	70 - 130
Bromodichloromethane	20.0	20.2		ug/L		101	70 - 130
Bromoform	20.0	19.9		ug/L		100	70 - 130
Bromomethane	20.0	28.9		ug/L		144	70 - 130
n-Butylbenzene	20.0	20.7		ug/L		103	70 - 130
sec-Butylbenzene	20.0	20.7		ug/L		104	70 - 130
tert-Butylbenzene	20.0	20.5		ug/L		103	70 - 130
Carbon tetrachloride	20.0	21.8		ug/L		109	70 - 130
Chlorobenzene	20.0	20.2		ug/L		101	70 - 130
Dibromochloromethane	20.0	19.8		ug/L		99	70 - 130
Chloroethane	20.0	20.6		ug/L		103	70 - 130
Chloroform	20.0	21.3		ug/L		106	70 - 130
Chloromethane	20.0	20.2		ug/L		101	70 - 130
2-Chlorotoluene	20.0	20.2		ug/L		101	70 - 130
4-Chlorotoluene	20.0	19.8		ug/L		99	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	19.6		ug/L		98	70 - 130
Dibromomethane	20.0	20.1		ug/L		101	70 - 130
1,2-Dichlorobenzene	20.0	20.2		ug/L		101	70 - 130
1,3-Dichlorobenzene	20.0	20.0		ug/L		100	70 - 130
1,4-Dichlorobenzene	20.0	19.9		ug/L		100	70 - 130
Dichlorodifluoromethane	20.0	19.3		ug/L		96	70 - 130
1,1-Dichloroethane	20.0	21.2		ug/L		106	70 - 130
1,2-Dichloroethane	20.0	20.7		ug/L		103	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-549599/3
Matrix: Water
Analysis Batch: 549599

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	20.0	20.6		ug/L		103	70 - 130
trans-1,2-Dichloroethene	20.0	22.0		ug/L		110	70 - 130
1,1-Dichloroethene	20.0	21.2		ug/L		106	70 - 130
1,2-Dichloropropane	20.0	21.1		ug/L		105	70 - 130
1,3-Dichloropropane	20.0	20.5		ug/L		103	70 - 130
2,2-Dichloropropane	20.0	21.9		ug/L		110	70 - 130
cis-1,3-Dichloropropene	20.0	20.0		ug/L		100	70 - 130
trans-1,3-Dichloropropene	20.0	20.2		ug/L		101	70 - 130
1,1-Dichloropropene	20.0	21.6		ug/L		108	70 - 130
Ethylbenzene	20.0	20.7		ug/L		103	70 - 130
Hexachlorobutadiene	20.0	20.3		ug/L		101	70 - 130
Isopropylbenzene	20.0	20.6		ug/L		103	70 - 130
4-Isopropyltoluene	20.0	20.3		ug/L		102	70 - 130
Methylene Chloride	20.0	19.3		ug/L		96	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	21.7		ug/L		109	70 - 130
Naphthalene	20.0	18.3		ug/L		92	70 - 130
N-Propylbenzene	20.0	20.7		ug/L		104	70 - 130
Styrene	20.0	20.5		ug/L		102	70 - 130
1,1,1,2-Tetrachloroethane	20.0	20.7		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	20.0	20.4		ug/L		102	70 - 130
Tetrachloroethene	20.0	21.5		ug/L		107	70 - 130
Toluene	20.0	21.0		ug/L		105	70 - 130
1,2,3-Trichlorobenzene	20.0	19.5		ug/L		97	70 - 130
1,2,4-Trichlorobenzene	20.0	19.6		ug/L		98	70 - 130
1,1,1-Trichloroethane	20.0	21.2		ug/L		106	70 - 130
1,1,2-Trichloroethane	20.0	20.6		ug/L		103	70 - 130
Trichloroethene	20.0	20.4		ug/L		102	70 - 130
Trichlorofluoromethane	20.0	19.4		ug/L		97	70 - 130
1,2,3-Trichloropropane	20.0	20.4		ug/L		102	70 - 130
1,2,4-Trimethylbenzene	20.0	20.2		ug/L		101	70 - 130
1,3,5-Trimethylbenzene	20.0	20.4		ug/L		102	70 - 130
Vinyl chloride	20.0	20.6		ug/L		103	70 - 130
m-Xylene & p-Xylene	20.0	20.3		ug/L		102	70 - 130
o-Xylene	20.0	20.3		ug/L		101	70 - 130
Xylenes, Total	40.0	40.6		ug/L		102	70 - 130
Bromobenzene	20.0	20.0		ug/L		100	70 - 130
1,2-Dibromoethane	20.0	20.3		ug/L		101	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-549599/4
Matrix: Water
Analysis Batch: 549599

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			20.0	21.0		ug/L		105	70 - 130	1	20
Bromochloromethane			20.0	20.6		ug/L		103	70 - 130	3	20
Bromodichloromethane			20.0	19.9		ug/L		100	70 - 130	1	20
Bromoform			20.0	19.5		ug/L		98	70 - 130	2	20
Bromomethane			20.0	30.1		ug/L		150	70 - 130	4	20
n-Butylbenzene			20.0	20.5		ug/L		102	70 - 130	1	20
sec-Butylbenzene			20.0	20.5		ug/L		103	70 - 130	1	20
tert-Butylbenzene			20.0	20.4		ug/L		102	70 - 130	1	20
Carbon tetrachloride			20.0	21.4		ug/L		107	70 - 130	2	20
Chlorobenzene			20.0	20.3		ug/L		101	70 - 130	1	20
Dibromochloromethane			20.0	19.6		ug/L		98	70 - 130	1	20
Chloroethane			20.0	20.3		ug/L		102	70 - 130	2	20
Chloroform			20.0	21.3		ug/L		106	70 - 130	0	20
Chloromethane			20.0	20.3		ug/L		102	70 - 130	0	20
2-Chlorotoluene			20.0	19.9		ug/L		100	70 - 130	2	20
4-Chlorotoluene			20.0	19.9		ug/L		99	70 - 130	0	20
1,2-Dibromo-3-Chloropropane			20.0	19.4		ug/L		97	70 - 130	1	20
Dibromomethane			20.0	20.0		ug/L		100	70 - 130	1	20
1,2-Dichlorobenzene			20.0	20.0		ug/L		100	70 - 130	1	20
1,3-Dichlorobenzene			20.0	20.1		ug/L		100	70 - 130	0	20
1,4-Dichlorobenzene			20.0	19.9		ug/L		99	70 - 130	0	20
Dichlorodifluoromethane			20.0	19.2		ug/L		96	70 - 130	0	20
1,1-Dichloroethane			20.0	20.7		ug/L		103	70 - 130	2	20
1,2-Dichloroethane			20.0	20.5		ug/L		103	70 - 130	1	20
cis-1,2-Dichloroethene			20.0	20.5		ug/L		102	70 - 130	0	20
trans-1,2-Dichloroethene			20.0	21.1		ug/L		105	70 - 130	4	20
1,1-Dichloroethene			20.0	20.6		ug/L		103	70 - 130	3	20
1,2-Dichloropropane			20.0	20.8		ug/L		104	70 - 130	1	20
1,3-Dichloropropane			20.0	20.6		ug/L		103	70 - 130	1	20
2,2-Dichloropropane			20.0	21.5		ug/L		107	70 - 130	2	20
cis-1,3-Dichloropropene			20.0	20.2		ug/L		101	70 - 130	1	20
trans-1,3-Dichloropropene			20.0	20.0		ug/L		100	70 - 130	1	20
1,1-Dichloropropene			20.0	21.3		ug/L		107	70 - 130	1	20
Ethylbenzene			20.0	20.7		ug/L		103	70 - 130	0	20
Hexachlorobutadiene			20.0	19.7		ug/L		98	70 - 130	3	20
Isopropylbenzene			20.0	20.7		ug/L		103	70 - 130	0	20
4-Isopropyltoluene			20.0	20.4		ug/L		102	70 - 130	0	20
Methylene Chloride			20.0	19.3		ug/L		96	70 - 130	0	20
Methyl-t-Butyl Ether (MTBE)			20.0	21.5		ug/L		107	70 - 130	1	20
Naphthalene			20.0	18.4		ug/L		92	70 - 130	0	20
N-Propylbenzene			20.0	20.6		ug/L		103	70 - 130	0	20
Styrene			20.0	20.4		ug/L		102	70 - 130	0	20
1,1,1,2-Tetrachloroethane			20.0	20.5		ug/L		102	70 - 130	1	20
1,1,2,2-Tetrachloroethane			20.0	20.1		ug/L		101	70 - 130	1	20
Tetrachloroethene			20.0	21.5		ug/L		108	70 - 130	0	20
Toluene			20.0	20.9		ug/L		104	70 - 130	0	20
1,2,3-Trichlorobenzene			20.0	19.3		ug/L		96	70 - 130	1	20
1,2,4-Trichlorobenzene			20.0	19.5		ug/L		98	70 - 130	1	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-549599/4
Matrix: Water
Analysis Batch: 549599

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	20.8		ug/L		104	70 - 130	2	20
1,1,2-Trichloroethane			20.0	20.2		ug/L		101	70 - 130	2	20
Trichloroethene			20.0	20.5		ug/L		102	70 - 130	1	20
Trichlorofluoromethane			20.0	19.3		ug/L		97	70 - 130	0	20
1,2,3-Trichloropropane			20.0	20.2		ug/L		101	70 - 130	1	20
1,2,4-Trimethylbenzene			20.0	20.2		ug/L		101	70 - 130	0	20
1,3,5-Trimethylbenzene			20.0	20.4		ug/L		102	70 - 130	0	20
Vinyl chloride			20.0	20.6		ug/L		103	70 - 130	0	20
m-Xylene & p-Xylene			20.0	20.5		ug/L		103	70 - 130	1	20
o-Xylene			20.0	20.3		ug/L		102	70 - 130	0	20
Xylenes, Total			40.0	40.8		ug/L		102	70 - 130	0	20
Bromobenzene			20.0	19.9		ug/L		100	70 - 130	0	20
1,2-Dibromoethane			20.0	20.4		ug/L		102	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-526282/1-A ^2
Matrix: Water
Analysis Batch: 526858

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 526282

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	2.0	U	2.0	0.90	ug/L		09/10/21 13:26	09/13/21 23:58	2

Lab Sample ID: LCS 160-526282/2-A ^2
Matrix: Water
Analysis Batch: 526858

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 526282

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	204		ug/L		102	82 - 116		

Lab Sample ID: 280-152463-C-1-B MS ^10
Matrix: Water
Analysis Batch: 526858

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 526282

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	10	U	200	260	N	ug/L		130	82 - 116		

Lab Sample ID: 280-152463-C-1-C MSD ^10
Matrix: Water
Analysis Batch: 526858

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 526282

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	10	U	200	239	N	ug/L		120	82 - 116	8	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-152633-1
SDG: 43315

GC/MS VOA

Analysis Batch: 549599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-152633-1	43315-001	Total/NA	Water	8260C	
280-152633-2	43315-002	Total/NA	Water	8260C	
280-152633-3	43315-003	Total/NA	Water	8260C	
MB 280-549599/5	Method Blank	Total/NA	Water	8260C	
LCS 280-549599/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-549599/4	Lab Control Sample Dup	Total/NA	Water	8260C	

Metals

Prep Batch: 526282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-152633-2	43315-002	Total/NA	Water	3010A	
MB 160-526282/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 160-526282/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
280-152463-C-1-B MS ^10	Matrix Spike	Total/NA	Water	3010A	
280-152463-C-1-C MSD ^10	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 526858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-152633-2	43315-002	Total/NA	Water	6020A	526282
MB 160-526282/1-A ^2	Method Blank	Total/NA	Water	6020A	526282
LCS 160-526282/2-A ^2	Lab Control Sample	Total/NA	Water	6020A	526282
280-152463-C-1-B MS ^10	Matrix Spike	Total/NA	Water	6020A	526282
280-152463-C-1-C MSD ^10	Matrix Spike Duplicate	Total/NA	Water	6020A	526282

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-152633-1
SDG: 43315

Client Sample ID: 43315-001
Date Collected: 09/01/21 11:37
Date Received: 09/03/21 09:25

Lab Sample ID: 280-152633-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	549599	09/13/21 11:58	GO	TAL DEN

Client Sample ID: 43315-002
Date Collected: 09/01/21 11:39
Date Received: 09/03/21 09:25

Lab Sample ID: 280-152633-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	549599	09/13/21 12:21	GO	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	526282	09/10/21 13:26	CJJ	TAL SL
Total/NA	Analysis	6020A		2			526858	09/14/21 00:43	CJJ	TAL SL

Client Sample ID: 43315-003
Date Collected: 09/01/21 11:00
Date Received: 09/03/21 09:25

Lab Sample ID: 280-152633-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	549599	09/13/21 12:44	GO	TAL DEN

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-152633-1
SDG: 43315

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-02-21
A2LA	ISO/IEC 17025	2907.01	11-02-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21 *
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	09-13-21
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	07-01-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21 *
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-22
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21 *
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-22
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-22
Wyoming (UST)	A2LA	2907.01	10-31-21

Laboratory: Eurofins TestAmerica, St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11616	04-01-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3010A	Water	Thallium

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

BROOKHAVEN
NATIONAL LABORATORY

P.O.#

Chain of Custody No. 43315

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Metz	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD use TB-1 For 43316

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	~~500x~~ EPA 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	9/1/21	1137	W	RTW-1 Influent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0		1139	W	RTW-1 Effluent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0		↓	W	RTW-1 Effluent	250 ML	P	1	HNO3										x
003	E	G	TB-1	0	↓	1100	W	Trip Blank	40 ML	SC	3	HCL					x					

280-152633 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R Metz 9/2/21	Print	Print
Signature [signature] 1300	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print [signature] 09/3/21	Print	Print
Signature [signature] 0925	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 310 F (rev. 6/13) Q 1.9 IR11 CF41 0

Distribution WHITE (1) Stays with Sample YELLOW (2) Returned to Client with Report PINK (3) Lab or Other GOLDENROD (4) Field Copy (Sampler)

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 280-583948.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 280-152633-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 10/3/2021			Preservation Codes:
City: Earth City	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			Other:
Email:	WO #:			
Project Name: BNL - Project Name	Project #: 16001560			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A_DOD5/3010A_2% Chromium, Thallium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
43315-002 (280-152633-2)	9/1/21	11:39 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Level 1 radioactive	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	[illegible]	9/7/21 1300	[illegible]			
	Relinquished by: FED EX	Date/Time:	Company	Received by: FED EX. Micha Kornfinger	Date/Time: 09/8/21 13:30	Company ETA SRL
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-152633-1
SDG Number: 43315

Login Number: 152633
List Number: 1
Creator: Dubicki, Adam L

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-152633-1
SDG Number: 43315

Login Number: 152633
List Number: 2
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis
List Creation: 09/09/21 11:02 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-153051-1
Laboratory Sample Delivery Group: 43354
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
9/29/2021 11:13:19 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

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Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-153051-1
SDG: 43354

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-153051-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 280-153051-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 9/16/2021 2:50 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.6º C.

VOLATILE ORGANIC COMPOUNDS

Samples 43354-001 (280-153051-1), 43354-002 (280-153051-2) and 43354-003 (280-153051-3) were analyzed for volatile organic compounds in accordance with SW 846 Method 8260C. The samples were analyzed on 09/27/2021.

Job ID: 280-153051-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

Analytical Batch 280-551338:
The continuing calibration verification (CCV) recovered above the upper control limit for chloromethane at 23.3%D (20%D). The samples associated with this CCV were non-detect for the affected analyte; therefore, the data was reported: 43354-001 (280-153051-1), 43354-002 (280-153051-2), 43354-003 (280-153051-3), (CCV 280-551338/2), (280-153156-C-5), (280-153156-B-5 MS), and (280-153156-C-5 MSD).

Methylene Chloride was detected in method blank MB 280-551338/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 43354-002 (280-153051-2) was analyzed for metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 09/24/2021 and analyzed on 09/25/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-153051-1
SDG: 43354

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL DEN
3020A	Preparation, Total Metals	SW846	TAL DEN
5030C	Purge and Trap	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-153051-1
SDG: 43354

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-153051-1	43354-001	Water	09/14/21 13:45	09/16/21 14:50
280-153051-2	43354-002	Water	09/14/21 13:50	09/16/21 14:50
280-153051-3	43354-003	Water	09/14/21 13:30	09/16/21 14:50

Client Sample ID: 43354-001

Date Collected: 09/14/21 13:45
Date Received: 09/16/21 14:50

Lab Sample ID: 280-153051-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			09/27/21 13:22	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			09/27/21 13:22	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			09/27/21 13:22	1
Bromoform	0.50	U	0.50	0.092	ug/L			09/27/21 13:22	1
Bromomethane	0.50	U	0.50	0.27	ug/L			09/27/21 13:22	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			09/27/21 13:22	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			09/27/21 13:22	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			09/27/21 13:22	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			09/27/21 13:22	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			09/27/21 13:22	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			09/27/21 13:22	1
Chloroethane	0.50	U	0.50	0.14	ug/L			09/27/21 13:22	1
Chloroform	**0.43**	**J**	0.50	0.11	ug/L			09/27/21 13:22	1
Chloromethane	0.50	U	0.50	0.097	ug/L			09/27/21 13:22	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			09/27/21 13:22	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			09/27/21 13:22	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			09/27/21 13:22	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			09/27/21 13:22	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			09/27/21 13:22	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			09/27/21 13:22	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			09/27/21 13:22	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			09/27/21 13:22	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			09/27/21 13:22	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			09/27/21 13:22	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			09/27/21 13:22	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			09/27/21 13:22	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			09/27/21 13:22	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			09/27/21 13:22	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			09/27/21 13:22	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			09/27/21 13:22	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			09/27/21 13:22	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			09/27/21 13:22	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			09/27/21 13:22	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			09/27/21 13:22	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			09/27/21 13:22	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			09/27/21 13:22	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			09/27/21 13:22	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			09/27/21 13:22	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			09/27/21 13:22	1
Naphthalene	0.50	U	0.50	0.085	ug/L			09/27/21 13:22	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			09/27/21 13:22	1
Styrene	0.50	U	0.50	0.056	ug/L			09/27/21 13:22	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			09/27/21 13:22	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			09/27/21 13:22	1
Tetrachloroethene	**2.8**		0.50	0.072	ug/L			09/27/21 13:22	1
Toluene	0.50	U	0.50	0.041	ug/L			09/27/21 13:22	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			09/27/21 13:22	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			09/27/21 13:22	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			09/27/21 13:22	1

Client Sample ID: 43354-001

Date Collected: 09/14/21 13:45
Date Received: 09/16/21 14:50

Lab Sample ID: 280-153051-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			09/27/21 13:22	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			09/27/21 13:22	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			09/27/21 13:22	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			09/27/21 13:22	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			09/27/21 13:22	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			09/27/21 13:22	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/27/21 13:22	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			09/27/21 13:22	1
o-Xylene	0.50	U	0.50	0.095	ug/L			09/27/21 13:22	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			09/27/21 13:22	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			09/27/21 13:22	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			09/27/21 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*09/27/21 13:22*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*09/27/21 13:22*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*09/27/21 13:22*	*1*

Client Sample ID: 43354-002

Date Collected: 09/14/21 13:50
Date Received: 09/16/21 14:50

Lab Sample ID: 280-153051-2

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			09/27/21 13:46	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			09/27/21 13:46	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			09/27/21 13:46	1
Bromoform	0.50	U	0.50	0.092	ug/L			09/27/21 13:46	1
Bromomethane	0.50	U	0.50	0.27	ug/L			09/27/21 13:46	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			09/27/21 13:46	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			09/27/21 13:46	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			09/27/21 13:46	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			09/27/21 13:46	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			09/27/21 13:46	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			09/27/21 13:46	1
Chloroethane	0.50	U	0.50	0.14	ug/L			09/27/21 13:46	1
Chloroform	0.50	U	0.50	0.11	ug/L			09/27/21 13:46	1
Chloromethane	0.50	U	0.50	0.097	ug/L			09/27/21 13:46	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			09/27/21 13:46	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			09/27/21 13:46	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			09/27/21 13:46	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			09/27/21 13:46	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			09/27/21 13:46	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			09/27/21 13:46	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			09/27/21 13:46	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			09/27/21 13:46	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			09/27/21 13:46	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			09/27/21 13:46	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			09/27/21 13:46	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			09/27/21 13:46	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-153051-1
SDG: 43354

Client Sample ID: 43354-002
Date Collected: 09/14/21 13:50
Date Received: 09/16/21 14:50

Lab Sample ID: 280-153051-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			09/27/21 13:46	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			09/27/21 13:46	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			09/27/21 13:46	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			09/27/21 13:46	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			09/27/21 13:46	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			09/27/21 13:46	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			09/27/21 13:46	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			09/27/21 13:46	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			09/27/21 13:46	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			09/27/21 13:46	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			09/27/21 13:46	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			09/27/21 13:46	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			09/27/21 13:46	1
Naphthalene	0.50	U	0.50	0.085	ug/L			09/27/21 13:46	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			09/27/21 13:46	1
Styrene	0.50	U	0.50	0.056	ug/L			09/27/21 13:46	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			09/27/21 13:46	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			09/27/21 13:46	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			09/27/21 13:46	1
Toluene	0.50	U	0.50	0.041	ug/L			09/27/21 13:46	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			09/27/21 13:46	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			09/27/21 13:46	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			09/27/21 13:46	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			09/27/21 13:46	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			09/27/21 13:46	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			09/27/21 13:46	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			09/27/21 13:46	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			09/27/21 13:46	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			09/27/21 13:46	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/27/21 13:46	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			09/27/21 13:46	1
o-Xylene	0.50	U	0.50	0.095	ug/L			09/27/21 13:46	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			09/27/21 13:46	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			09/27/21 13:46	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			09/27/21 13:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*09/27/21 13:46*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*09/27/21 13:46*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*09/27/21 13:46*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	1.0	U	1.0	0.089	ug/L		09/24/21 14:37	09/25/21 01:58	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-153051-1
SDG: 43354

Client Sample ID: 43354-003
Date Collected: 09/14/21 13:30
Date Received: 09/16/21 14:50

Lab Sample ID: 280-153051-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			09/27/21 14:09	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			09/27/21 14:09	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			09/27/21 14:09	1
Bromoform	0.50	U	0.50	0.092	ug/L			09/27/21 14:09	1
Bromomethane	0.50	U	0.50	0.27	ug/L			09/27/21 14:09	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			09/27/21 14:09	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			09/27/21 14:09	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			09/27/21 14:09	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			09/27/21 14:09	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			09/27/21 14:09	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			09/27/21 14:09	1
Chloroethane	0.50	U	0.50	0.14	ug/L			09/27/21 14:09	1
Chloroform	0.50	U	0.50	0.11	ug/L			09/27/21 14:09	1
Chloromethane	0.50	U	0.50	0.097	ug/L			09/27/21 14:09	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			09/27/21 14:09	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			09/27/21 14:09	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			09/27/21 14:09	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			09/27/21 14:09	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			09/27/21 14:09	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			09/27/21 14:09	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			09/27/21 14:09	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			09/27/21 14:09	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			09/27/21 14:09	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			09/27/21 14:09	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			09/27/21 14:09	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			09/27/21 14:09	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			09/27/21 14:09	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			09/27/21 14:09	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			09/27/21 14:09	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			09/27/21 14:09	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			09/27/21 14:09	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			09/27/21 14:09	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			09/27/21 14:09	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			09/27/21 14:09	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			09/27/21 14:09	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			09/27/21 14:09	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			09/27/21 14:09	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			09/27/21 14:09	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			09/27/21 14:09	1
Naphthalene	0.50	U	0.50	0.085	ug/L			09/27/21 14:09	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			09/27/21 14:09	1
Styrene	0.50	U	0.50	0.056	ug/L			09/27/21 14:09	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			09/27/21 14:09	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			09/27/21 14:09	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			09/27/21 14:09	1
Toluene	0.50	U	0.50	0.041	ug/L			09/27/21 14:09	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			09/27/21 14:09	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			09/27/21 14:09	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			09/27/21 14:09	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-153051-1
SDG: 43354

Client Sample ID: 43354-003
Date Collected: 09/14/21 13:30
Date Received: 09/16/21 14:50

Lab Sample ID: 280-153051-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			09/27/21 14:09	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			09/27/21 14:09	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			09/27/21 14:09	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			09/27/21 14:09	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			09/27/21 14:09	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			09/27/21 14:09	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/27/21 14:09	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			09/27/21 14:09	1
o-Xylene	0.50	U	0.50	0.095	ug/L			09/27/21 14:09	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			09/27/21 14:09	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			09/27/21 14:09	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			09/27/21 14:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*		*09/27/21 14:09*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*09/27/21 14:09*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*09/27/21 14:09*	*1*

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-153051-1
SDG: 43354

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-153051-1	43354-001	103	99	101
280-153051-2	43354-002	103	102	102
280-153051-3	43354-003	105	100	102
280-153156-B-5 MS	Matrix Spike	99	99	100
280-153156-C-5 MSD	Matrix Spike Duplicate	98	101	102
LCS 280-551338/3	Lab Control Sample	100	99	101
LCSD 280-551338/4	Lab Control Sample Dup	99	101	101
MB 280-551338/6	Method Blank	105	100	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 280-551338/6
Matrix: Water
Analysis Batch: 551338

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			09/27/21 11:57	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			09/27/21 11:57	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			09/27/21 11:57	1
Bromoform	0.50	U	0.50	0.092	ug/L			09/27/21 11:57	1
Bromomethane	0.50	U	0.50	0.27	ug/L			09/27/21 11:57	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			09/27/21 11:57	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			09/27/21 11:57	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			09/27/21 11:57	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			09/27/21 11:57	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			09/27/21 11:57	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			09/27/21 11:57	1
Chloroethane	0.50	U	0.50	0.14	ug/L			09/27/21 11:57	1
Chloroform	0.50	U	0.50	0.11	ug/L			09/27/21 11:57	1
Chloromethane	0.50	U	0.50	0.097	ug/L			09/27/21 11:57	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			09/27/21 11:57	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			09/27/21 11:57	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			09/27/21 11:57	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			09/27/21 11:57	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			09/27/21 11:57	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			09/27/21 11:57	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			09/27/21 11:57	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			09/27/21 11:57	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			09/27/21 11:57	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			09/27/21 11:57	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			09/27/21 11:57	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			09/27/21 11:57	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			09/27/21 11:57	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			09/27/21 11:57	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			09/27/21 11:57	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			09/27/21 11:57	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			09/27/21 11:57	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			09/27/21 11:57	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			09/27/21 11:57	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			09/27/21 11:57	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			09/27/21 11:57	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			09/27/21 11:57	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			09/27/21 11:57	1
Methylene Chloride	0.330	J	0.50	0.098	ug/L			09/27/21 11:57	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			09/27/21 11:57	1
Naphthalene	0.50	U	0.50	0.085	ug/L			09/27/21 11:57	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			09/27/21 11:57	1
Styrene	0.50	U	0.50	0.056	ug/L			09/27/21 11:57	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			09/27/21 11:57	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			09/27/21 11:57	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			09/27/21 11:57	1
Toluene	0.50	U	0.50	0.041	ug/L			09/27/21 11:57	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			09/27/21 11:57	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			09/27/21 11:57	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-551338/6
Matrix: Water
Analysis Batch: 551338

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			09/27/21 11:57	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			09/27/21 11:57	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			09/27/21 11:57	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			09/27/21 11:57	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			09/27/21 11:57	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			09/27/21 11:57	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			09/27/21 11:57	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			09/27/21 11:57	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			09/27/21 11:57	1
o-Xylene	0.50	U	0.50	0.095	ug/L			09/27/21 11:57	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			09/27/21 11:57	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			09/27/21 11:57	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			09/27/21 11:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*		*09/27/21 11:57*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*09/27/21 11:57*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*09/27/21 11:57*	*1*

Lab Sample ID: LCS 280-551338/3
Matrix: Water
Analysis Batch: 551338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	20.7		ug/L		104	70 - 130
Bromochloromethane	20.0	19.4		ug/L		97	70 - 130
Bromodichloromethane	20.0	21.4		ug/L		107	70 - 130
Bromoform	20.0	22.5		ug/L		112	70 - 130
Bromomethane	20.0	20.1		ug/L		100	70 - 130
n-Butylbenzene	20.0	21.5		ug/L		108	70 - 130
sec-Butylbenzene	20.0	20.2		ug/L		101	70 - 130
tert-Butylbenzene	20.0	20.4		ug/L		102	70 - 130
Carbon tetrachloride	20.0	20.1		ug/L		101	70 - 130
Chlorobenzene	20.0	19.7		ug/L		98	70 - 130
Dibromochloromethane	20.0	21.4		ug/L		107	70 - 130
Chloroethane	20.0	20.4		ug/L		102	70 - 130
Chloroform	20.0	19.2		ug/L		96	70 - 130
Chloromethane	20.0	23.9		ug/L		120	70 - 130
2-Chlorotoluene	20.0	20.8		ug/L		104	70 - 130
4-Chlorotoluene	20.0	20.7		ug/L		103	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	23.1		ug/L		115	70 - 130
Dibromomethane	20.0	20.5		ug/L		102	70 - 130
1,2-Dichlorobenzene	20.0	20.3		ug/L		101	70 - 130
1,3-Dichlorobenzene	20.0	20.1		ug/L		101	70 - 130
1,4-Dichlorobenzene	20.0	19.9		ug/L		100	70 - 130
Dichlorodifluoromethane	20.0	21.0		ug/L		105	70 - 130
1,1-Dichloroethane	20.0	20.4		ug/L		102	70 - 130
1,2-Dichloroethane	20.0	20.8		ug/L		104	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-551338/3
Matrix: Water
Analysis Batch: 551338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	20.0	19.2		ug/L		96	70 - 130
trans-1,2-Dichloroethene	20.0	18.9		ug/L		94	70 - 130
1,1-Dichloroethene	20.0	18.9		ug/L		94	70 - 130
1,2-Dichloropropane	20.0	21.9		ug/L		110	70 - 130
1,3-Dichloropropane	20.0	21.2		ug/L		106	70 - 130
2,2-Dichloropropane	20.0	19.3		ug/L		96	70 - 130
cis-1,3-Dichloropropene	20.0	21.7		ug/L		109	70 - 130
trans-1,3-Dichloropropene	20.0	21.9		ug/L		110	70 - 130
1,1-Dichloropropene	20.0	19.8		ug/L		99	70 - 130
Ethylbenzene	20.0	19.6		ug/L		98	70 - 130
Hexachlorobutadiene	20.0	19.8		ug/L		99	70 - 130
Isopropylbenzene	20.0	21.2		ug/L		106	70 - 130
4-Isopropyltoluene	20.0	21.2		ug/L		106	70 - 130
Methylene Chloride	20.0	18.3		ug/L		92	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	20.9		ug/L		105	70 - 130
Naphthalene	20.0	21.3		ug/L		107	70 - 130
N-Propylbenzene	20.0	21.0		ug/L		105	70 - 130
Styrene	20.0	20.1		ug/L		100	70 - 130
1,1,1,2-Tetrachloroethane	20.0	20.8		ug/L		104	70 - 130
1,1,2,2-Tetrachloroethane	20.0	21.9		ug/L		109	70 - 130
Tetrachloroethene	20.0	20.0		ug/L		100	70 - 130
Toluene	20.0	19.9		ug/L		100	70 - 130
1,2,3-Trichlorobenzene	20.0	20.6		ug/L		103	70 - 130
1,2,4-Trichlorobenzene	20.0	20.8		ug/L		104	70 - 130
1,1,1-Trichloroethane	20.0	19.1		ug/L		95	70 - 130
1,1,2-Trichloroethane	20.0	20.9		ug/L		105	70 - 130
Trichloroethene	20.0	20.0		ug/L		100	70 - 130
Trichlorofluoromethane	20.0	19.6		ug/L		98	70 - 130
1,2,3-Trichloropropane	20.0	22.6		ug/L		113	70 - 130
1,2,4-Trimethylbenzene	20.0	20.8		ug/L		104	70 - 130
1,3,5-Trimethylbenzene	20.0	20.9		ug/L		105	70 - 130
Vinyl chloride	20.0	23.3		ug/L		116	70 - 130
m-Xylene & p-Xylene	20.0	17.8		ug/L		89	70 - 130
o-Xylene	20.0	19.0		ug/L		95	70 - 130
Xylenes, Total	40.0	36.8		ug/L		92	70 - 130
Bromobenzene	20.0	20.3		ug/L		102	70 - 130
1,2-Dibromoethane	20.0	20.4		ug/L		102	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-551338/4
Matrix: Water
Analysis Batch: 551338

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	21.3		ug/L		106	70 - 130	3	20
Bromochloromethane	20.0	19.7		ug/L		98	70 - 130	2	20
Bromodichloromethane	20.0	21.9		ug/L		109	70 - 130	2	20
Bromoform	20.0	23.2		ug/L		116	70 - 130	3	20
Bromomethane	20.0	21.6		ug/L		108	70 - 130	7	20
n-Butylbenzene	20.0	21.9		ug/L		110	70 - 130	2	20
sec-Butylbenzene	20.0	21.0		ug/L		105	70 - 130	4	20
tert-Butylbenzene	20.0	21.0		ug/L		105	70 - 130	3	20
Carbon tetrachloride	20.0	20.3		ug/L		101	70 - 130	1	20
Chlorobenzene	20.0	20.4		ug/L		102	70 - 130	4	20
Dibromochloromethane	20.0	22.1		ug/L		111	70 - 130	4	20
Chloroethane	20.0	21.3		ug/L		106	70 - 130	4	20
Chloroform	20.0	19.5		ug/L		98	70 - 130	2	20
Chloromethane	20.0	24.5		ug/L		122	70 - 130	2	20
2-Chlorotoluene	20.0	21.1		ug/L		105	70 - 130	1	20
4-Chlorotoluene	20.0	21.2		ug/L		106	70 - 130	3	20
1,2-Dibromo-3-Chloropropane	20.0	23.8		ug/L		119	70 - 130	3	20
Dibromomethane	20.0	20.9		ug/L		104	70 - 130	2	20
1,2-Dichlorobenzene	20.0	20.7		ug/L		103	70 - 130	2	20
1,3-Dichlorobenzene	20.0	20.6		ug/L		103	70 - 130	2	20
1,4-Dichlorobenzene	20.0	20.3		ug/L		101	70 - 130	2	20
Dichlorodifluoromethane	20.0	21.1		ug/L		106	70 - 130	1	20
1,1-Dichloroethane	20.0	20.8		ug/L		104	70 - 130	2	20
1,2-Dichloroethane	20.0	21.2		ug/L		106	70 - 130	2	20
cis-1,2-Dichloroethene	20.0	19.9		ug/L		100	70 - 130	4	20
trans-1,2-Dichloroethene	20.0	19.3		ug/L		96	70 - 130	2	20
1,1-Dichloroethene	20.0	19.0		ug/L		95	70 - 130	1	20
1,2-Dichloropropane	20.0	22.4		ug/L		112	70 - 130	2	20
1,3-Dichloropropane	20.0	21.8		ug/L		109	70 - 130	3	20
2,2-Dichloropropane	20.0	19.6		ug/L		98	70 - 130	2	20
cis-1,3-Dichloropropene	20.0	22.2		ug/L		111	70 - 130	2	20
trans-1,3-Dichloropropene	20.0	22.7		ug/L		113	70 - 130	3	20
1,1-Dichloropropene	20.0	20.2		ug/L		101	70 - 130	2	20
Ethylbenzene	20.0	20.2		ug/L		101	70 - 130	3	20
Hexachlorobutadiene	20.0	20.1		ug/L		101	70 - 130	2	20
Isopropylbenzene	20.0	21.7		ug/L		109	70 - 130	3	20
4-Isopropyltoluene	20.0	21.4		ug/L		107	70 - 130	1	20
Methylene Chloride	20.0	18.2		ug/L		91	70 - 130	1	20
Methyl-t-Butyl Ether (MTBE)	20.0	21.3		ug/L		107	70 - 130	2	20
Naphthalene	20.0	22.1		ug/L		111	70 - 130	4	20
N-Propylbenzene	20.0	21.5		ug/L		107	70 - 130	2	20
Styrene	20.0	20.8		ug/L		104	70 - 130	4	20
1,1,1,2-Tetrachloroethane	20.0	21.4		ug/L		107	70 - 130	3	20
1,1,2,2-Tetrachloroethane	20.0	22.6		ug/L		113	70 - 130	3	20
Tetrachloroethene	20.0	20.7		ug/L		103	70 - 130	3	20
Toluene	20.0	20.4		ug/L		102	70 - 130	2	20
1,2,3-Trichlorobenzene	20.0	21.4		ug/L		107	70 - 130	4	20
1,2,4-Trichlorobenzene	20.0	21.4		ug/L		107	70 - 130	3	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-551338/4
Matrix: Water
Analysis Batch: 551338

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	19.4		ug/L		97	70 - 130	2	20
1,1,2-Trichloroethane			20.0	21.3		ug/L		106	70 - 130	1	20
Trichloroethene			20.0	20.4		ug/L		102	70 - 130	2	20
Trichlorofluoromethane			20.0	20.0		ug/L		100	70 - 130	2	20
1,2,3-Trichloropropane			20.0	23.6		ug/L		118	70 - 130	5	20
1,2,4-Trimethylbenzene			20.0	21.4		ug/L		107	70 - 130	3	20
1,3,5-Trimethylbenzene			20.0	21.5		ug/L		108	70 - 130	3	20
Vinyl chloride			20.0	23.6		ug/L		118	70 - 130	1	20
m-Xylene & p-Xylene			20.0	18.3		ug/L		91	70 - 130	2	20
o-Xylene			20.0	19.8		ug/L		99	70 - 130	4	20
Xylenes, Total			40.0	38.1		ug/L		95	70 - 130	3	20
Bromobenzene			20.0	21.0		ug/L		105	70 - 130	3	20
1,2-Dibromoethane			20.0	21.4		ug/L		107	70 - 130	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 280-153156-B-5 MS
Matrix: Water
Analysis Batch: 551338

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.50	U	20.0	22.3		ug/L		112	70 - 130
Bromochloromethane	0.50	U	20.0	20.2		ug/L		101	70 - 130
Bromodichloromethane	0.50	U	20.0	22.4		ug/L		112	70 - 130
Bromoform	0.50	U	20.0	22.9		ug/L		115	70 - 130
Bromomethane	0.50	U	20.0	18.5		ug/L		92	70 - 130
n-Butylbenzene	0.50	U	20.0	22.0		ug/L		110	70 - 130
sec-Butylbenzene	0.50	U	20.0	21.5		ug/L		107	70 - 130
tert-Butylbenzene	0.50	U	20.0	21.7		ug/L		108	70 - 130
Carbon tetrachloride	0.50	U	20.0	21.7		ug/L		109	70 - 130
Chlorobenzene	0.50	U	20.0	21.3		ug/L		106	70 - 130
Dibromochloromethane	0.50	U	20.0	22.1		ug/L		111	70 - 130
Chloroethane	0.50	U	20.0	20.2		ug/L		101	70 - 130
Chloroform	1.3		20.0	22.0		ug/L		104	70 - 130
Chloromethane	0.50	U	20.0	22.7		ug/L		113	70 - 130
2-Chlorotoluene	0.50	U	20.0	21.8		ug/L		109	70 - 130
4-Chlorotoluene	0.50	U	20.0	21.7		ug/L		108	70 - 130
1,2-Dibromo-3-Chloropropane	0.50	U	20.0	23.5		ug/L		118	70 - 130
Dibromomethane	0.50	U	20.0	21.4		ug/L		107	70 - 130
1,2-Dichlorobenzene	0.50	U	20.0	21.2		ug/L		106	70 - 130
1,3-Dichlorobenzene	0.50	U	20.0	21.2		ug/L		106	70 - 130
1,4-Dichlorobenzene	0.50	U	20.0	20.7		ug/L		104	70 - 130
Dichlorodifluoromethane	0.50	U	20.0	18.8		ug/L		94	70 - 130
1,1-Dichloroethane	0.50	U	20.0	22.3		ug/L		111	70 - 130
1,2-Dichloroethane	0.50	U	20.0	21.9		ug/L		109	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: 280-153156-B-5 MS
Matrix: Water
Analysis Batch: 551338

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	0.50	U	20.0	20.7		ug/L		104	70 - 130
trans-1,2-Dichloroethene	0.50	U	20.0	20.4		ug/L		102	70 - 130
1,1-Dichloroethene	0.50	U	20.0	21.0		ug/L		105	70 - 130
1,2-Dichloropropane	0.50	U	20.0	23.4		ug/L		117	70 - 130
1,3-Dichloropropane	0.50	U	20.0	22.2		ug/L		111	70 - 130
2,2-Dichloropropane	0.50	U	20.0	17.0		ug/L		85	70 - 130
cis-1,3-Dichloropropene	0.50	U	20.0	21.2		ug/L		106	70 - 130
trans-1,3-Dichloropropene	0.50	U	20.0	21.6		ug/L		108	70 - 130
1,1-Dichloropropene	0.50	U	20.0	21.9		ug/L		109	70 - 130
Ethylbenzene	0.50	U	20.0	21.2		ug/L		106	70 - 130
Hexachlorobutadiene	0.50	U	20.0	19.7		ug/L		99	70 - 130
Isopropylbenzene	0.50	U	20.0	22.3		ug/L		112	70 - 130
4-Isopropyltoluene	0.50	U	20.0	21.9		ug/L		110	70 - 130
Methylene Chloride	0.50	U	20.0	19.5		ug/L		97	70 - 130
Methyl-t-Butyl Ether (MTBE)	0.50	U	20.0	21.1		ug/L		105	70 - 130
Naphthalene	0.50	U	20.0	21.4		ug/L		107	70 - 130
N-Propylbenzene	0.50	U	20.0	22.3		ug/L		112	70 - 130
Styrene	0.50	U	20.0	21.5		ug/L		107	70 - 130
1,1,1,2-Tetrachloroethane	0.50	U	20.0	22.1		ug/L		111	70 - 130
1,1,2,2-Tetrachloroethane	0.50	U	20.0	22.9		ug/L		114	70 - 130
Tetrachloroethene	0.41	J	20.0	22.0		ug/L		108	70 - 130
Toluene	0.50	U	20.0	21.6		ug/L		108	70 - 130
1,2,3-Trichlorobenzene	0.50	U	20.0	20.7		ug/L		103	70 - 130
1,2,4-Trichlorobenzene	0.50	U	20.0	20.6		ug/L		103	70 - 130
1,1,1-Trichloroethane	0.50	U	20.0	20.9		ug/L		105	70 - 130
1,1,2-Trichloroethane	0.50	U	20.0	22.1		ug/L		110	70 - 130
Trichloroethene	0.50	U	20.0	21.3		ug/L		106	70 - 130
Trichlorofluoromethane	0.50	U	20.0	17.2		ug/L		86	70 - 130
1,2,3-Trichloropropane	0.50	U	20.0	24.0		ug/L		120	70 - 130
1,2,4-Trimethylbenzene	0.50	U	20.0	22.0		ug/L		110	70 - 130
1,3,5-Trimethylbenzene	0.50	U	20.0	22.1		ug/L		111	70 - 130
Vinyl chloride	0.50	U	20.0	21.5		ug/L		107	70 - 130
m-Xylene & p-Xylene	1.0	U	20.0	19.0		ug/L		95	70 - 130
o-Xylene	0.50	U	20.0	20.5		ug/L		102	70 - 130
Xylenes, Total	1.5	U	40.0	39.5		ug/L		99	70 - 130
Bromobenzene	0.50	U	20.0	21.4		ug/L		107	70 - 130
1,2-Dibromoethane	0.50	U	20.0	21.4		ug/L		107	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: 280-153156-C-5 MSD
Matrix: Water
Analysis Batch: 551338

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.50	U	20.0	23.5		ug/L		117	70 - 130	5	20
Bromochloromethane	0.50	U	20.0	21.2		ug/L		106	70 - 130	5	20
Bromodichloromethane	0.50	U	20.0	23.4		ug/L		117	70 - 130	4	20
Bromoform	0.50	U	20.0	23.9		ug/L		120	70 - 130	4	20
Bromomethane	0.50	U	20.0	22.7		ug/L		114	70 - 130	21	20
n-Butylbenzene	0.50	U	20.0	22.8		ug/L		114	70 - 130	4	20
sec-Butylbenzene	0.50	U	20.0	22.7		ug/L		113	70 - 130	6	20
tert-Butylbenzene	0.50	U	20.0	22.7		ug/L		114	70 - 130	5	20
Carbon tetrachloride	0.50	U	20.0	22.6		ug/L		113	70 - 130	4	20
Chlorobenzene	0.50	U	20.0	22.3		ug/L		112	70 - 130	5	20
Dibromochloromethane	0.50	U	20.0	23.3		ug/L		117	70 - 130	5	20
Chloroethane	0.50	U	20.0	22.7		ug/L		114	70 - 130	12	20
Chloroform	1.3		20.0	22.6		ug/L		106	70 - 130	2	20
Chloromethane	0.50	U	20.0	26.4		ug/L		132	70 - 130	15	20
2-Chlorotoluene	0.50	U	20.0	23.2		ug/L		116	70 - 130	6	20
4-Chlorotoluene	0.50	U	20.0	22.8		ug/L		114	70 - 130	5	20
1,2-Dibromo-3-Chloropropane	0.50	U	20.0	23.3		ug/L		117	70 - 130	1	20
Dibromomethane	0.50	U	20.0	21.9		ug/L		109	70 - 130	2	20
1,2-Dichlorobenzene	0.50	U	20.0	22.1		ug/L		110	70 - 130	4	20
1,3-Dichlorobenzene	0.50	U	20.0	22.2		ug/L		111	70 - 130	4	20
1,4-Dichlorobenzene	0.50	U	20.0	21.9		ug/L		109	70 - 130	5	20
Dichlorodifluoromethane	0.50	U	20.0	21.2		ug/L		106	70 - 130	12	20
1,1-Dichloroethane	0.50	U	20.0	22.9		ug/L		115	70 - 130	3	20
1,2-Dichloroethane	0.50	U	20.0	22.7		ug/L		113	70 - 130	4	20
cis-1,2-Dichloroethene	0.50	U	20.0	21.6		ug/L		108	70 - 130	4	20
trans-1,2-Dichloroethene	0.50	U	20.0	21.5		ug/L		108	70 - 130	5	20
1,1-Dichloroethene	0.50	U	20.0	21.6		ug/L		108	70 - 130	3	20
1,2-Dichloropropane	0.50	U	20.0	24.5		ug/L		123	70 - 130	5	20
1,3-Dichloropropane	0.50	U	20.0	23.0		ug/L		115	70 - 130	4	20
2,2-Dichloropropane	0.50	U	20.0	17.4		ug/L		87	70 - 130	2	20
cis-1,3-Dichloropropene	0.50	U	20.0	22.6		ug/L		113	70 - 130	6	20
trans-1,3-Dichloropropene	0.50	U	20.0	22.6		ug/L		113	70 - 130	5	20
1,1-Dichloropropene	0.50	U	20.0	22.8		ug/L		114	70 - 130	4	20
Ethylbenzene	0.50	U	20.0	22.2		ug/L		111	70 - 130	5	20
Hexachlorobutadiene	0.50	U	20.0	19.7		ug/L		99	70 - 130	0	20
Isopropylbenzene	0.50	U	20.0	23.5		ug/L		118	70 - 130	5	20
4-Isopropyltoluene	0.50	U	20.0	22.8		ug/L		114	70 - 130	4	20
Methylene Chloride	0.50	U	20.0	20.7		ug/L		103	70 - 130	6	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	20.0	21.8		ug/L		109	70 - 130	3	20
Naphthalene	0.50	U	20.0	22.3		ug/L		111	70 - 130	4	20
N-Propylbenzene	0.50	U	20.0	23.3		ug/L		116	70 - 130	4	20
Styrene	0.50	U	20.0	22.4		ug/L		112	70 - 130	4	20
1,1,1,2-Tetrachloroethane	0.50	U	20.0	23.0		ug/L		115	70 - 130	4	20
1,1,2,2-Tetrachloroethane	0.50	U	20.0	23.5		ug/L		118	70 - 130	3	20
Tetrachloroethene	0.41	J	20.0	22.9		ug/L		112	70 - 130	4	20
Toluene	0.50	U	20.0	22.4		ug/L		112	70 - 130	3	20
1,2,3-Trichlorobenzene	0.50	U	20.0	21.8		ug/L		109	70 - 130	5	20
1,2,4-Trichlorobenzene	0.50	U	20.0	21.7		ug/L		109	70 - 130	5	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: 280-153156-C-5 MSD
Matrix: Water
Analysis Batch: 551338

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.50	U	20.0	21.7		ug/L		109	70 - 130	4	20
1,1,2-Trichloroethane	0.50	U	20.0	22.5		ug/L		112	70 - 130	2	20
Trichloroethene	0.50	U	20.0	22.7		ug/L		114	70 - 130	7	20
Trichlorofluoromethane	0.50	U	20.0	20.4		ug/L		102	70 - 130	17	20
1,2,3-Trichloropropane	0.50	U	20.0	23.9		ug/L		120	70 - 130	0	20
1,2,4-Trimethylbenzene	0.50	U	20.0	23.1		ug/L		115	70 - 130	5	20
1,3,5-Trimethylbenzene	0.50	U	20.0	23.3		ug/L		116	70 - 130	5	20
Vinyl chloride	0.50	U	20.0	24.2		ug/L		121	70 - 130	12	20
m-Xylene & p-Xylene	1.0	U	20.0	20.1		ug/L		101	70 - 130	6	20
o-Xylene	0.50	U	20.0	21.4		ug/L		107	70 - 130	5	20
Xylenes, Total	1.5	U	40.0	41.5		ug/L		104	70 - 130	5	20
Bromobenzene	0.50	U	20.0	22.4		ug/L		112	70 - 130	5	20
1,2-Dibromoethane	0.50	U	20.0	22.0		ug/L		110	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-550567/1-A
Matrix: Water
Analysis Batch: 551209

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 550567

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	1.0	U	1.0	0.089	ug/L		09/24/21 14:37	09/25/21 01:50	1

Lab Sample ID: LCS 280-550567/2-A
Matrix: Water
Analysis Batch: 551209

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 550567

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			40.0	37.9		ug/L		95	85 - 118		

Lab Sample ID: 280-153181-C-1-G MS
Matrix: Water
Analysis Batch: 551209

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 550567

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	1.0	U	40.0	36.3		ug/L		91	85 - 118		

Lab Sample ID: 280-153181-C-1-H MSD
Matrix: Water
Analysis Batch: 551209

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 550567

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	1.0	U	40.0	36.5		ug/L		91	85 - 118	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-153051-1
SDG: 43354

GC/MS VOA

Analysis Batch: 551338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153051-1	43354-001	Total/NA	Water	8260C	
280-153051-2	43354-002	Total/NA	Water	8260C	
280-153051-3	43354-003	Total/NA	Water	8260C	
MB 280-551338/6	Method Blank	Total/NA	Water	8260C	
LCS 280-551338/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-551338/4	Lab Control Sample Dup	Total/NA	Water	8260C	
280-153156-B-5 MS	Matrix Spike	Total/NA	Water	8260C	
280-153156-C-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260C	

Metals

Prep Batch: 550567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153051-2	43354-002	Total/NA	Water	3020A	
MB 280-550567/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-550567/2-A	Lab Control Sample	Total/NA	Water	3020A	
280-153181-C-1-G MS	Matrix Spike	Total/NA	Water	3020A	
280-153181-C-1-H MSD	Matrix Spike Duplicate	Total/NA	Water	3020A	

Analysis Batch: 551209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153051-2	43354-002	Total/NA	Water	6020A	550567
MB 280-550567/1-A	Method Blank	Total/NA	Water	6020A	550567
LCS 280-550567/2-A	Lab Control Sample	Total/NA	Water	6020A	550567
280-153181-C-1-G MS	Matrix Spike	Total/NA	Water	6020A	550567
280-153181-C-1-H MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	550567

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-153051-1
SDG: 43354

Client Sample ID: 43354-001
Date Collected: 09/14/21 13:45
Date Received: 09/16/21 14:50

Lab Sample ID: 280-153051-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	551338	09/27/21 13:22	GO	TAL DEN

Client Sample ID: 43354-002
Date Collected: 09/14/21 13:50
Date Received: 09/16/21 14:50

Lab Sample ID: 280-153051-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	551338	09/27/21 13:46	GO	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	550567	09/24/21 14:37	ABW	TAL DEN
Total/NA	Analysis	6020A		1			551209	09/25/21 01:58	LRD	TAL DEN

Client Sample ID: 43354-003
Date Collected: 09/14/21 13:30
Date Received: 09/16/21 14:50

Lab Sample ID: 280-153051-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	551338	09/27/21 14:09	GO	TAL DEN

Laboratory References:
TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-153051-1
SDG: 43354

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-02-21
A2LA	ISO/IEC 17025	2907.01	11-02-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21 *
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-22
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	07-01-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21 *
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-22
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21 *
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-22
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-22
Wyoming (UST)	A2LA	2907.01	10-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O.# _____

Chain of Custody No. 43354

Requires EDD

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Meatz	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type UID	Smp	Col	Sample Information: Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information: Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	900x EPA 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	9/1/21	1345	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		↓	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0		1350	W	RTW-1 Effluent	250 ML	P	1	HNO3										X
003	E	G	TB-1	0		1330	W	Trip Blank	40 ML	SC	3	HCL					X					

280-153051 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. Meatz 9/15/21	Print	Print
Signature 1330	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Ivan Vania 09/16/21	Print	Print
Signature 1450	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☐ Archive For ____ Months
- ☒ Disposal by Lab

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☐ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

BNL F 3101F (rev. 6/13) 1.0 FRH CH10

Distribution WHITE (1) Stays with Sample YELLOW (2) Returned to Client with Report PINK (3) Lab or Other GOLDENROD (4) Field Copy (Sampler)

Page _____ of _____

BROOKHAVEN NATIONAL LABORATORY

P.O.# _____

Chain of Custody No. 43354

Requires EDD ☐

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name:	Name:	Name:
Life No: Ext.	Contact:	Address:
Acct. No: Dept:	Phone:	City: St: Zip:
Email Reports To:	Email/Fax:	Contact:
1	Sampler:	Phone:
2		Email/Fax:
Project Name:	Project Manager:	Field Engineer:

Comments:

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals			

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print	Print	Print
Signature	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print	Print	Print
Signature	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☐ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☐ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☐ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-153051-1
SDG Number: 43354

Login Number: 153051
List Number: 1
Creator: Dubicki, Adam L

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-153959-1
Laboratory Sample Delivery Group: 43402
Client Project/Site: BNL - OU3&B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
10/19/2021 5:22:24 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3&B96

Job ID: 280-153959-1
SDG: 43402

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-153959-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3&B96

Report Number: 280-153959-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 10/7/2021 10:55 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.1º C.

VOLATILE ORGANIC COMPOUNDS

Samples 43402-001 (280-153959-1), 43402-002 (280-153959-2), 43402-003 (280-153959-3), 43402-004 (280-153959-4), 43402-005 (280-153959-5) and 43402-006 (280-153959-6) were analyzed for volatile organic compounds in accordance with SW 846 Method 8260C.

Job ID: 280-153959-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

The samples were analyzed on 10/17/2021 and 10/18/2021.

Analytical Batch 280-553889:
The continuing calibration verification (CCV) recovered above the upper control limit for numerous analytes. The samples associated with this CCV were non-detect for the affected analytes except samples 280-153958-7, 280-153958-10, 280-153958-15, and 43402-001 (280-153959-1), that had detection of trichlorofluoromethane above the MDL but below the RL; therefore, the data was reported: 43402-001 (280-153959-1), 43402-002 (280-153959-2), 43402-003 (280-153959-3), 43402-004 (280-153959-4), 43402-005 (280-153959-5), (CCV 280-553889/2), and (280-153958-B-7).

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for recovered outside the upper control limit for numerous analytes. These analytes were biased high in the LCS and were not detected in the associated samples except samples 280-153958-7, 280-153958-10, 280-153958-15, and 43402-001 (280-153959-1), that had trichlorofluoromethane above the MDL but below the RL; therefore, the data was reported.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for numerous analytes were outside the upper control limit. The LCS and/or LCSD also recovered high for some analytes, but the associated samples were non-detect for these analytes except for trichlorofluoromethane which was above the MDL but below the RL in a few samples.

Analytical Batch 280-553946:
The laboratory control sample (LCS) recovered outside control limits for the following analytes: Dichlorodifluoromethane at 137% (70-130%) and Trichlorofluoromethane at 133% (70-130%). These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data was reported.

The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recovered outside control limits for Dichlorodifluoromethane at 25% (20%).

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS- METALS
Sample 43402-002 (280-153959-2) was analyzed for ICP-MS- metals in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 10/11/2021 and analyzed on 10/13/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3&B96

Job ID: 280-153959-1
SDG: 43402

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL DEN
5030C	Purge and Trap	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3&B96

Job ID: 280-153959-1
SDG: 43402

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-153959-1	43402-001	Water	10/05/21 15:00	10/07/21 10:55
280-153959-2	43402-002	Water	10/05/21 15:05	10/07/21 10:55
280-153959-3	43402-003	Water	10/05/21 15:20	10/07/21 10:55
280-153959-4	43402-004	Water	10/05/21 15:30	10/07/21 10:55
280-153959-5	43402-005	Water	10/05/21 15:40	10/07/21 10:55
280-153959-6	43402-006	Water	10/05/21 14:00	10/07/21 10:55

Client: Brookhaven National Labs
Project/Site: BNL - OU3&B96

Job ID: 280-153959-1
SDG: 43402

Client Sample ID: 43402-001
Date Collected: 10/05/21 15:00
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			10/17/21 22:54	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			10/17/21 22:54	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			10/17/21 22:54	1
Bromoform	0.50	U	0.50	0.092	ug/L			10/17/21 22:54	1
Bromomethane	0.50	U	0.50	0.27	ug/L			10/17/21 22:54	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			10/17/21 22:54	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			10/17/21 22:54	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			10/17/21 22:54	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			10/17/21 22:54	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			10/17/21 22:54	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			10/17/21 22:54	1
Chloroethane	0.50	U	0.50	0.14	ug/L			10/17/21 22:54	1
Chloroform	**0.57**		0.50	0.11	ug/L			10/17/21 22:54	1
Chloromethane	0.50	U	0.50	0.097	ug/L			10/17/21 22:54	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			10/17/21 22:54	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			10/17/21 22:54	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			10/17/21 22:54	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			10/17/21 22:54	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			10/17/21 22:54	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			10/17/21 22:54	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			10/17/21 22:54	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			10/17/21 22:54	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			10/17/21 22:54	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			10/17/21 22:54	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			10/17/21 22:54	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			10/17/21 22:54	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			10/17/21 22:54	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			10/17/21 22:54	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			10/17/21 22:54	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			10/17/21 22:54	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			10/17/21 22:54	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			10/17/21 22:54	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			10/17/21 22:54	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			10/17/21 22:54	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			10/17/21 22:54	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			10/17/21 22:54	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			10/17/21 22:54	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			10/17/21 22:54	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			10/17/21 22:54	1
Naphthalene	0.50	U	0.50	0.085	ug/L			10/17/21 22:54	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			10/17/21 22:54	1
Styrene	0.50	U	0.50	0.056	ug/L			10/17/21 22:54	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			10/17/21 22:54	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			10/17/21 22:54	1
Tetrachloroethene	**3.5**		0.50	0.072	ug/L			10/17/21 22:54	1
Toluene	0.50	U	0.50	0.041	ug/L			10/17/21 22:54	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			10/17/21 22:54	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			10/17/21 22:54	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			10/17/21 22:54	1

Client Sample ID: 43402-001

Date Collected: 10/05/21 15:00
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			10/17/21 22:54	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			10/17/21 22:54	1
Trichlorofluoromethane	**0.21**	**J**	0.50	0.057	ug/L			10/17/21 22:54	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			10/17/21 22:54	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			10/17/21 22:54	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			10/17/21 22:54	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/17/21 22:54	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			10/17/21 22:54	1
o-Xylene	0.50	U	0.50	0.095	ug/L			10/17/21 22:54	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			10/17/21 22:54	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			10/17/21 22:54	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			10/17/21 22:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*		*10/17/21 22:54*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*10/17/21 22:54*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*10/17/21 22:54*	*1*

Client Sample ID: 43402-002

Date Collected: 10/05/21 15:05
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-2

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			10/17/21 23:17	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			10/17/21 23:17	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			10/17/21 23:17	1
Bromoform	0.50	U	0.50	0.092	ug/L			10/17/21 23:17	1
Bromomethane	0.50	U	0.50	0.27	ug/L			10/17/21 23:17	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			10/17/21 23:17	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			10/17/21 23:17	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			10/17/21 23:17	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			10/17/21 23:17	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			10/17/21 23:17	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			10/17/21 23:17	1
Chloroethane	0.50	U	0.50	0.14	ug/L			10/17/21 23:17	1
Chloroform	0.50	U	0.50	0.11	ug/L			10/17/21 23:17	1
Chloromethane	0.50	U	0.50	0.097	ug/L			10/17/21 23:17	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			10/17/21 23:17	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			10/17/21 23:17	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			10/17/21 23:17	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			10/17/21 23:17	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			10/17/21 23:17	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			10/17/21 23:17	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			10/17/21 23:17	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			10/17/21 23:17	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			10/17/21 23:17	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			10/17/21 23:17	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			10/17/21 23:17	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			10/17/21 23:17	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3&B96

Job ID: 280-153959-1
SDG: 43402

Client Sample ID: 43402-002
Date Collected: 10/05/21 15:05
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			10/17/21 23:17	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			10/17/21 23:17	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			10/17/21 23:17	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			10/17/21 23:17	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			10/17/21 23:17	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			10/17/21 23:17	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			10/17/21 23:17	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			10/17/21 23:17	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			10/17/21 23:17	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			10/17/21 23:17	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			10/17/21 23:17	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			10/17/21 23:17	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			10/17/21 23:17	1
Naphthalene	0.50	U	0.50	0.085	ug/L			10/17/21 23:17	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			10/17/21 23:17	1
Styrene	0.50	U	0.50	0.056	ug/L			10/17/21 23:17	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			10/17/21 23:17	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			10/17/21 23:17	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			10/17/21 23:17	1
Toluene	0.50	U	0.50	0.041	ug/L			10/17/21 23:17	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			10/17/21 23:17	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			10/17/21 23:17	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			10/17/21 23:17	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			10/17/21 23:17	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			10/17/21 23:17	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			10/17/21 23:17	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			10/17/21 23:17	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			10/17/21 23:17	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			10/17/21 23:17	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/17/21 23:17	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			10/17/21 23:17	1
o-Xylene	0.50	U	0.50	0.095	ug/L			10/17/21 23:17	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			10/17/21 23:17	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			10/17/21 23:17	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			10/17/21 23:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*		*10/17/21 23:17*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*10/17/21 23:17*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*10/17/21 23:17*	*1*

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	0.20	U	0.20	0.089	ug/L		10/11/21 15:10	10/13/21 00:12	1

Client Sample ID: 43402-003

Date Collected: 10/05/21 15:20
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-3

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			10/17/21 23:41	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			10/17/21 23:41	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			10/17/21 23:41	1
Bromoform	0.50	U	0.50	0.092	ug/L			10/17/21 23:41	1
Bromomethane	0.50	U	0.50	0.27	ug/L			10/17/21 23:41	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			10/17/21 23:41	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			10/17/21 23:41	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			10/17/21 23:41	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			10/17/21 23:41	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			10/17/21 23:41	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			10/17/21 23:41	1
Chloroethane	0.50	U	0.50	0.14	ug/L			10/17/21 23:41	1
Chloroform	**1.1**		0.50	0.11	ug/L			10/17/21 23:41	1
Chloromethane	0.50	U	0.50	0.097	ug/L			10/17/21 23:41	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			10/17/21 23:41	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			10/17/21 23:41	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			10/17/21 23:41	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			10/17/21 23:41	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			10/17/21 23:41	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			10/17/21 23:41	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			10/17/21 23:41	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			10/17/21 23:41	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			10/17/21 23:41	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			10/17/21 23:41	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			10/17/21 23:41	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			10/17/21 23:41	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			10/17/21 23:41	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			10/17/21 23:41	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			10/17/21 23:41	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			10/17/21 23:41	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			10/17/21 23:41	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			10/17/21 23:41	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			10/17/21 23:41	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			10/17/21 23:41	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			10/17/21 23:41	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			10/17/21 23:41	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			10/17/21 23:41	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			10/17/21 23:41	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			10/17/21 23:41	1
Naphthalene	0.50	U	0.50	0.085	ug/L			10/17/21 23:41	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			10/17/21 23:41	1
Styrene	0.50	U	0.50	0.056	ug/L			10/17/21 23:41	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			10/17/21 23:41	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			10/17/21 23:41	1
Tetrachloroethene	**0.35**	**J**	0.50	0.072	ug/L			10/17/21 23:41	1
Toluene	0.50	U	0.50	0.041	ug/L			10/17/21 23:41	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			10/17/21 23:41	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			10/17/21 23:41	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			10/17/21 23:41	1

Client Sample ID: 43402-003

Date Collected: 10/05/21 15:20
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-3

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			10/17/21 23:41	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			10/17/21 23:41	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			10/17/21 23:41	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			10/17/21 23:41	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			10/17/21 23:41	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			10/17/21 23:41	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/17/21 23:41	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			10/17/21 23:41	1
o-Xylene	0.50	U	0.50	0.095	ug/L			10/17/21 23:41	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			10/17/21 23:41	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			10/17/21 23:41	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			10/17/21 23:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*		*10/17/21 23:41*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*10/17/21 23:41*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*10/17/21 23:41*	*1*

Client Sample ID: 43402-004

Date Collected: 10/05/21 15:30
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-4

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			10/18/21 00:04	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			10/18/21 00:04	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			10/18/21 00:04	1
Bromoform	0.50	U	0.50	0.092	ug/L			10/18/21 00:04	1
Bromomethane	0.50	U	0.50	0.27	ug/L			10/18/21 00:04	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			10/18/21 00:04	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			10/18/21 00:04	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			10/18/21 00:04	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			10/18/21 00:04	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			10/18/21 00:04	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			10/18/21 00:04	1
Chloroethane	0.50	U	0.50	0.14	ug/L			10/18/21 00:04	1
Chloroform	**0.92**		0.50	0.11	ug/L			10/18/21 00:04	1
Chloromethane	0.50	U	0.50	0.097	ug/L			10/18/21 00:04	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			10/18/21 00:04	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			10/18/21 00:04	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			10/18/21 00:04	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			10/18/21 00:04	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			10/18/21 00:04	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			10/18/21 00:04	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			10/18/21 00:04	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			10/18/21 00:04	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			10/18/21 00:04	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			10/18/21 00:04	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			10/18/21 00:04	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			10/18/21 00:04	1

Client Sample ID: 43402-004

Date Collected: 10/05/21 15:30
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-4

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			10/18/21 00:04	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			10/18/21 00:04	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			10/18/21 00:04	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			10/18/21 00:04	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			10/18/21 00:04	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			10/18/21 00:04	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			10/18/21 00:04	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			10/18/21 00:04	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			10/18/21 00:04	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			10/18/21 00:04	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			10/18/21 00:04	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			10/18/21 00:04	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			10/18/21 00:04	1
Naphthalene	0.50	U	0.50	0.085	ug/L			10/18/21 00:04	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			10/18/21 00:04	1
Styrene	0.50	U	0.50	0.056	ug/L			10/18/21 00:04	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			10/18/21 00:04	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			10/18/21 00:04	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			10/18/21 00:04	1
Toluene	0.50	U	0.50	0.041	ug/L			10/18/21 00:04	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			10/18/21 00:04	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			10/18/21 00:04	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			10/18/21 00:04	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			10/18/21 00:04	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			10/18/21 00:04	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			10/18/21 00:04	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			10/18/21 00:04	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			10/18/21 00:04	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			10/18/21 00:04	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/18/21 00:04	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			10/18/21 00:04	1
o-Xylene	0.50	U	0.50	0.095	ug/L			10/18/21 00:04	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			10/18/21 00:04	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			10/18/21 00:04	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			10/18/21 00:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*10/18/21 00:04*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*10/18/21 00:04*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*10/18/21 00:04*	*1*

Client Sample ID: 43402-005

Date Collected: 10/05/21 15:40
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-5

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			10/18/21 00:28	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			10/18/21 00:28	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			10/18/21 00:28	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3&B96

Job ID: 280-153959-1
SDG: 43402

Client Sample ID: 43402-005
Date Collected: 10/05/21 15:40
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-5
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.50	U	0.50	0.092	ug/L			10/18/21 00:28	1
Bromomethane	0.50	U	0.50	0.27	ug/L			10/18/21 00:28	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			10/18/21 00:28	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			10/18/21 00:28	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			10/18/21 00:28	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			10/18/21 00:28	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			10/18/21 00:28	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			10/18/21 00:28	1
Chloroethane	0.50	U	0.50	0.14	ug/L			10/18/21 00:28	1
Chloroform	0.50	U	0.50	0.11	ug/L			10/18/21 00:28	1
Chloromethane	0.50	U	0.50	0.097	ug/L			10/18/21 00:28	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			10/18/21 00:28	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			10/18/21 00:28	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			10/18/21 00:28	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			10/18/21 00:28	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			10/18/21 00:28	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			10/18/21 00:28	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			10/18/21 00:28	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			10/18/21 00:28	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			10/18/21 00:28	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			10/18/21 00:28	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			10/18/21 00:28	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			10/18/21 00:28	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			10/18/21 00:28	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			10/18/21 00:28	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			10/18/21 00:28	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			10/18/21 00:28	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			10/18/21 00:28	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			10/18/21 00:28	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			10/18/21 00:28	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			10/18/21 00:28	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			10/18/21 00:28	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			10/18/21 00:28	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			10/18/21 00:28	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			10/18/21 00:28	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			10/18/21 00:28	1
Naphthalene	0.50	U	0.50	0.085	ug/L			10/18/21 00:28	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			10/18/21 00:28	1
Styrene	0.50	U	0.50	0.056	ug/L			10/18/21 00:28	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			10/18/21 00:28	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			10/18/21 00:28	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			10/18/21 00:28	1
Toluene	0.50	U	0.50	0.041	ug/L			10/18/21 00:28	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			10/18/21 00:28	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			10/18/21 00:28	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			10/18/21 00:28	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			10/18/21 00:28	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			10/18/21 00:28	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			10/18/21 00:28	1

Client Sample ID: 43402-005

Date Collected: 10/05/21 15:40
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-5

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			10/18/21 00:28	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			10/18/21 00:28	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			10/18/21 00:28	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/18/21 00:28	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			10/18/21 00:28	1
o-Xylene	0.50	U	0.50	0.095	ug/L			10/18/21 00:28	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			10/18/21 00:28	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			10/18/21 00:28	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			10/18/21 00:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 130*		*10/18/21 00:28*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*10/18/21 00:28*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*10/18/21 00:28*	*1*

Client Sample ID: 43402-006

Date Collected: 10/05/21 14:00
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-6

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			10/18/21 10:45	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			10/18/21 10:45	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			10/18/21 10:45	1
Bromoform	0.50	U	0.50	0.092	ug/L			10/18/21 10:45	1
Bromomethane	0.50	U	0.50	0.27	ug/L			10/18/21 10:45	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			10/18/21 10:45	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			10/18/21 10:45	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			10/18/21 10:45	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			10/18/21 10:45	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			10/18/21 10:45	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			10/18/21 10:45	1
Chloroethane	0.50	U	0.50	0.14	ug/L			10/18/21 10:45	1
Chloroform	0.50	U	0.50	0.11	ug/L			10/18/21 10:45	1
Chloromethane	0.50	U	0.50	0.097	ug/L			10/18/21 10:45	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			10/18/21 10:45	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			10/18/21 10:45	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			10/18/21 10:45	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			10/18/21 10:45	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			10/18/21 10:45	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			10/18/21 10:45	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			10/18/21 10:45	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			10/18/21 10:45	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			10/18/21 10:45	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			10/18/21 10:45	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			10/18/21 10:45	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			10/18/21 10:45	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			10/18/21 10:45	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			10/18/21 10:45	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			10/18/21 10:45	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3&B96

Job ID: 280-153959-1
SDG: 43402

Client Sample ID: 43402-006
Date Collected: 10/05/21 14:00
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-6
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			10/18/21 10:45	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			10/18/21 10:45	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			10/18/21 10:45	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			10/18/21 10:45	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			10/18/21 10:45	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			10/18/21 10:45	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			10/18/21 10:45	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			10/18/21 10:45	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			10/18/21 10:45	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			10/18/21 10:45	1
Naphthalene	0.50	U	0.50	0.085	ug/L			10/18/21 10:45	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			10/18/21 10:45	1
Styrene	0.50	U	0.50	0.056	ug/L			10/18/21 10:45	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			10/18/21 10:45	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			10/18/21 10:45	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			10/18/21 10:45	1
Toluene	0.50	U	0.50	0.041	ug/L			10/18/21 10:45	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			10/18/21 10:45	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			10/18/21 10:45	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			10/18/21 10:45	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			10/18/21 10:45	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			10/18/21 10:45	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			10/18/21 10:45	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			10/18/21 10:45	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			10/18/21 10:45	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			10/18/21 10:45	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/18/21 10:45	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			10/18/21 10:45	1
o-Xylene	0.50	U	0.50	0.095	ug/L			10/18/21 10:45	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			10/18/21 10:45	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			10/18/21 10:45	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			10/18/21 10:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*		*10/18/21 10:45*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*10/18/21 10:45*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*10/18/21 10:45*	*1*

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3&B96

Job ID: 280-153959-1
SDG: 43402

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-153958-B-7 MSD	Matrix Spike Duplicate	99	100	99
280-153958-C-7 MS	Matrix Spike	100	97	99
280-153959-1	43402-001	108	98	96
280-153959-2	43402-002	108	97	95
280-153959-3	43402-003	106	97	97
280-153959-4	43402-004	110	97	95
280-153959-5	43402-005	111	98	97
280-153959-6	43402-006	108	99	96
LCS 280-553889/3	Lab Control Sample	99	97	98
LCS 280-553946/3	Lab Control Sample	99	99	99
LCSD 280-553889/4	Lab Control Sample Dup	96	100	103
LCSD 280-553946/4	Lab Control Sample Dup	99	98	98
MB 280-553889/6	Method Blank	105	98	99
MB 280-553946/6	Method Blank	102	99	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 280-553889/6
Matrix: Water
Analysis Batch: 553889

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			10/17/21 16:36	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			10/17/21 16:36	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			10/17/21 16:36	1
Bromoform	0.50	U	0.50	0.092	ug/L			10/17/21 16:36	1
Bromomethane	0.50	U	0.50	0.27	ug/L			10/17/21 16:36	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			10/17/21 16:36	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			10/17/21 16:36	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			10/17/21 16:36	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			10/17/21 16:36	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			10/17/21 16:36	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			10/17/21 16:36	1
Chloroethane	0.50	U	0.50	0.14	ug/L			10/17/21 16:36	1
Chloroform	0.50	U	0.50	0.11	ug/L			10/17/21 16:36	1
Chloromethane	0.50	U	0.50	0.097	ug/L			10/17/21 16:36	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			10/17/21 16:36	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			10/17/21 16:36	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			10/17/21 16:36	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			10/17/21 16:36	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			10/17/21 16:36	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			10/17/21 16:36	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			10/17/21 16:36	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			10/17/21 16:36	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			10/17/21 16:36	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			10/17/21 16:36	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			10/17/21 16:36	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			10/17/21 16:36	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			10/17/21 16:36	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			10/17/21 16:36	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			10/17/21 16:36	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			10/17/21 16:36	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			10/17/21 16:36	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			10/17/21 16:36	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			10/17/21 16:36	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			10/17/21 16:36	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			10/17/21 16:36	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			10/17/21 16:36	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			10/17/21 16:36	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			10/17/21 16:36	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			10/17/21 16:36	1
Naphthalene	0.50	U	0.50	0.085	ug/L			10/17/21 16:36	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			10/17/21 16:36	1
Styrene	0.50	U	0.50	0.056	ug/L			10/17/21 16:36	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			10/17/21 16:36	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			10/17/21 16:36	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			10/17/21 16:36	1
Toluene	0.50	U	0.50	0.041	ug/L			10/17/21 16:36	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			10/17/21 16:36	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			10/17/21 16:36	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-553889/6
Matrix: Water
Analysis Batch: 553889

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			10/17/21 16:36	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			10/17/21 16:36	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			10/17/21 16:36	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			10/17/21 16:36	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			10/17/21 16:36	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			10/17/21 16:36	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			10/17/21 16:36	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/17/21 16:36	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			10/17/21 16:36	1
o-Xylene	0.50	U	0.50	0.095	ug/L			10/17/21 16:36	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			10/17/21 16:36	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			10/17/21 16:36	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			10/17/21 16:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*		*10/17/21 16:36*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*10/17/21 16:36*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*10/17/21 16:36*	*1*

Lab Sample ID: LCS 280-553889/3
Matrix: Water
Analysis Batch: 553889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	20.0		ug/L		100	70 - 130
Bromochloromethane	20.0	21.5		ug/L		107	70 - 130
Bromodichloromethane	20.0	21.2		ug/L		106	70 - 130
Bromoform	20.0	21.1		ug/L		106	70 - 130
Bromomethane	20.0	23.1		ug/L		115	70 - 130
n-Butylbenzene	20.0	22.2		ug/L		111	70 - 130
sec-Butylbenzene	20.0	22.0		ug/L		110	70 - 130
tert-Butylbenzene	20.0	21.2		ug/L		106	70 - 130
Carbon tetrachloride	20.0	21.3		ug/L		107	70 - 130
Chlorobenzene	20.0	19.6		ug/L		98	70 - 130
Dibromochloromethane	20.0	21.3		ug/L		106	70 - 130
Chloroethane	20.0	24.1		ug/L		120	70 - 130
Chloroform	20.0	21.0		ug/L		105	70 - 130
Chloromethane	20.0	24.4		ug/L		122	70 - 130
2-Chlorotoluene	20.0	20.2		ug/L		101	70 - 130
4-Chlorotoluene	20.0	20.3		ug/L		102	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	18.7		ug/L		94	70 - 130
Dibromomethane	20.0	20.3		ug/L		101	70 - 130
1,2-Dichlorobenzene	20.0	20.4		ug/L		102	70 - 130
1,3-Dichlorobenzene	20.0	19.9		ug/L		99	70 - 130
1,4-Dichlorobenzene	20.0	19.5		ug/L		97	70 - 130
Dichlorodifluoromethane	20.0	27.5		ug/L		137	70 - 130
1,1-Dichloroethane	20.0	20.6		ug/L		103	70 - 130
1,2-Dichloroethane	20.0	20.5		ug/L		103	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-553889/3
Matrix: Water
Analysis Batch: 553889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	20.0	20.5		ug/L		103	70 - 130
trans-1,2-Dichloroethene	20.0	20.5		ug/L		102	70 - 130
1,1-Dichloroethene	20.0	21.0		ug/L		105	70 - 130
1,2-Dichloropropane	20.0	20.3		ug/L		101	70 - 130
1,3-Dichloropropane	20.0	20.5		ug/L		103	70 - 130
2,2-Dichloropropane	20.0	22.2		ug/L		111	70 - 130
cis-1,3-Dichloropropene	20.0	21.0		ug/L		105	70 - 130
trans-1,3-Dichloropropene	20.0	21.4		ug/L		107	70 - 130
1,1-Dichloropropene	20.0	21.1		ug/L		106	70 - 130
Ethylbenzene	20.0	20.1		ug/L		101	70 - 130
Hexachlorobutadiene	20.0	22.3		ug/L		111	70 - 130
Isopropylbenzene	20.0	21.4		ug/L		107	70 - 130
4-Isopropyltoluene	20.0	22.4		ug/L		112	70 - 130
Methylene Chloride	20.0	20.1		ug/L		100	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	20.9		ug/L		105	70 - 130
Naphthalene	20.0	19.6		ug/L		98	70 - 130
N-Propylbenzene	20.0	20.8		ug/L		104	70 - 130
Styrene	20.0	21.2		ug/L		106	70 - 130
1,1,1,2-Tetrachloroethane	20.0	20.3		ug/L		102	70 - 130
1,1,2,2-Tetrachloroethane	20.0	19.3		ug/L		96	70 - 130
Tetrachloroethene	20.0	20.1		ug/L		101	70 - 130
Toluene	20.0	20.2		ug/L		101	70 - 130
1,2,3-Trichlorobenzene	20.0	20.1		ug/L		101	70 - 130
1,2,4-Trichlorobenzene	20.0	20.9		ug/L		105	70 - 130
1,1,1-Trichloroethane	20.0	20.9		ug/L		105	70 - 130
1,1,2-Trichloroethane	20.0	20.5		ug/L		102	70 - 130
Trichloroethene	20.0	19.9		ug/L		100	70 - 130
Trichlorofluoromethane	20.0	26.6		ug/L		133	70 - 130
1,2,3-Trichloropropane	20.0	20.0		ug/L		100	70 - 130
1,2,4-Trimethylbenzene	20.0	21.5		ug/L		108	70 - 130
1,3,5-Trimethylbenzene	20.0	21.4		ug/L		107	70 - 130
Vinyl chloride	20.0	26.2		ug/L		131	70 - 130
m-Xylene & p-Xylene	20.0	20.3		ug/L		102	70 - 130
o-Xylene	20.0	21.0		ug/L		105	70 - 130
Xylenes, Total	40.0	41.3		ug/L		103	70 - 130
Bromobenzene	20.0	20.1		ug/L		100	70 - 130
1,2-Dibromoethane	20.0	20.4		ug/L		102	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-553889/4
Matrix: Water
Analysis Batch: 553889

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	20.2		ug/L		101	70 - 130	1	20
Bromochloromethane	20.0	20.5		ug/L		103	70 - 130	4	20
Bromodichloromethane	20.0	21.4		ug/L		107	70 - 130	1	20
Bromoform	20.0	22.7		ug/L		113	70 - 130	7	20
Bromomethane	20.0	22.6		ug/L		113	70 - 130	2	20
n-Butylbenzene	20.0	23.5		ug/L		117	70 - 130	6	20
sec-Butylbenzene	20.0	22.9		ug/L		115	70 - 130	4	20
tert-Butylbenzene	20.0	22.6		ug/L		113	70 - 130	6	20
Carbon tetrachloride	20.0	20.6		ug/L		103	70 - 130	3	20
Chlorobenzene	20.0	20.0		ug/L		100	70 - 130	2	20
Dibromochloromethane	20.0	22.4		ug/L		112	70 - 130	5	20
Chloroethane	20.0	23.5		ug/L		117	70 - 130	3	20
Chloroform	20.0	20.9		ug/L		105	70 - 130	1	20
Chloromethane	20.0	23.8		ug/L		119	70 - 130	2	20
2-Chlorotoluene	20.0	21.7		ug/L		109	70 - 130	7	20
4-Chlorotoluene	20.0	22.1		ug/L		110	70 - 130	8	20
1,2-Dibromo-3-Chloropropane	20.0	21.0		ug/L		105	70 - 130	11	20
Dibromomethane	20.0	20.7		ug/L		103	70 - 130	2	20
1,2-Dichlorobenzene	20.0	21.4		ug/L		107	70 - 130	5	20
1,3-Dichlorobenzene	20.0	21.3		ug/L		106	70 - 130	7	20
1,4-Dichlorobenzene	20.0	20.8		ug/L		104	70 - 130	7	20
Dichlorodifluoromethane	20.0	26.0		ug/L		130	70 - 130	5	20
1,1-Dichloroethane	20.0	20.1		ug/L		100	70 - 130	2	20
1,2-Dichloroethane	20.0	20.7		ug/L		103	70 - 130	1	20
cis-1,2-Dichloroethene	20.0	20.6		ug/L		103	70 - 130	1	20
trans-1,2-Dichloroethene	20.0	20.5		ug/L		102	70 - 130	0	20
1,1-Dichloroethene	20.0	20.3		ug/L		102	70 - 130	3	20
1,2-Dichloropropane	20.0	20.5		ug/L		103	70 - 130	1	20
1,3-Dichloropropane	20.0	21.4		ug/L		107	70 - 130	4	20
2,2-Dichloropropane	20.0	22.3		ug/L		111	70 - 130	0	20
cis-1,3-Dichloropropene	20.0	21.7		ug/L		109	70 - 130	4	20
trans-1,3-Dichloropropene	20.0	21.7		ug/L		108	70 - 130	1	20
1,1-Dichloropropene	20.0	20.7		ug/L		104	70 - 130	2	20
Ethylbenzene	20.0	21.1		ug/L		106	70 - 130	5	20
Hexachlorobutadiene	20.0	22.7		ug/L		113	70 - 130	2	20
Isopropylbenzene	20.0	22.6		ug/L		113	70 - 130	6	20
4-Isopropyltoluene	20.0	23.7		ug/L		118	70 - 130	6	20
Methylene Chloride	20.0	20.2		ug/L		101	70 - 130	1	20
Methyl-t-Butyl Ether (MTBE)	20.0	21.3		ug/L		107	70 - 130	2	20
Naphthalene	20.0	22.2		ug/L		111	70 - 130	12	20
N-Propylbenzene	20.0	22.4		ug/L		112	70 - 130	7	20
Styrene	20.0	21.9		ug/L		110	70 - 130	3	20
1,1,1,2-Tetrachloroethane	20.0	21.0		ug/L		105	70 - 130	3	20
1,1,2,2-Tetrachloroethane	20.0	21.5		ug/L		108	70 - 130	11	20
Tetrachloroethene	20.0	20.9		ug/L		104	70 - 130	4	20
Toluene	20.0	20.3		ug/L		102	70 - 130	1	20
1,2,3-Trichlorobenzene	20.0	21.8		ug/L		109	70 - 130	8	20
1,2,4-Trichlorobenzene	20.0	22.6		ug/L		113	70 - 130	8	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-553889/4
Matrix: Water
Analysis Batch: 553889

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	20.5		ug/L		103	70 - 130	2	20
1,1,2-Trichloroethane			20.0	21.2		ug/L		106	70 - 130	3	20
Trichloroethene			20.0	20.6		ug/L		103	70 - 130	3	20
Trichlorofluoromethane			20.0	25.6		ug/L		128	70 - 130	4	20
1,2,3-Trichloropropane			20.0	22.6		ug/L		113	70 - 130	12	20
1,2,4-Trimethylbenzene			20.0	23.3		ug/L		116	70 - 130	8	20
1,3,5-Trimethylbenzene			20.0	22.7		ug/L		113	70 - 130	6	20
Vinyl chloride			20.0	25.5		ug/L		127	70 - 130	3	20
m-Xylene & p-Xylene			20.0	21.2		ug/L		106	70 - 130	4	20
o-Xylene			20.0	21.7		ug/L		108	70 - 130	3	20
Xylenes, Total			40.0	42.9		ug/L		107	70 - 130	4	20
Bromobenzene			20.0	21.5		ug/L		108	70 - 130	7	20
1,2-Dibromoethane			20.0	21.6		ug/L		108	70 - 130	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: 280-153958-B-7 MSD
Matrix: Water
Analysis Batch: 553889

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.50	U	20.0	22.2		ug/L		111	70 - 130	2	20
Bromochloromethane	0.50	U	20.0	21.9		ug/L		110	70 - 130	3	20
Bromodichloromethane	0.50	U	20.0	22.9		ug/L		114	70 - 130	0	20
Bromoform	0.50	U	20.0	24.2		ug/L		121	70 - 130	4	20
Bromomethane	0.50	U	20.0	23.7		ug/L		118	70 - 130	8	20
n-Butylbenzene	0.50	U	20.0	24.4		ug/L		122	70 - 130	4	20
sec-Butylbenzene	0.50	U	20.0	24.5		ug/L		123	70 - 130	3	20
tert-Butylbenzene	0.50	U	20.0	24.4		ug/L		122	70 - 130	4	20
Carbon tetrachloride	0.50	U	20.0	25.7		ug/L		128	70 - 130	5	20
Chlorobenzene	0.50	U	20.0	22.0		ug/L		110	70 - 130	3	20
Dibromochloromethane	0.50	U	20.0	23.9		ug/L		119	70 - 130	5	20
Chloroethane	0.50	U	20.0	25.1		ug/L		126	70 - 130	6	20
Chloroform	0.50	U	20.0	23.1		ug/L		116	70 - 130	0	20
Chloromethane	0.50	U	20.0	25.6		ug/L		128	70 - 130	5	20
2-Chlorotoluene	0.50	U	20.0	23.2		ug/L		116	70 - 130	2	20
4-Chlorotoluene	0.50	U	20.0	23.3		ug/L		117	70 - 130	4	20
1,2-Dibromo-3-Chloropropane	0.50	U	20.0	21.8		ug/L		109	70 - 130	5	20
Dibromomethane	0.50	U	20.0	22.0		ug/L		110	70 - 130	0	20
1,2-Dichlorobenzene	0.50	U	20.0	22.9		ug/L		115	70 - 130	1	20
1,3-Dichlorobenzene	0.50	U	20.0	22.5		ug/L		113	70 - 130	3	20
1,4-Dichlorobenzene	0.50	U	20.0	22.1		ug/L		110	70 - 130	2	20
Dichlorodifluoromethane	0.50	U	20.0	29.5		ug/L		147	70 - 130	2	20
1,1-Dichloroethane	0.50	U	20.0	22.8		ug/L		114	70 - 130	2	20
1,2-Dichloroethane	0.50	U	20.0	21.6		ug/L		108	70 - 130	1	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: 280-153958-B-7 MSD
Matrix: Water
Analysis Batch: 553889

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	0.50	U	20.0	22.1		ug/L		110	70 - 130	0	20
trans-1,2-Dichloroethene	0.50	U	20.0	23.7		ug/L		119	70 - 130	6	20
1,1-Dichloroethene	0.50	U	20.0	23.9		ug/L		120	70 - 130	5	20
1,2-Dichloropropane	0.50	U	20.0	22.2		ug/L		111	70 - 130	3	20
1,3-Dichloropropane	0.50	U	20.0	22.5		ug/L		113	70 - 130	2	20
2,2-Dichloropropane	0.50	U	20.0	20.1		ug/L		101	70 - 130	1	20
cis-1,3-Dichloropropene	0.50	U	20.0	21.5		ug/L		108	70 - 130	5	20
trans-1,3-Dichloropropene	0.50	U	20.0	22.0		ug/L		110	70 - 130	1	20
1,1-Dichloropropene	0.50	U	20.0	24.6		ug/L		123	70 - 130	6	20
Ethylbenzene	0.50	U	20.0	23.3		ug/L		117	70 - 130	3	20
Hexachlorobutadiene	0.50	U	20.0	23.2		ug/L		116	70 - 130	5	20
Isopropylbenzene	0.50	U	20.0	24.4		ug/L		122	70 - 130	4	20
4-Isopropyltoluene	0.50	U	20.0	25.1		ug/L		125	70 - 130	3	20
Methylene Chloride	0.50	U	20.0	21.6		ug/L		108	70 - 130	3	20
Methyl-t-Butyl Ether (MTBE)	0.50	U	20.0	21.7		ug/L		109	70 - 130	2	20
Naphthalene	0.50	U	20.0	22.5		ug/L		113	70 - 130	4	20
N-Propylbenzene	0.50	U	20.0	23.8		ug/L		119	70 - 130	3	20
Styrene	0.50	U	20.0	23.5		ug/L		117	70 - 130	1	20
1,1,1,2-Tetrachloroethane	0.50	U	20.0	23.2		ug/L		116	70 - 130	2	20
1,1,2,2-Tetrachloroethane	0.50	U	20.0	22.5		ug/L		113	70 - 130	2	20
Tetrachloroethene	6.8		20.0	28.2		ug/L		107	70 - 130	2	20
Toluene	0.50	U	20.0	22.4		ug/L		112	70 - 130	2	20
1,2,3-Trichlorobenzene	0.50	U	20.0	22.5		ug/L		112	70 - 130	5	20
1,2,4-Trichlorobenzene	0.50	U	20.0	22.7		ug/L		114	70 - 130	3	20
1,1,1-Trichloroethane	0.50	U	20.0	24.2		ug/L		121	70 - 130	2	20
1,1,2-Trichloroethane	0.50	U	20.0	22.4		ug/L		112	70 - 130	2	20
Trichloroethene	0.50	U	20.0	22.7		ug/L		114	70 - 130	5	20
Trichlorofluoromethane	0.17	J	20.0	29.2		ug/L		145	70 - 130	2	20
1,2,3-Trichloropropane	0.50	U	20.0	23.4		ug/L		117	70 - 130	4	20
1,2,4-Trimethylbenzene	0.50	U	20.0	24.6		ug/L		123	70 - 130	3	20
1,3,5-Trimethylbenzene	0.50	U	20.0	24.3		ug/L		122	70 - 130	4	20
Vinyl chloride	0.50	U	20.0	27.1		ug/L		135	70 - 130	3	20
m-Xylene & p-Xylene	1.0	U	20.0	23.4		ug/L		117	70 - 130	5	20
o-Xylene	0.50	U	20.0	24.0		ug/L		120	70 - 130	4	20
Xylenes, Total	1.5	U	40.0	47.4		ug/L		119	70 - 130	5	20
Bromobenzene	0.50	U	20.0	22.6		ug/L		113	70 - 130	3	20
1,2-Dibromoethane	0.50	U	20.0	22.1		ug/L		111	70 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: 280-153958-C-7 MS
Matrix: Water
Analysis Batch: 553889

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.50	U	20.0	21.8		ug/L		109	70 - 130
Bromochloromethane	0.50	U	20.0	21.2		ug/L		106	70 - 130
Bromodichloromethane	0.50	U	20.0	22.9		ug/L		114	70 - 130
Bromoform	0.50	U	20.0	23.3		ug/L		116	70 - 130
Bromomethane	0.50	U	20.0	21.9		ug/L		109	70 - 130
n-Butylbenzene	0.50	U	20.0	23.5		ug/L		118	70 - 130
sec-Butylbenzene	0.50	U	20.0	23.7		ug/L		119	70 - 130
tert-Butylbenzene	0.50	U	20.0	23.4		ug/L		117	70 - 130
Carbon tetrachloride	0.50	U	20.0	24.5		ug/L		123	70 - 130
Chlorobenzene	0.50	U	20.0	21.4		ug/L		107	70 - 130
Dibromochloromethane	0.50	U	20.0	22.8		ug/L		114	70 - 130
Chloroethane	0.50	U	20.0	23.8		ug/L		119	70 - 130
Chloroform	0.50	U	20.0	23.0		ug/L		115	70 - 130
Chloromethane	0.50	U	20.0	24.4		ug/L		122	70 - 130
2-Chlorotoluene	0.50	U	20.0	22.7		ug/L		114	70 - 130
4-Chlorotoluene	0.50	U	20.0	22.4		ug/L		112	70 - 130
1,2-Dibromo-3-Chloropropane	0.50	U	20.0	20.8		ug/L		104	70 - 130
Dibromomethane	0.50	U	20.0	22.1		ug/L		110	70 - 130
1,2-Dichlorobenzene	0.50	U	20.0	22.8		ug/L		114	70 - 130
1,3-Dichlorobenzene	0.50	U	20.0	22.0		ug/L		110	70 - 130
1,4-Dichlorobenzene	0.50	U	20.0	21.6		ug/L		108	70 - 130
Dichlorodifluoromethane	0.50	U	20.0	28.8		ug/L		144	70 - 130
1,1-Dichloroethane	0.50	U	20.0	22.3		ug/L		111	70 - 130
1,2-Dichloroethane	0.50	U	20.0	21.8		ug/L		109	70 - 130
cis-1,2-Dichloroethene	0.50	U	20.0	22.1		ug/L		110	70 - 130
trans-1,2-Dichloroethene	0.50	U	20.0	22.3		ug/L		111	70 - 130
1,1-Dichloroethene	0.50	U	20.0	22.7		ug/L		113	70 - 130
1,2-Dichloropropane	0.50	U	20.0	21.6		ug/L		108	70 - 130
1,3-Dichloropropane	0.50	U	20.0	22.0		ug/L		110	70 - 130
2,2-Dichloropropane	0.50	U	20.0	19.8		ug/L		99	70 - 130
cis-1,3-Dichloropropene	0.50	U	20.0	20.6		ug/L		103	70 - 130
trans-1,3-Dichloropropene	0.50	U	20.0	21.7		ug/L		108	70 - 130
1,1-Dichloropropene	0.50	U	20.0	23.2		ug/L		116	70 - 130
Ethylbenzene	0.50	U	20.0	22.6		ug/L		113	70 - 130
Hexachlorobutadiene	0.50	U	20.0	22.1		ug/L		110	70 - 130
Isopropylbenzene	0.50	U	20.0	23.3		ug/L		117	70 - 130
4-Isopropyltoluene	0.50	U	20.0	24.3		ug/L		121	70 - 130
Methylene Chloride	0.50	U	20.0	21.0		ug/L		105	70 - 130
Methyl-t-Butyl Ether (MTBE)	0.50	U	20.0	21.3		ug/L		106	70 - 130
Naphthalene	0.50	U	20.0	21.7		ug/L		108	70 - 130
N-Propylbenzene	0.50	U	20.0	23.1		ug/L		116	70 - 130
Styrene	0.50	U	20.0	23.3		ug/L		116	70 - 130
1,1,1,2-Tetrachloroethane	0.50	U	20.0	22.8		ug/L		114	70 - 130
1,1,2,2-Tetrachloroethane	0.50	U	20.0	22.0		ug/L		110	70 - 130
Tetrachloroethene	6.8		20.0	27.6		ug/L		104	70 - 130
Toluene	0.50	U	20.0	22.1		ug/L		110	70 - 130
1,2,3-Trichlorobenzene	0.50	U	20.0	21.5		ug/L		107	70 - 130
1,2,4-Trichlorobenzene	0.50	U	20.0	22.0		ug/L		110	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: 280-153958-C-7 MS
Matrix: Water
Analysis Batch: 553889

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.50	U	20.0	23.6		ug/L		118	70 - 130
1,1,2-Trichloroethane	0.50	U	20.0	21.9		ug/L		109	70 - 130
Trichloroethene	0.50	U	20.0	21.6		ug/L		108	70 - 130
Trichlorofluoromethane	0.17	J	20.0	28.7		ug/L		143	70 - 130
1,2,3-Trichloropropane	0.50	U	20.0	22.4		ug/L		112	70 - 130
1,2,4-Trimethylbenzene	0.50	U	20.0	23.8		ug/L		119	70 - 130
1,3,5-Trimethylbenzene	0.50	U	20.0	23.4		ug/L		117	70 - 130
Vinyl chloride	0.50	U	20.0	26.2		ug/L		131	70 - 130
m-Xylene & p-Xylene	1.0	U	20.0	22.3		ug/L		112	70 - 130
o-Xylene	0.50	U	20.0	23.0		ug/L		115	70 - 130
Xylenes, Total	1.5	U	40.0	45.3		ug/L		113	70 - 130
Bromobenzene	0.50	U	20.0	22.1		ug/L		110	70 - 130
1,2-Dibromoethane	0.50	U	20.0	21.8		ug/L		109	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: MB 280-553946/6
Matrix: Water
Analysis Batch: 553946

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			10/18/21 10:21	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			10/18/21 10:21	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			10/18/21 10:21	1
Bromoform	0.50	U	0.50	0.092	ug/L			10/18/21 10:21	1
Bromomethane	0.50	U	0.50	0.27	ug/L			10/18/21 10:21	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			10/18/21 10:21	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			10/18/21 10:21	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			10/18/21 10:21	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			10/18/21 10:21	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			10/18/21 10:21	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			10/18/21 10:21	1
Chloroethane	0.50	U	0.50	0.14	ug/L			10/18/21 10:21	1
Chloroform	0.50	U	0.50	0.11	ug/L			10/18/21 10:21	1
Chloromethane	0.50	U	0.50	0.097	ug/L			10/18/21 10:21	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			10/18/21 10:21	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			10/18/21 10:21	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			10/18/21 10:21	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			10/18/21 10:21	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			10/18/21 10:21	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			10/18/21 10:21	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			10/18/21 10:21	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			10/18/21 10:21	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			10/18/21 10:21	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			10/18/21 10:21	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-553946/6
Matrix: Water
Analysis Batch: 553946

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			10/18/21 10:21	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			10/18/21 10:21	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			10/18/21 10:21	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			10/18/21 10:21	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			10/18/21 10:21	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			10/18/21 10:21	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			10/18/21 10:21	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			10/18/21 10:21	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			10/18/21 10:21	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			10/18/21 10:21	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			10/18/21 10:21	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			10/18/21 10:21	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			10/18/21 10:21	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			10/18/21 10:21	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			10/18/21 10:21	1
Naphthalene	0.50	U	0.50	0.085	ug/L			10/18/21 10:21	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			10/18/21 10:21	1
Styrene	0.50	U	0.50	0.056	ug/L			10/18/21 10:21	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			10/18/21 10:21	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			10/18/21 10:21	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			10/18/21 10:21	1
Toluene	0.50	U	0.50	0.041	ug/L			10/18/21 10:21	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			10/18/21 10:21	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			10/18/21 10:21	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			10/18/21 10:21	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			10/18/21 10:21	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			10/18/21 10:21	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			10/18/21 10:21	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			10/18/21 10:21	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			10/18/21 10:21	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			10/18/21 10:21	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			10/18/21 10:21	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			10/18/21 10:21	1
o-Xylene	0.50	U	0.50	0.095	ug/L			10/18/21 10:21	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			10/18/21 10:21	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			10/18/21 10:21	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			10/18/21 10:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*		*10/18/21 10:21*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*10/18/21 10:21*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*10/18/21 10:21*	*1*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-553946/3
Matrix: Water
Analysis Batch: 553946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	22.0		ug/L		110	70 - 130
Bromochloromethane	20.0	21.9		ug/L		109	70 - 130
Bromodichloromethane	20.0	23.2		ug/L		116	70 - 130
Bromoform	20.0	24.3		ug/L		122	70 - 130
Bromomethane	20.0	24.0		ug/L		120	70 - 130
n-Butylbenzene	20.0	24.3		ug/L		122	70 - 130
sec-Butylbenzene	20.0	24.1		ug/L		120	70 - 130
tert-Butylbenzene	20.0	23.6		ug/L		118	70 - 130
Carbon tetrachloride	20.0	24.3		ug/L		122	70 - 130
Chlorobenzene	20.0	22.3		ug/L		112	70 - 130
Dibromochloromethane	20.0	24.1		ug/L		120	70 - 130
Chloroethane	20.0	24.0		ug/L		120	70 - 130
Chloroform	20.0	23.0		ug/L		115	70 - 130
Chloromethane	20.0	25.0		ug/L		125	70 - 130
2-Chlorotoluene	20.0	23.3		ug/L		117	70 - 130
4-Chlorotoluene	20.0	23.4		ug/L		117	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	22.6		ug/L		113	70 - 130
Dibromomethane	20.0	22.5		ug/L		113	70 - 130
1,2-Dichlorobenzene	20.0	23.0		ug/L		115	70 - 130
1,3-Dichlorobenzene	20.0	22.8		ug/L		114	70 - 130
1,4-Dichlorobenzene	20.0	22.2		ug/L		111	70 - 130
Dichlorodifluoromethane	20.0	27.3		ug/L		137	70 - 130
1,1-Dichloroethane	20.0	22.6		ug/L		113	70 - 130
1,2-Dichloroethane	20.0	22.3		ug/L		111	70 - 130
cis-1,2-Dichloroethene	20.0	22.4		ug/L		112	70 - 130
trans-1,2-Dichloroethene	20.0	22.5		ug/L		113	70 - 130
1,1-Dichloroethene	20.0	21.9		ug/L		109	70 - 130
1,2-Dichloropropane	20.0	22.4		ug/L		112	70 - 130
1,3-Dichloropropane	20.0	23.0		ug/L		115	70 - 130
2,2-Dichloropropane	20.0	23.6		ug/L		118	70 - 130
cis-1,3-Dichloropropene	20.0	23.3		ug/L		116	70 - 130
trans-1,3-Dichloropropene	20.0	23.2		ug/L		116	70 - 130
1,1-Dichloropropene	20.0	24.1		ug/L		121	70 - 130
Ethylbenzene	20.0	22.8		ug/L		114	70 - 130
Hexachlorobutadiene	20.0	23.3		ug/L		116	70 - 130
Isopropylbenzene	20.0	23.7		ug/L		118	70 - 130
4-Isopropyltoluene	20.0	24.6		ug/L		123	70 - 130
Methylene Chloride	20.0	22.0		ug/L		110	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	22.8		ug/L		114	70 - 130
Naphthalene	20.0	23.2		ug/L		116	70 - 130
N-Propylbenzene	20.0	23.3		ug/L		116	70 - 130
Styrene	20.0	24.0		ug/L		120	70 - 130
1,1,1,2-Tetrachloroethane	20.0	22.8		ug/L		114	70 - 130
1,1,2,2-Tetrachloroethane	20.0	22.4		ug/L		112	70 - 130
Tetrachloroethene	20.0	22.6		ug/L		113	70 - 130
Toluene	20.0	22.4		ug/L		112	70 - 130
1,2,3-Trichlorobenzene	20.0	22.7		ug/L		113	70 - 130
1,2,4-Trichlorobenzene	20.0	23.5		ug/L		118	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-553946/3
Matrix: Water
Analysis Batch: 553946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1,1-Trichloroethane			20.0	22.9		ug/L		115	70 - 130		
1,1,2-Trichloroethane			20.0	22.5		ug/L		113	70 - 130		
Trichloroethene			20.0	22.0		ug/L		110	70 - 130		
Trichlorofluoromethane			20.0	26.5		ug/L		133	70 - 130		
1,2,3-Trichloropropane			20.0	23.6		ug/L		118	70 - 130		
1,2,4-Trimethylbenzene			20.0	24.5		ug/L		123	70 - 130		
1,3,5-Trimethylbenzene			20.0	24.1		ug/L		121	70 - 130		
Vinyl chloride			20.0	26.0		ug/L		130	70 - 130		
m-Xylene & p-Xylene			20.0	22.9		ug/L		115	70 - 130		
o-Xylene			20.0	23.6		ug/L		118	70 - 130		
Xylenes, Total			40.0	46.5		ug/L		116	70 - 130		
Bromobenzene			20.0	22.7		ug/L		113	70 - 130		
1,2-Dibromoethane			20.0	23.0		ug/L		115	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 280-553946/4
Matrix: Water
Analysis Batch: 553946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			20.0	21.4		ug/L		107	70 - 130	3	20
Bromochloromethane			20.0	21.9		ug/L		110	70 - 130	0	20
Bromodichloromethane			20.0	22.9		ug/L		114	70 - 130	1	20
Bromoform			20.0	23.9		ug/L		120	70 - 130	2	20
Bromomethane			20.0	22.9		ug/L		114	70 - 130	5	20
n-Butylbenzene			20.0	22.9		ug/L		115	70 - 130	6	20
sec-Butylbenzene			20.0	22.2		ug/L		111	70 - 130	8	20
tert-Butylbenzene			20.0	22.3		ug/L		111	70 - 130	6	20
Carbon tetrachloride			20.0	22.3		ug/L		112	70 - 130	9	20
Chlorobenzene			20.0	21.0		ug/L		105	70 - 130	6	20
Dibromochloromethane			20.0	23.3		ug/L		117	70 - 130	3	20
Chloroethane			20.0	22.7		ug/L		114	70 - 130	6	20
Chloroform			20.0	22.4		ug/L		112	70 - 130	3	20
Chloromethane			20.0	23.3		ug/L		117	70 - 130	7	20
2-Chlorotoluene			20.0	22.3		ug/L		111	70 - 130	5	20
4-Chlorotoluene			20.0	22.5		ug/L		113	70 - 130	4	20
1,2-Dibromo-3-Chloropropane			20.0	22.3		ug/L		111	70 - 130	1	20
Dibromomethane			20.0	22.1		ug/L		110	70 - 130	2	20
1,2-Dichlorobenzene			20.0	22.1		ug/L		110	70 - 130	4	20
1,3-Dichlorobenzene			20.0	21.9		ug/L		109	70 - 130	4	20
1,4-Dichlorobenzene			20.0	21.4		ug/L		107	70 - 130	4	20
Dichlorodifluoromethane			20.0	21.2		ug/L		106	70 - 130	25	20
1,1-Dichloroethane			20.0	21.7		ug/L		108	70 - 130	4	20
1,2-Dichloroethane			20.0	21.9		ug/L		109	70 - 130	2	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-553946/4
Matrix: Water
Analysis Batch: 553946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene			20.0	21.8		ug/L		109	70 - 130	3	20
trans-1,2-Dichloroethene			20.0	21.3		ug/L		106	70 - 130	6	20
1,1-Dichloroethene			20.0	20.5		ug/L		102	70 - 130	7	20
1,2-Dichloropropane			20.0	22.2		ug/L		111	70 - 130	1	20
1,3-Dichloropropane			20.0	22.2		ug/L		111	70 - 130	4	20
2,2-Dichloropropane			20.0	22.3		ug/L		111	70 - 130	6	20
cis-1,3-Dichloropropene			20.0	22.6		ug/L		113	70 - 130	3	20
trans-1,3-Dichloropropene			20.0	23.0		ug/L		115	70 - 130	1	20
1,1-Dichloropropene			20.0	22.7		ug/L		113	70 - 130	6	20
Ethylbenzene			20.0	21.5		ug/L		107	70 - 130	6	20
Hexachlorobutadiene			20.0	22.2		ug/L		111	70 - 130	4	20
Isopropylbenzene			20.0	22.3		ug/L		112	70 - 130	6	20
4-Isopropyltoluene			20.0	23.4		ug/L		117	70 - 130	5	20
Methylene Chloride			20.0	21.5		ug/L		108	70 - 130	2	20
Methyl-t-Butyl Ether (MTBE)			20.0	22.6		ug/L		113	70 - 130	1	20
Naphthalene			20.0	22.5		ug/L		112	70 - 130	3	20
N-Propylbenzene			20.0	22.1		ug/L		110	70 - 130	5	20
Styrene			20.0	23.1		ug/L		116	70 - 130	4	20
1,1,1,2-Tetrachloroethane			20.0	22.1		ug/L		111	70 - 130	3	20
1,1,2,2-Tetrachloroethane			20.0	21.8		ug/L		109	70 - 130	3	20
Tetrachloroethene			20.0	21.0		ug/L		105	70 - 130	8	20
Toluene			20.0	21.8		ug/L		109	70 - 130	3	20
1,2,3-Trichlorobenzene			20.0	21.9		ug/L		109	70 - 130	3	20
1,2,4-Trichlorobenzene			20.0	23.0		ug/L		115	70 - 130	2	20
1,1,1-Trichloroethane			20.0	21.4		ug/L		107	70 - 130	7	20
1,1,2-Trichloroethane			20.0	22.3		ug/L		112	70 - 130	1	20
Trichloroethene			20.0	21.1		ug/L		106	70 - 130	4	20
Trichlorofluoromethane			20.0	21.7		ug/L		108	70 - 130	20	20
1,2,3-Trichloropropane			20.0	23.0		ug/L		115	70 - 130	2	20
1,2,4-Trimethylbenzene			20.0	23.4		ug/L		117	70 - 130	5	20
1,3,5-Trimethylbenzene			20.0	23.0		ug/L		115	70 - 130	5	20
Vinyl chloride			20.0	22.3		ug/L		111	70 - 130	15	20
m-Xylene & p-Xylene			20.0	21.8		ug/L		109	70 - 130	5	20
o-Xylene			20.0	23.0		ug/L		115	70 - 130	3	20
Xylenes, Total			40.0	44.8		ug/L		112	70 - 130	4	20
Bromobenzene			20.0	21.9		ug/L		110	70 - 130	3	20
1,2-Dibromoethane			20.0	22.2		ug/L		111	70 - 130	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-552988/1-A
Matrix: Water
Analysis Batch: 553330

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 552988

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	0.20	U	0.20	0.089	ug/L		10/11/21 15:10	10/13/21 00:04	1

Lab Sample ID: LCS 280-552988/2-A
Matrix: Water
Analysis Batch: 553330

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 552988

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			40.0	38.9		ug/L		97	82 - 116		

Lab Sample ID: 280-153959-2 MS
Matrix: Water
Analysis Batch: 553330

Client Sample ID: 43402-002
Prep Type: Total Recoverable
Prep Batch: 552988

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	0.20	U	40.0	37.7		ug/L		94	82 - 116		

Lab Sample ID: 280-153959-2 MSD
Matrix: Water
Analysis Batch: 553330

Client Sample ID: 43402-002
Prep Type: Total Recoverable
Prep Batch: 552988

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	0.20	U	40.0	39.1		ug/L		98	82 - 116	4	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3&B96

Job ID: 280-153959-1
SDG: 43402

GC/MS VOA

Analysis Batch: 553889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153959-1	43402-001	Total/NA	Water	8260C	
280-153959-2	43402-002	Total/NA	Water	8260C	
280-153959-3	43402-003	Total/NA	Water	8260C	
280-153959-4	43402-004	Total/NA	Water	8260C	
280-153959-5	43402-005	Total/NA	Water	8260C	
MB 280-553889/6	Method Blank	Total/NA	Water	8260C	
LCS 280-553889/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-553889/4	Lab Control Sample Dup	Total/NA	Water	8260C	
280-153958-B-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8260C	
280-153958-C-7 MS	Matrix Spike	Total/NA	Water	8260C	

Analysis Batch: 553946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153959-6	43402-006	Total/NA	Water	8260C	
MB 280-553946/6	Method Blank	Total/NA	Water	8260C	
LCS 280-553946/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-553946/4	Lab Control Sample Dup	Total/NA	Water	8260C	

Metals

Prep Batch: 552988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153959-2	43402-002	Total Recoverable	Water	3005A	
MB 280-552988/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-552988/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-153959-2 MS	43402-002	Total Recoverable	Water	3005A	
280-153959-2 MSD	43402-002	Total Recoverable	Water	3005A	

Analysis Batch: 553330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153959-2	43402-002	Total Recoverable	Water	6020A	552988
MB 280-552988/1-A	Method Blank	Total Recoverable	Water	6020A	552988
LCS 280-552988/2-A	Lab Control Sample	Total Recoverable	Water	6020A	552988
280-153959-2 MS	43402-002	Total Recoverable	Water	6020A	552988
280-153959-2 MSD	43402-002	Total Recoverable	Water	6020A	552988

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3&B96

Job ID: 280-153959-1
SDG: 43402

Client Sample ID: 43402-001
Date Collected: 10/05/21 15:00
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	553889	10/17/21 22:54	AJP	TAL DEN

Client Sample ID: 43402-002
Date Collected: 10/05/21 15:05
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	553889	10/17/21 23:17	AJP	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	552988	10/11/21 15:10	CEH	TAL DEN
Total Recoverable	Analysis	6020A		1			553330	10/13/21 00:12	LMT	TAL DEN

Client Sample ID: 43402-003
Date Collected: 10/05/21 15:20
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	553889	10/17/21 23:41	AJP	TAL DEN

Client Sample ID: 43402-004
Date Collected: 10/05/21 15:30
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	553889	10/18/21 00:04	AJP	TAL DEN

Client Sample ID: 43402-005
Date Collected: 10/05/21 15:40
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	553889	10/18/21 00:28	AJP	TAL DEN

Client Sample ID: 43402-006
Date Collected: 10/05/21 14:00
Date Received: 10/07/21 10:55

Lab Sample ID: 280-153959-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	553946	10/18/21 10:45	TAW	TAL DEN

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3&B96

Job ID: 280-153959-1
SDG: 43402

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-02-21
A2LA	ISO/IEC 17025	2907.01	11-02-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21 *
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-22
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	07-01-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21 *
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-22
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	10-01-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21 *
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-22
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-22
Wyoming (UST)	A2LA	2907.01	10-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 43402

Requires EDD X

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Metz	Phone: 314-298-8566
2		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	8260x EPA 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium		
001	E	G	095-151	0	10/5/21	1500	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		1505	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0		↓	W	RTW-1 Effluent	250 ML	p	1	Hno3										X		
003	E	G	095-153	0		1520	W	RTW-2 Influent	40 ML	SC	3	HCL					X							
004	E	G	095-155	0		1530	W	RTW-3 Influent	40 ML	SC	3	HCL					X							
005	E	G	095-157	0		1540	W	RTW-4 Influent	40 ML	SC	3	HCL					X							
006	E	G	TB-1	0		1400	W	Trip Blank	40 ML	SC	3	HCL					X							

280-153959 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print R. Metz 1330	Print	Print
Signature 10/6/21	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Joshua Stocks 10/7/21	Print	Print
Signature 1055	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

4.1 IR11 CFH.0

BNL F 3101F (rev. 6/13) Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-153959-1
SDG Number: 43402

Login Number: 153959
List Number: 1
Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-154900-1
Laboratory Sample Delivery Group: 43444
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
11/8/2021 12:22:58 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-154900-1
SDG: 43444

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
B	The reported value is less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-154900-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 280-154900-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 10/29/2021 1:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0º C.

VOLATILE ORGANIC COMPOUNDS

Samples 43444-001 (280-154900-1), 43444-002 (280-154900-2) and 43444-003 (280-154900-3) were analyzed for volatile organic compounds in accordance with SW 846 Method 8260C. The samples were analyzed on 11/02/2021.

Job ID: 280-154900-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

Analytical Batch 280-555780:
Insufficient sample volume was available to prepare a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD was prepared to demonstrate batch precision.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS- METALS

Sample 43444-002 (280-154900-2) was analyzed for ICP-MS- metals in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 11/01/2021 and analyzed on 11/03/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-154900-1
SDG: 43444

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL DEN
5030C	Purge and Trap	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-154900-1
SDG: 43444

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-154900-1	43444-001	Water	10/25/21 11:00	10/29/21 13:35
280-154900-2	43444-002	Water	10/25/21 11:05	10/29/21 13:35
280-154900-3	43444-003	Water	10/25/21 10:00	10/29/21 13:35

Client Sample ID: 43444-001

Date Collected: 10/25/21 11:00
Date Received: 10/29/21 13:35

Lab Sample ID: 280-154900-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/02/21 09:52	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/02/21 09:52	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/02/21 09:52	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/02/21 09:52	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/02/21 09:52	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/02/21 09:52	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/02/21 09:52	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/02/21 09:52	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/02/21 09:52	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/02/21 09:52	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/02/21 09:52	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/02/21 09:52	1
Chloroform	**0.55**		0.50	0.11	ug/L			11/02/21 09:52	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/02/21 09:52	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/02/21 09:52	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/02/21 09:52	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/02/21 09:52	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/02/21 09:52	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/02/21 09:52	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/02/21 09:52	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/02/21 09:52	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/02/21 09:52	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/02/21 09:52	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/02/21 09:52	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/02/21 09:52	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/02/21 09:52	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/02/21 09:52	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/02/21 09:52	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/02/21 09:52	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/02/21 09:52	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/02/21 09:52	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/02/21 09:52	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/02/21 09:52	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/02/21 09:52	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/02/21 09:52	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/02/21 09:52	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/02/21 09:52	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/02/21 09:52	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/02/21 09:52	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/02/21 09:52	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/02/21 09:52	1
Styrene	0.50	U	0.50	0.056	ug/L			11/02/21 09:52	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/02/21 09:52	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/02/21 09:52	1
Tetrachloroethene	**3.1**		0.50	0.072	ug/L			11/02/21 09:52	1
Toluene	0.50	U	0.50	0.041	ug/L			11/02/21 09:52	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/02/21 09:52	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/02/21 09:52	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/02/21 09:52	1

Client Sample ID: 43444-001

Date Collected: 10/25/21 11:00
Date Received: 10/29/21 13:35

Lab Sample ID: 280-154900-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/02/21 09:52	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/02/21 09:52	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/02/21 09:52	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/02/21 09:52	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/02/21 09:52	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/02/21 09:52	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/02/21 09:52	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/02/21 09:52	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/02/21 09:52	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/02/21 09:52	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/02/21 09:52	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/02/21 09:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*		*11/02/21 09:52*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*11/02/21 09:52*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*11/02/21 09:52*	*1*

Client Sample ID: 43444-002

Date Collected: 10/25/21 11:05
Date Received: 10/29/21 13:35

Lab Sample ID: 280-154900-2

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/02/21 10:15	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/02/21 10:15	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/02/21 10:15	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/02/21 10:15	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/02/21 10:15	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/02/21 10:15	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/02/21 10:15	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/02/21 10:15	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/02/21 10:15	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/02/21 10:15	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/02/21 10:15	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/02/21 10:15	1
Chloroform	0.50	U	0.50	0.11	ug/L			11/02/21 10:15	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/02/21 10:15	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/02/21 10:15	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/02/21 10:15	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/02/21 10:15	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/02/21 10:15	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/02/21 10:15	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/02/21 10:15	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/02/21 10:15	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/02/21 10:15	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/02/21 10:15	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/02/21 10:15	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/02/21 10:15	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/02/21 10:15	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-154900-1
SDG: 43444

Client Sample ID: 43444-002
Date Collected: 10/25/21 11:05
Date Received: 10/29/21 13:35

Lab Sample ID: 280-154900-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/02/21 10:15	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/02/21 10:15	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/02/21 10:15	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/02/21 10:15	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/02/21 10:15	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/02/21 10:15	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/02/21 10:15	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/02/21 10:15	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/02/21 10:15	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/02/21 10:15	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/02/21 10:15	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/02/21 10:15	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/02/21 10:15	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/02/21 10:15	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/02/21 10:15	1
Styrene	0.50	U	0.50	0.056	ug/L			11/02/21 10:15	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/02/21 10:15	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/02/21 10:15	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			11/02/21 10:15	1
Toluene	0.50	U	0.50	0.041	ug/L			11/02/21 10:15	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/02/21 10:15	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/02/21 10:15	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/02/21 10:15	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/02/21 10:15	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/02/21 10:15	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/02/21 10:15	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/02/21 10:15	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/02/21 10:15	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/02/21 10:15	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/02/21 10:15	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/02/21 10:15	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/02/21 10:15	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/02/21 10:15	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/02/21 10:15	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/02/21 10:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*		*11/02/21 10:15*	*1*
Toluene-d8 (Surr)	*94*		*70 - 130*		*11/02/21 10:15*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*11/02/21 10:15*	*1*

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	**0.11**	**B**	0.20	0.089	ug/L		11/01/21 15:02	11/03/21 03:42	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-154900-1
SDG: 43444

Client Sample ID: 43444-003
Date Collected: 10/25/21 10:00
Date Received: 10/29/21 13:35

Lab Sample ID: 280-154900-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/02/21 10:39	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/02/21 10:39	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/02/21 10:39	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/02/21 10:39	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/02/21 10:39	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/02/21 10:39	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/02/21 10:39	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/02/21 10:39	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/02/21 10:39	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/02/21 10:39	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/02/21 10:39	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/02/21 10:39	1
Chloroform	0.50	U	0.50	0.11	ug/L			11/02/21 10:39	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/02/21 10:39	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/02/21 10:39	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/02/21 10:39	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/02/21 10:39	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/02/21 10:39	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/02/21 10:39	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/02/21 10:39	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/02/21 10:39	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/02/21 10:39	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/02/21 10:39	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/02/21 10:39	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/02/21 10:39	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/02/21 10:39	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/02/21 10:39	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/02/21 10:39	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/02/21 10:39	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/02/21 10:39	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/02/21 10:39	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/02/21 10:39	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/02/21 10:39	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/02/21 10:39	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/02/21 10:39	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/02/21 10:39	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/02/21 10:39	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/02/21 10:39	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/02/21 10:39	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/02/21 10:39	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/02/21 10:39	1
Styrene	0.50	U	0.50	0.056	ug/L			11/02/21 10:39	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/02/21 10:39	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/02/21 10:39	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			11/02/21 10:39	1
Toluene	0.50	U	0.50	0.041	ug/L			11/02/21 10:39	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/02/21 10:39	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/02/21 10:39	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/02/21 10:39	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-154900-1
SDG: 43444

Client Sample ID: 43444-003
Date Collected: 10/25/21 10:00
Date Received: 10/29/21 13:35

Lab Sample ID: 280-154900-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/02/21 10:39	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/02/21 10:39	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/02/21 10:39	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/02/21 10:39	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/02/21 10:39	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/02/21 10:39	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/02/21 10:39	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/02/21 10:39	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/02/21 10:39	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/02/21 10:39	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/02/21 10:39	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/02/21 10:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*		*11/02/21 10:39*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*11/02/21 10:39*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*11/02/21 10:39*	*1*

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-154900-1
SDG: 43444

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-154900-1	43444-001	108	98	98
280-154900-2	43444-002	108	94	95
280-154900-3	43444-003	107	97	95
LCS 280-555780/3	Lab Control Sample	99	97	99
LCSD 280-555780/4	Lab Control Sample Dup	99	99	98
MB 280-555780/6	Method Blank	105	98	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 280-555780/6
Matrix: Water
Analysis Batch: 555780

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/02/21 09:04	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/02/21 09:04	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/02/21 09:04	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/02/21 09:04	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/02/21 09:04	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/02/21 09:04	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/02/21 09:04	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/02/21 09:04	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/02/21 09:04	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/02/21 09:04	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/02/21 09:04	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/02/21 09:04	1
Chloroform	0.50	U	0.50	0.11	ug/L			11/02/21 09:04	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/02/21 09:04	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/02/21 09:04	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/02/21 09:04	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/02/21 09:04	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/02/21 09:04	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/02/21 09:04	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/02/21 09:04	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/02/21 09:04	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/02/21 09:04	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/02/21 09:04	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/02/21 09:04	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/02/21 09:04	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/02/21 09:04	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/02/21 09:04	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/02/21 09:04	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/02/21 09:04	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/02/21 09:04	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/02/21 09:04	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/02/21 09:04	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/02/21 09:04	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/02/21 09:04	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/02/21 09:04	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/02/21 09:04	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/02/21 09:04	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/02/21 09:04	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/02/21 09:04	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/02/21 09:04	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/02/21 09:04	1
Styrene	0.50	U	0.50	0.056	ug/L			11/02/21 09:04	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/02/21 09:04	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/02/21 09:04	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			11/02/21 09:04	1
Toluene	0.50	U	0.50	0.041	ug/L			11/02/21 09:04	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/02/21 09:04	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/02/21 09:04	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-555780/6
Matrix: Water
Analysis Batch: 555780

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/02/21 09:04	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/02/21 09:04	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/02/21 09:04	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/02/21 09:04	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/02/21 09:04	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/02/21 09:04	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/02/21 09:04	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/02/21 09:04	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/02/21 09:04	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/02/21 09:04	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/02/21 09:04	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/02/21 09:04	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/02/21 09:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*		*11/02/21 09:04*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*11/02/21 09:04*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*11/02/21 09:04*	*1*

Lab Sample ID: LCS 280-555780/3
Matrix: Water
Analysis Batch: 555780

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	20.3		ug/L		102	70 - 130
Bromochloromethane	20.0	20.8		ug/L		104	70 - 130
Bromodichloromethane	20.0	21.4		ug/L		107	70 - 130
Bromoform	20.0	22.0		ug/L		110	70 - 130
Bromomethane	20.0	18.6		ug/L		93	70 - 130
n-Butylbenzene	20.0	22.6		ug/L		113	70 - 130
sec-Butylbenzene	20.0	21.6		ug/L		108	70 - 130
tert-Butylbenzene	20.0	21.7		ug/L		108	70 - 130
Carbon tetrachloride	20.0	20.7		ug/L		104	70 - 130
Chlorobenzene	20.0	19.9		ug/L		100	70 - 130
Dibromochloromethane	20.0	20.9		ug/L		105	70 - 130
Chloroethane	20.0	20.6		ug/L		103	70 - 130
Chloroform	20.0	20.1		ug/L		100	70 - 130
Chloromethane	20.0	21.4		ug/L		107	70 - 130
2-Chlorotoluene	20.0	21.2		ug/L		106	70 - 130
4-Chlorotoluene	20.0	20.9		ug/L		105	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	21.3		ug/L		106	70 - 130
Dibromomethane	20.0	20.9		ug/L		104	70 - 130
1,2-Dichlorobenzene	20.0	20.9		ug/L		105	70 - 130
1,3-Dichlorobenzene	20.0	20.9		ug/L		104	70 - 130
1,4-Dichlorobenzene	20.0	20.1		ug/L		101	70 - 130
Dichlorodifluoromethane	20.0	22.0		ug/L		110	70 - 130
1,1-Dichloroethane	20.0	19.7		ug/L		99	70 - 130
1,2-Dichloroethane	20.0	20.5		ug/L		103	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-555780/3
Matrix: Water
Analysis Batch: 555780

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	20.0	19.9		ug/L		100	70 - 130
trans-1,2-Dichloroethene	20.0	19.6		ug/L		98	70 - 130
1,1-Dichloroethene	20.0	19.6		ug/L		98	70 - 130
1,2-Dichloropropane	20.0	20.3		ug/L		102	70 - 130
1,3-Dichloropropane	20.0	20.8		ug/L		104	70 - 130
2,2-Dichloropropane	20.0	20.8		ug/L		104	70 - 130
cis-1,3-Dichloropropene	20.0	21.1		ug/L		105	70 - 130
trans-1,3-Dichloropropene	20.0	21.4		ug/L		107	70 - 130
1,1-Dichloropropene	20.0	20.7		ug/L		104	70 - 130
Ethylbenzene	20.0	20.8		ug/L		104	70 - 130
Hexachlorobutadiene	20.0	22.2		ug/L		111	70 - 130
Isopropylbenzene	20.0	21.6		ug/L		108	70 - 130
4-Isopropyltoluene	20.0	20.5		ug/L		102	70 - 130
Methylene Chloride	20.0	19.5		ug/L		98	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	21.2		ug/L		106	70 - 130
Naphthalene	20.0	21.4		ug/L		107	70 - 130
N-Propylbenzene	20.0	21.3		ug/L		106	70 - 130
Styrene	20.0	21.7		ug/L		109	70 - 130
1,1,1,2-Tetrachloroethane	20.0	20.4		ug/L		102	70 - 130
1,1,2,2-Tetrachloroethane	20.0	21.4		ug/L		107	70 - 130
Tetrachloroethene	20.0	20.3		ug/L		102	70 - 130
Toluene	20.0	20.9		ug/L		104	70 - 130
1,2,3-Trichlorobenzene	20.0	21.4		ug/L		107	70 - 130
1,2,4-Trichlorobenzene	20.0	20.8		ug/L		104	70 - 130
1,1,1-Trichloroethane	20.0	21.5		ug/L		108	70 - 130
1,1,2-Trichloroethane	20.0	21.4		ug/L		107	70 - 130
Trichloroethene	20.0	19.2		ug/L		96	70 - 130
Trichlorofluoromethane	20.0	22.5		ug/L		113	70 - 130
1,2,3-Trichloropropane	20.0	20.8		ug/L		104	70 - 130
1,2,4-Trimethylbenzene	20.0	22.3		ug/L		111	70 - 130
1,3,5-Trimethylbenzene	20.0	22.1		ug/L		110	70 - 130
Vinyl chloride	20.0	22.2		ug/L		111	70 - 130
m-Xylene & p-Xylene	20.0	20.8		ug/L		104	70 - 130
o-Xylene	20.0	21.3		ug/L		107	70 - 130
Xylenes, Total	40.0	42.1		ug/L		105	70 - 130
Bromobenzene	20.0	20.6		ug/L		103	70 - 130
1,2-Dibromoethane	20.0	20.4		ug/L		102	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-555780/4
Matrix: Water
Analysis Batch: 555780

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	21.5		ug/L		108	70 - 130	6	20
Bromochloromethane	20.0	22.0		ug/L		110	70 - 130	6	20
Bromodichloromethane	20.0	22.2		ug/L		111	70 - 130	4	20
Bromoform	20.0	23.0		ug/L		115	70 - 130	4	20
Bromomethane	20.0	19.3		ug/L		97	70 - 130	4	20
n-Butylbenzene	20.0	23.8		ug/L		119	70 - 130	5	20
sec-Butylbenzene	20.0	22.9		ug/L		115	70 - 130	6	20
tert-Butylbenzene	20.0	23.1		ug/L		115	70 - 130	6	20
Carbon tetrachloride	20.0	21.9		ug/L		109	70 - 130	5	20
Chlorobenzene	20.0	20.9		ug/L		104	70 - 130	5	20
Dibromochloromethane	20.0	21.8		ug/L		109	70 - 130	4	20
Chloroethane	20.0	21.2		ug/L		106	70 - 130	3	20
Chloroform	20.0	21.0		ug/L		105	70 - 130	5	20
Chloromethane	20.0	21.8		ug/L		109	70 - 130	2	20
2-Chlorotoluene	20.0	22.8		ug/L		114	70 - 130	7	20
4-Chlorotoluene	20.0	22.7		ug/L		114	70 - 130	8	20
1,2-Dibromo-3-Chloropropane	20.0	23.3		ug/L		117	70 - 130	9	20
Dibromomethane	20.0	21.6		ug/L		108	70 - 130	3	20
1,2-Dichlorobenzene	20.0	22.3		ug/L		112	70 - 130	6	20
1,3-Dichlorobenzene	20.0	22.1		ug/L		110	70 - 130	6	20
1,4-Dichlorobenzene	20.0	21.2		ug/L		106	70 - 130	5	20
Dichlorodifluoromethane	20.0	23.3		ug/L		116	70 - 130	5	20
1,1-Dichloroethane	20.0	21.4		ug/L		107	70 - 130	8	20
1,2-Dichloroethane	20.0	21.3		ug/L		106	70 - 130	4	20
cis-1,2-Dichloroethene	20.0	20.7		ug/L		104	70 - 130	4	20
trans-1,2-Dichloroethene	20.0	20.7		ug/L		103	70 - 130	6	20
1,1-Dichloroethene	20.0	20.8		ug/L		104	70 - 130	6	20
1,2-Dichloropropane	20.0	21.4		ug/L		107	70 - 130	5	20
1,3-Dichloropropane	20.0	21.7		ug/L		109	70 - 130	4	20
2,2-Dichloropropane	20.0	21.7		ug/L		108	70 - 130	4	20
cis-1,3-Dichloropropene	20.0	22.1		ug/L		110	70 - 130	4	20
trans-1,3-Dichloropropene	20.0	22.4		ug/L		112	70 - 130	5	20
1,1-Dichloropropene	20.0	21.8		ug/L		109	70 - 130	5	20
Ethylbenzene	20.0	22.4		ug/L		112	70 - 130	7	20
Hexachlorobutadiene	20.0	23.4		ug/L		117	70 - 130	5	20
Isopropylbenzene	20.0	22.9		ug/L		114	70 - 130	6	20
4-Isopropyltoluene	20.0	21.5		ug/L		107	70 - 130	5	20
Methylene Chloride	20.0	20.1		ug/L		100	70 - 130	3	20
Methyl-t-Butyl Ether (MTBE)	20.0	22.5		ug/L		113	70 - 130	6	20
Naphthalene	20.0	23.0		ug/L		115	70 - 130	7	20
N-Propylbenzene	20.0	22.5		ug/L		112	70 - 130	5	20
Styrene	20.0	22.7		ug/L		114	70 - 130	5	20
1,1,1,2-Tetrachloroethane	20.0	21.5		ug/L		107	70 - 130	5	20
1,1,2,2-Tetrachloroethane	20.0	22.1		ug/L		111	70 - 130	3	20
Tetrachloroethene	20.0	21.1		ug/L		105	70 - 130	4	20
Toluene	20.0	21.9		ug/L		110	70 - 130	5	20
1,2,3-Trichlorobenzene	20.0	22.7		ug/L		114	70 - 130	6	20
1,2,4-Trichlorobenzene	20.0	22.2		ug/L		111	70 - 130	7	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-555780/4
Matrix: Water
Analysis Batch: 555780

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	22.8		ug/L		114	70 - 130	5	20
1,1,2-Trichloroethane			20.0	22.1		ug/L		110	70 - 130	3	20
Trichloroethene			20.0	20.8		ug/L		104	70 - 130	8	20
Trichlorofluoromethane			20.0	24.0		ug/L		120	70 - 130	6	20
1,2,3-Trichloropropane			20.0	22.6		ug/L		113	70 - 130	8	20
1,2,4-Trimethylbenzene			20.0	23.7		ug/L		118	70 - 130	6	20
1,3,5-Trimethylbenzene			20.0	23.4		ug/L		117	70 - 130	6	20
Vinyl chloride			20.0	23.0		ug/L		115	70 - 130	4	20
m-Xylene & p-Xylene			20.0	21.9		ug/L		110	70 - 130	5	20
o-Xylene			20.0	22.5		ug/L		112	70 - 130	5	20
Xylenes, Total			40.0	44.4		ug/L		111	70 - 130	5	20
Bromobenzene			20.0	21.7		ug/L		109	70 - 130	5	20
1,2-Dibromoethane			20.0	21.6		ug/L		108	70 - 130	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-555654/1-A
Matrix: Water
Analysis Batch: 555978

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 555654

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	0.20	U	0.20	0.089	ug/L		11/01/21 15:02	11/03/21 03:35	1

Lab Sample ID: LCS 280-555654/2-A
Matrix: Water
Analysis Batch: 555978

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 555654

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			40.0	38.9		ug/L		97	82 - 116		

Lab Sample ID: 280-154900-2 MS
Matrix: Water
Analysis Batch: 555978

Client Sample ID: 43444-002
Prep Type: Total Recoverable
Prep Batch: 555654

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	0.11	B	40.0	37.7		ug/L		94	82 - 116		

Lab Sample ID: 280-154900-2 MSD
Matrix: Water
Analysis Batch: 555978

Client Sample ID: 43444-002
Prep Type: Total Recoverable
Prep Batch: 555654

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	0.11	B	40.0	37.8		ug/L		94	82 - 116	0	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-154900-1
SDG: 43444

GC/MS VOA

Analysis Batch: 555780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-154900-1	43444-001	Total/NA	Water	8260C	
280-154900-2	43444-002	Total/NA	Water	8260C	
280-154900-3	43444-003	Total/NA	Water	8260C	
MB 280-555780/6	Method Blank	Total/NA	Water	8260C	
LCS 280-555780/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-555780/4	Lab Control Sample Dup	Total/NA	Water	8260C	

Metals

Prep Batch: 555654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-154900-2	43444-002	Total Recoverable	Water	3005A	
MB 280-555654/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-555654/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-154900-2 MS	43444-002	Total Recoverable	Water	3005A	
280-154900-2 MSD	43444-002	Total Recoverable	Water	3005A	

Analysis Batch: 555978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-154900-2	43444-002	Total Recoverable	Water	6020A	555654
MB 280-555654/1-A	Method Blank	Total Recoverable	Water	6020A	555654
LCS 280-555654/2-A	Lab Control Sample	Total Recoverable	Water	6020A	555654
280-154900-2 MS	43444-002	Total Recoverable	Water	6020A	555654
280-154900-2 MSD	43444-002	Total Recoverable	Water	6020A	555654

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-154900-1
SDG: 43444

Client Sample ID: 43444-001
Date Collected: 10/25/21 11:00
Date Received: 10/29/21 13:35

Lab Sample ID: 280-154900-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	555780	11/02/21 09:52	TAW	TAL DEN

Client Sample ID: 43444-002
Date Collected: 10/25/21 11:05
Date Received: 10/29/21 13:35

Lab Sample ID: 280-154900-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	555780	11/02/21 10:15	TAW	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	555654	11/01/21 15:02	CJB	TAL DEN
Total Recoverable	Analysis	6020A		1			555978	11/03/21 03:42	LMT	TAL DEN

Client Sample ID: 43444-003
Date Collected: 10/25/21 10:00
Date Received: 10/29/21 13:35

Lab Sample ID: 280-154900-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	555780	11/02/21 10:39	TAW	TAL DEN

Laboratory References:
TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-154900-1
SDG: 43444

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-30-21
A2LA	ISO/IEC 17025	2907.01	11-30-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21 *
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-22
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	07-01-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21 *
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-22
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	10-01-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21 *
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-22
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-22
Wyoming (UST)	A2LA	2907.01	11-30-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

280-154900 Chain of Custody

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 43444

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Lagattolla	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	~~524.2~~ 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	10/25/21	1100	W	RTW-1 Influent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0		1105	W	RTW-1 Effluent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0		↓	W	RTW-1 Effluent	250 ML	P	1	HNO3										x
003	E	G	TB-1	0		1000	W	Trip Blank	40 ML	SC	3	HCL					x					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print E. Kramer 10/27/21	Print	Print
Signature 1400	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print Josh Eystrom 10/27/21	Print	Print
Signature 1135	Signature	Signature

0.0 1 RUCF+1.0

Contractor Lab Sample Disposal:
❑ Return To Client ☒ Disposal by Lab
❑ Archive For ____ Months

Data Package: ❑ Full ☒ Summary

Turn-Around Time Required:
❑ Rush (1 Day) ☒ 14 Days ❑ 30 Days
❑ 7 Days ❑ Other ( )

BNL F 3101F (rev. 6/13) Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-154900-1
SDG Number: 43444

Login Number: 154900
List Number: 1
Creator: Rystrom, Joshua R

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-155316-1
Laboratory Sample Delivery Group: 43477
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
11/15/2021 2:24:12 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155316-1
SDG: 43477

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
B	The reported value is less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-155316-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 280-155316-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 11/6/2021 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1º C.

VOLATILE ORGANIC COMPOUNDS

Samples 43477-001 (280-155316-1), 43477-002 (280-155316-2) and 43477-003 (280-155316-3) were analyzed for volatile organic compounds in accordance with SW 846 Method 8260C. The samples were analyzed on 11/14/2021.

Job ID: 280-155316-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

Analytical Batch 280-557386:
The continuing calibration verification (CCV) recovered above the upper control limit for numerous analytes. The samples associated with this CCV were non-detect for the affected analytes except trichlorofluoromethane (one sample was above the MDL, but below the RL); therefore, the data was reported: 43477-001 (280-155316-1), (CCV 280-557386/2), and (280-155219-A-24).

Insufficient sample volume was available to prepare a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD was prepared to demonstrate batch precision.

Analytical Batch 280-557392:
Tetrachloroethene failed the recovery criteria low for the MS of sample 280-155219-24.

Vinyl chloride exceeded the RPD limit for the MSD of sample 280-155219-24.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS- METALS
Sample 43477-002 (280-155316-2) was analyzed for ICP-MS- metals in accordance with SW 846 Method 6020A_DoD5. The samples were prepared on 11/10/2021 and analyzed on 11/11/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155316-1
SDG: 43477

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL DEN
5030C	Purge and Trap	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155316-1
SDG: 43477

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-155316-1	43477-001	Water	11/05/21 10:15	11/06/21 09:00
280-155316-2	43477-002	Water	11/05/21 10:10	11/06/21 09:00
280-155316-3	43477-003	Water	11/05/21 09:00	11/06/21 09:00

Client Sample ID: 43477-001

Date Collected: 11/05/21 10:15
Date Received: 11/06/21 09:00

Lab Sample ID: 280-155316-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/14/21 00:02	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/14/21 00:02	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/14/21 00:02	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/14/21 00:02	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/14/21 00:02	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/14/21 00:02	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/14/21 00:02	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/14/21 00:02	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/14/21 00:02	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/14/21 00:02	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/14/21 00:02	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/14/21 00:02	1
Chloroform	**0.51**		0.50	0.11	ug/L			11/14/21 00:02	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/14/21 00:02	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/14/21 00:02	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/14/21 00:02	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/14/21 00:02	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/14/21 00:02	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/14/21 00:02	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/14/21 00:02	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/14/21 00:02	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/14/21 00:02	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/14/21 00:02	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/14/21 00:02	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/14/21 00:02	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/14/21 00:02	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/14/21 00:02	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/14/21 00:02	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/14/21 00:02	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/14/21 00:02	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/14/21 00:02	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/14/21 00:02	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/14/21 00:02	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/14/21 00:02	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/14/21 00:02	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/14/21 00:02	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/14/21 00:02	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/14/21 00:02	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/14/21 00:02	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/14/21 00:02	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/14/21 00:02	1
Styrene	0.50	U	0.50	0.056	ug/L			11/14/21 00:02	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/14/21 00:02	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/14/21 00:02	1
Tetrachloroethene	**2.7**		0.50	0.072	ug/L			11/14/21 00:02	1
Toluene	0.50	U	0.50	0.041	ug/L			11/14/21 00:02	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/14/21 00:02	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/14/21 00:02	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/14/21 00:02	1

Client Sample ID: 43477-001

Date Collected: 11/05/21 10:15
Date Received: 11/06/21 09:00

Lab Sample ID: 280-155316-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/14/21 00:02	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/14/21 00:02	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/14/21 00:02	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/14/21 00:02	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/14/21 00:02	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/14/21 00:02	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/14/21 00:02	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/14/21 00:02	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/14/21 00:02	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/14/21 00:02	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/14/21 00:02	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/14/21 00:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 130*		*11/14/21 00:02*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*		*11/14/21 00:02*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*11/14/21 00:02*	*1*

Client Sample ID: 43477-002

Date Collected: 11/05/21 10:10
Date Received: 11/06/21 09:00

Lab Sample ID: 280-155316-2

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/14/21 11:10	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/14/21 11:10	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/14/21 11:10	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/14/21 11:10	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/14/21 11:10	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/14/21 11:10	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/14/21 11:10	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/14/21 11:10	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/14/21 11:10	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/14/21 11:10	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/14/21 11:10	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/14/21 11:10	1
Chloroform	0.50	U	0.50	0.11	ug/L			11/14/21 11:10	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/14/21 11:10	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/14/21 11:10	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/14/21 11:10	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/14/21 11:10	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/14/21 11:10	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/14/21 11:10	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/14/21 11:10	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/14/21 11:10	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/14/21 11:10	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/14/21 11:10	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/14/21 11:10	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/14/21 11:10	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/14/21 11:10	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155316-1
SDG: 43477

Client Sample ID: 43477-002
Date Collected: 11/05/21 10:10
Date Received: 11/06/21 09:00

Lab Sample ID: 280-155316-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/14/21 11:10	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/14/21 11:10	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/14/21 11:10	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/14/21 11:10	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/14/21 11:10	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/14/21 11:10	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/14/21 11:10	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/14/21 11:10	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/14/21 11:10	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/14/21 11:10	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/14/21 11:10	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/14/21 11:10	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/14/21 11:10	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/14/21 11:10	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/14/21 11:10	1
Styrene	0.50	U	0.50	0.056	ug/L			11/14/21 11:10	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/14/21 11:10	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/14/21 11:10	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			11/14/21 11:10	1
Toluene	0.50	U	0.50	0.041	ug/L			11/14/21 11:10	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/14/21 11:10	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/14/21 11:10	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/14/21 11:10	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/14/21 11:10	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/14/21 11:10	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/14/21 11:10	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/14/21 11:10	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/14/21 11:10	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/14/21 11:10	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/14/21 11:10	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/14/21 11:10	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/14/21 11:10	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/14/21 11:10	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/14/21 11:10	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/14/21 11:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*		*11/14/21 11:10*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*11/14/21 11:10*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*11/14/21 11:10*	*1*

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	**0.11**	**B**	0.20	0.089	ug/L		11/10/21 15:00	11/11/21 17:25	1

Client Sample ID: 43477-003

Date Collected: 11/05/21 09:00
Date Received: 11/06/21 09:00

Lab Sample ID: 280-155316-3

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/14/21 11:33	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/14/21 11:33	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/14/21 11:33	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/14/21 11:33	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/14/21 11:33	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/14/21 11:33	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/14/21 11:33	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/14/21 11:33	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/14/21 11:33	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/14/21 11:33	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/14/21 11:33	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/14/21 11:33	1
Chloroform	0.50	U	0.50	0.11	ug/L			11/14/21 11:33	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/14/21 11:33	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/14/21 11:33	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/14/21 11:33	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/14/21 11:33	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/14/21 11:33	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/14/21 11:33	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/14/21 11:33	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/14/21 11:33	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/14/21 11:33	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/14/21 11:33	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/14/21 11:33	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/14/21 11:33	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/14/21 11:33	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/14/21 11:33	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/14/21 11:33	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/14/21 11:33	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/14/21 11:33	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/14/21 11:33	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/14/21 11:33	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/14/21 11:33	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/14/21 11:33	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/14/21 11:33	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/14/21 11:33	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/14/21 11:33	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/14/21 11:33	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/14/21 11:33	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/14/21 11:33	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/14/21 11:33	1
Styrene	0.50	U	0.50	0.056	ug/L			11/14/21 11:33	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/14/21 11:33	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/14/21 11:33	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			11/14/21 11:33	1
Toluene	0.50	U	0.50	0.041	ug/L			11/14/21 11:33	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/14/21 11:33	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/14/21 11:33	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/14/21 11:33	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155316-1
SDG: 43477

Client Sample ID: 43477-003
Date Collected: 11/05/21 09:00
Date Received: 11/06/21 09:00

Lab Sample ID: 280-155316-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/14/21 11:33	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/14/21 11:33	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/14/21 11:33	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/14/21 11:33	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/14/21 11:33	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/14/21 11:33	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/14/21 11:33	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/14/21 11:33	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/14/21 11:33	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/14/21 11:33	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/14/21 11:33	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/14/21 11:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*		*11/14/21 11:33*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*11/14/21 11:33*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*11/14/21 11:33*	*1*

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155316-1
SDG: 43477

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-155219-B-24 MS	Matrix Spike	96	98	102
280-155219-B-24 MSD	Matrix Spike Duplicate	93	99	101
280-155316-1	43477-001	111	95	96
280-155316-2	43477-002	107	96	101
280-155316-3	43477-003	106	99	95
LCS 280-557386/3	Lab Control Sample	97	101	99
LCS 280-557392/3	Lab Control Sample	96	99	100
LCSD 280-557386/4	Lab Control Sample Dup	98	98	103
LCSD 280-557392/4	Lab Control Sample Dup	95	99	104
MB 280-557386/6	Method Blank	106	100	98
MB 280-557392/6	Method Blank	103	100	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 280-557386/6
Matrix: Water
Analysis Batch: 557386

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/13/21 16:08	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/13/21 16:08	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/13/21 16:08	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/13/21 16:08	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/13/21 16:08	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/13/21 16:08	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/13/21 16:08	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/13/21 16:08	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/13/21 16:08	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/13/21 16:08	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/13/21 16:08	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/13/21 16:08	1
Chloroform	0.50	U	0.50	0.11	ug/L			11/13/21 16:08	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/13/21 16:08	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/13/21 16:08	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/13/21 16:08	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/13/21 16:08	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/13/21 16:08	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/13/21 16:08	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/13/21 16:08	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/13/21 16:08	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/13/21 16:08	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/13/21 16:08	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/13/21 16:08	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/13/21 16:08	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/13/21 16:08	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/13/21 16:08	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/13/21 16:08	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/13/21 16:08	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/13/21 16:08	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/13/21 16:08	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/13/21 16:08	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/13/21 16:08	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/13/21 16:08	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/13/21 16:08	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/13/21 16:08	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/13/21 16:08	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/13/21 16:08	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/13/21 16:08	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/13/21 16:08	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/13/21 16:08	1
Styrene	0.50	U	0.50	0.056	ug/L			11/13/21 16:08	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/13/21 16:08	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/13/21 16:08	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			11/13/21 16:08	1
Toluene	0.50	U	0.50	0.041	ug/L			11/13/21 16:08	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/13/21 16:08	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/13/21 16:08	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-557386/6
Matrix: Water
Analysis Batch: 557386

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/13/21 16:08	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/13/21 16:08	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/13/21 16:08	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/13/21 16:08	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/13/21 16:08	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/13/21 16:08	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/13/21 16:08	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/13/21 16:08	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/13/21 16:08	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/13/21 16:08	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/13/21 16:08	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/13/21 16:08	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/13/21 16:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*		*11/13/21 16:08*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*11/13/21 16:08*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*11/13/21 16:08*	*1*

Lab Sample ID: LCS 280-557386/3
Matrix: Water
Analysis Batch: 557386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	17.5		ug/L		87	70 - 130
Bromochloromethane	20.0	19.3		ug/L		96	70 - 130
Bromodichloromethane	20.0	19.0		ug/L		95	70 - 130
Bromoform	20.0	19.8		ug/L		99	70 - 130
Bromomethane	20.0	19.8		ug/L		99	70 - 130
n-Butylbenzene	20.0	20.2		ug/L		101	70 - 130
sec-Butylbenzene	20.0	19.7		ug/L		99	70 - 130
tert-Butylbenzene	20.0	19.5		ug/L		98	70 - 130
Carbon tetrachloride	20.0	18.0		ug/L		90	70 - 130
Chlorobenzene	20.0	17.9		ug/L		89	70 - 130
Dibromochloromethane	20.0	20.1		ug/L		101	70 - 130
Chloroethane	20.0	18.4		ug/L		92	70 - 130
Chloroform	20.0	18.2		ug/L		91	70 - 130
Chloromethane	20.0	20.2		ug/L		101	70 - 130
2-Chlorotoluene	20.0	18.0		ug/L		90	70 - 130
4-Chlorotoluene	20.0	18.2		ug/L		91	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	18.6		ug/L		93	70 - 130
Dibromomethane	20.0	20.3		ug/L		101	70 - 130
1,2-Dichlorobenzene	20.0	19.2		ug/L		96	70 - 130
1,3-Dichlorobenzene	20.0	18.3		ug/L		92	70 - 130
1,4-Dichlorobenzene	20.0	18.0		ug/L		90	70 - 130
Dichlorodifluoromethane	20.0	24.7		ug/L		123	70 - 130
1,1-Dichloroethane	20.0	17.6		ug/L		88	70 - 130
1,2-Dichloroethane	20.0	18.9		ug/L		95	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-557386/3
Matrix: Water
Analysis Batch: 557386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	20.0	18.0		ug/L		90	70 - 130
trans-1,2-Dichloroethene	20.0	17.1		ug/L		85	70 - 130
1,1-Dichloroethene	20.0	21.0		ug/L		105	70 - 130
1,2-Dichloropropane	20.0	18.9		ug/L		95	70 - 130
1,3-Dichloropropane	20.0	19.5		ug/L		98	70 - 130
2,2-Dichloropropane	20.0	18.2		ug/L		91	70 - 130
cis-1,3-Dichloropropene	20.0	19.4		ug/L		97	70 - 130
trans-1,3-Dichloropropene	20.0	19.8		ug/L		99	70 - 130
1,1-Dichloropropene	20.0	16.7		ug/L		84	70 - 130
Ethylbenzene	20.0	18.6		ug/L		93	70 - 130
Hexachlorobutadiene	20.0	18.4		ug/L		92	70 - 130
Isopropylbenzene	20.0	19.2		ug/L		96	70 - 130
4-Isopropyltoluene	20.0	20.3		ug/L		102	70 - 130
Methylene Chloride	20.0	19.7		ug/L		99	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	19.4		ug/L		97	70 - 130
Naphthalene	20.0	20.4		ug/L		102	70 - 130
N-Propylbenzene	20.0	18.8		ug/L		94	70 - 130
Styrene	20.0	20.3		ug/L		102	70 - 130
1,1,1,2-Tetrachloroethane	20.0	19.3		ug/L		97	70 - 130
1,1,2,2-Tetrachloroethane	20.0	19.0		ug/L		95	70 - 130
Tetrachloroethene	20.0	17.9		ug/L		90	70 - 130
Toluene	20.0	17.8		ug/L		89	70 - 130
1,2,3-Trichlorobenzene	20.0	19.4		ug/L		97	70 - 130
1,2,4-Trichlorobenzene	20.0	18.5		ug/L		92	70 - 130
1,1,1-Trichloroethane	20.0	16.9		ug/L		85	70 - 130
1,1,2-Trichloroethane	20.0	19.6		ug/L		98	70 - 130
Trichloroethene	20.0	16.8		ug/L		84	70 - 130
Trichlorofluoromethane	20.0	23.1		ug/L		116	70 - 130
1,2,3-Trichloropropane	20.0	18.7		ug/L		94	70 - 130
1,2,4-Trimethylbenzene	20.0	19.9		ug/L		100	70 - 130
1,3,5-Trimethylbenzene	20.0	19.6		ug/L		98	70 - 130
Vinyl chloride	20.0	19.2		ug/L		96	70 - 130
m-Xylene & p-Xylene	20.0	19.2		ug/L		96	70 - 130
o-Xylene	20.0	19.5		ug/L		98	70 - 130
Xylenes, Total	40.0	38.7		ug/L		97	70 - 130
Bromobenzene	20.0	18.9		ug/L		95	70 - 130
1,2-Dibromoethane	20.0	19.5		ug/L		98	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-557386/4
Matrix: Water
Analysis Batch: 557386

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	18.1		ug/L		90	70 - 130	3	20
Bromochloromethane	20.0	20.0		ug/L		100	70 - 130	4	20
Bromodichloromethane	20.0	19.9		ug/L		99	70 - 130	5	20
Bromoform	20.0	19.9		ug/L		99	70 - 130	0	20
Bromomethane	20.0	21.2		ug/L		106	70 - 130	7	20
n-Butylbenzene	20.0	21.6		ug/L		108	70 - 130	7	20
sec-Butylbenzene	20.0	21.2		ug/L		106	70 - 130	7	20
tert-Butylbenzene	20.0	21.0		ug/L		105	70 - 130	7	20
Carbon tetrachloride	20.0	19.0		ug/L		95	70 - 130	6	20
Chlorobenzene	20.0	18.3		ug/L		91	70 - 130	2	20
Dibromochloromethane	20.0	20.5		ug/L		102	70 - 130	2	20
Chloroethane	20.0	19.2		ug/L		96	70 - 130	4	20
Chloroform	20.0	18.7		ug/L		94	70 - 130	3	20
Chloromethane	20.0	20.6		ug/L		103	70 - 130	2	20
2-Chlorotoluene	20.0	19.4		ug/L		97	70 - 130	7	20
4-Chlorotoluene	20.0	19.4		ug/L		97	70 - 130	6	20
1,2-Dibromo-3-Chloropropane	20.0	20.0		ug/L		100	70 - 130	7	20
Dibromomethane	20.0	21.2		ug/L		106	70 - 130	4	20
1,2-Dichlorobenzene	20.0	19.9		ug/L		100	70 - 130	4	20
1,3-Dichlorobenzene	20.0	19.6		ug/L		98	70 - 130	7	20
1,4-Dichlorobenzene	20.0	19.4		ug/L		97	70 - 130	7	20
Dichlorodifluoromethane	20.0	25.2		ug/L		126	70 - 130	2	20
1,1-Dichloroethane	20.0	18.2		ug/L		91	70 - 130	3	20
1,2-Dichloroethane	20.0	19.5		ug/L		97	70 - 130	3	20
cis-1,2-Dichloroethene	20.0	18.3		ug/L		92	70 - 130	2	20
trans-1,2-Dichloroethene	20.0	17.7		ug/L		89	70 - 130	4	20
1,1-Dichloroethene	20.0	21.5		ug/L		108	70 - 130	3	20
1,2-Dichloropropane	20.0	19.7		ug/L		98	70 - 130	4	20
1,3-Dichloropropane	20.0	20.1		ug/L		101	70 - 130	3	20
2,2-Dichloropropane	20.0	18.9		ug/L		94	70 - 130	3	20
cis-1,3-Dichloropropene	20.0	19.9		ug/L		100	70 - 130	3	20
trans-1,3-Dichloropropene	20.0	20.6		ug/L		103	70 - 130	4	20
1,1-Dichloropropene	20.0	18.2		ug/L		91	70 - 130	8	20
Ethylbenzene	20.0	18.8		ug/L		94	70 - 130	1	20
Hexachlorobutadiene	20.0	19.6		ug/L		98	70 - 130	7	20
Isopropylbenzene	20.0	20.7		ug/L		104	70 - 130	7	20
4-Isopropyltoluene	20.0	21.4		ug/L		107	70 - 130	5	20
Methylene Chloride	20.0	23.7		ug/L		118	70 - 130	18	20
Methyl-t-Butyl Ether (MTBE)	20.0	20.3		ug/L		102	70 - 130	4	20
Naphthalene	20.0	21.9		ug/L		110	70 - 130	7	20
N-Propylbenzene	20.0	20.1		ug/L		100	70 - 130	6	20
Styrene	20.0	20.6		ug/L		103	70 - 130	1	20
1,1,1,2-Tetrachloroethane	20.0	19.4		ug/L		97	70 - 130	1	20
1,1,2,2-Tetrachloroethane	20.0	19.9		ug/L		99	70 - 130	5	20
Tetrachloroethene	20.0	18.3		ug/L		91	70 - 130	2	20
Toluene	20.0	18.5		ug/L		92	70 - 130	4	20
1,2,3-Trichlorobenzene	20.0	20.8		ug/L		104	70 - 130	7	20
1,2,4-Trichlorobenzene	20.0	20.2		ug/L		101	70 - 130	9	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-557386/4
Matrix: Water
Analysis Batch: 557386

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	17.6		ug/L		88	70 - 130	4	20
1,1,2-Trichloroethane			20.0	20.0		ug/L		100	70 - 130	2	20
Trichloroethene			20.0	17.3		ug/L		87	70 - 130	3	20
Trichlorofluoromethane			20.0	22.4		ug/L		112	70 - 130	3	20
1,2,3-Trichloropropane			20.0	19.4		ug/L		97	70 - 130	4	20
1,2,4-Trimethylbenzene			20.0	21.1		ug/L		105	70 - 130	6	20
1,3,5-Trimethylbenzene			20.0	21.0		ug/L		105	70 - 130	7	20
Vinyl chloride			20.0	20.0		ug/L		100	70 - 130	4	20
m-Xylene & p-Xylene			20.0	19.2		ug/L		96	70 - 130	0	20
o-Xylene			20.0	19.9		ug/L		99	70 - 130	2	20
Xylenes, Total			40.0	39.1		ug/L		98	70 - 130	1	20
Bromobenzene			20.0	20.2		ug/L		101	70 - 130	6	20
1,2-Dibromoethane			20.0	20.0		ug/L		100	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: MB 280-557392/6
Matrix: Water
Analysis Batch: 557392

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/14/21 10:46	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/14/21 10:46	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/14/21 10:46	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/14/21 10:46	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/14/21 10:46	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/14/21 10:46	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/14/21 10:46	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/14/21 10:46	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/14/21 10:46	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/14/21 10:46	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/14/21 10:46	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/14/21 10:46	1
Chloroform	0.50	U	0.50	0.11	ug/L			11/14/21 10:46	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/14/21 10:46	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/14/21 10:46	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/14/21 10:46	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/14/21 10:46	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/14/21 10:46	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/14/21 10:46	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/14/21 10:46	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/14/21 10:46	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/14/21 10:46	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/14/21 10:46	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/14/21 10:46	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155316-1
SDG: 43477

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-557392/6
Matrix: Water
Analysis Batch: 557392

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/14/21 10:46	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/14/21 10:46	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/14/21 10:46	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/14/21 10:46	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/14/21 10:46	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/14/21 10:46	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/14/21 10:46	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/14/21 10:46	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/14/21 10:46	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/14/21 10:46	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/14/21 10:46	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/14/21 10:46	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/14/21 10:46	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/14/21 10:46	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/14/21 10:46	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/14/21 10:46	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/14/21 10:46	1
Styrene	0.50	U	0.50	0.056	ug/L			11/14/21 10:46	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/14/21 10:46	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/14/21 10:46	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			11/14/21 10:46	1
Toluene	0.50	U	0.50	0.041	ug/L			11/14/21 10:46	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/14/21 10:46	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/14/21 10:46	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/14/21 10:46	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/14/21 10:46	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/14/21 10:46	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/14/21 10:46	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/14/21 10:46	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/14/21 10:46	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/14/21 10:46	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/14/21 10:46	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/14/21 10:46	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/14/21 10:46	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/14/21 10:46	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/14/21 10:46	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/14/21 10:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*11/14/21 10:46*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*11/14/21 10:46*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*11/14/21 10:46*	*1*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-557392/3
Matrix: Water
Analysis Batch: 557392

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	18.1		ug/L		90	70 - 130
Bromochloromethane	20.0	19.2		ug/L		96	70 - 130
Bromodichloromethane	20.0	19.2		ug/L		96	70 - 130
Bromoform	20.0	19.3		ug/L		97	70 - 130
Bromomethane	20.0	19.9		ug/L		99	70 - 130
n-Butylbenzene	20.0	20.7		ug/L		103	70 - 130
sec-Butylbenzene	20.0	19.8		ug/L		99	70 - 130
tert-Butylbenzene	20.0	20.1		ug/L		100	70 - 130
Carbon tetrachloride	20.0	18.9		ug/L		95	70 - 130
Chlorobenzene	20.0	18.2		ug/L		91	70 - 130
Dibromochloromethane	20.0	20.0		ug/L		100	70 - 130
Chloroethane	20.0	17.9		ug/L		90	70 - 130
Chloroform	20.0	18.2		ug/L		91	70 - 130
Chloromethane	20.0	19.2		ug/L		96	70 - 130
2-Chlorotoluene	20.0	18.8		ug/L		94	70 - 130
4-Chlorotoluene	20.0	19.0		ug/L		95	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	18.9		ug/L		95	70 - 130
Dibromomethane	20.0	20.3		ug/L		102	70 - 130
1,2-Dichlorobenzene	20.0	19.0		ug/L		95	70 - 130
1,3-Dichlorobenzene	20.0	18.9		ug/L		95	70 - 130
1,4-Dichlorobenzene	20.0	18.5		ug/L		93	70 - 130
Dichlorodifluoromethane	20.0	20.7		ug/L		103	70 - 130
1,1-Dichloroethane	20.0	17.9		ug/L		90	70 - 130
1,2-Dichloroethane	20.0	18.8		ug/L		94	70 - 130
cis-1,2-Dichloroethene	20.0	18.5		ug/L		92	70 - 130
trans-1,2-Dichloroethene	20.0	17.6		ug/L		88	70 - 130
1,1-Dichloroethene	20.0	17.7		ug/L		88	70 - 130
1,2-Dichloropropane	20.0	19.3		ug/L		97	70 - 130
1,3-Dichloropropane	20.0	19.6		ug/L		98	70 - 130
2,2-Dichloropropane	20.0	18.8		ug/L		94	70 - 130
cis-1,3-Dichloropropene	20.0	19.8		ug/L		99	70 - 130
trans-1,3-Dichloropropene	20.0	20.0		ug/L		100	70 - 130
1,1-Dichloropropene	20.0	18.4		ug/L		92	70 - 130
Ethylbenzene	20.0	19.2		ug/L		96	70 - 130
Hexachlorobutadiene	20.0	18.1		ug/L		91	70 - 130
Isopropylbenzene	20.0	19.9		ug/L		99	70 - 130
4-Isopropyltoluene	20.0	20.6		ug/L		103	70 - 130
Methylene Chloride	20.0	20.0		ug/L		100	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	19.1		ug/L		95	70 - 130
Naphthalene	20.0	21.1		ug/L		106	70 - 130
N-Propylbenzene	20.0	19.4		ug/L		97	70 - 130
Styrene	20.0	20.8		ug/L		104	70 - 130
1,1,1,2-Tetrachloroethane	20.0	19.3		ug/L		96	70 - 130
1,1,2,2-Tetrachloroethane	20.0	19.0		ug/L		95	70 - 130
Tetrachloroethene	20.0	18.6		ug/L		93	70 - 130
Toluene	20.0	17.9		ug/L		89	70 - 130
1,2,3-Trichlorobenzene	20.0	19.6		ug/L		98	70 - 130
1,2,4-Trichlorobenzene	20.0	19.1		ug/L		96	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-557392/3
Matrix: Water
Analysis Batch: 557392

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1,1-Trichloroethane			20.0	17.2		ug/L		86	70 - 130		
1,1,2-Trichloroethane			20.0	19.6		ug/L		98	70 - 130		
Trichloroethene			20.0	17.3		ug/L		87	70 - 130		
Trichlorofluoromethane			20.0	21.0		ug/L		105	70 - 130		
1,2,3-Trichloropropane			20.0	18.2		ug/L		91	70 - 130		
1,2,4-Trimethylbenzene			20.0	20.4		ug/L		102	70 - 130		
1,3,5-Trimethylbenzene			20.0	20.2		ug/L		101	70 - 130		
Vinyl chloride			20.0	17.8		ug/L		89	70 - 130		
m-Xylene & p-Xylene			20.0	19.7		ug/L		99	70 - 130		
o-Xylene			20.0	20.0		ug/L		100	70 - 130		
Xylenes, Total			40.0	39.7		ug/L		99	70 - 130		
Bromobenzene			20.0	19.1		ug/L		96	70 - 130		
1,2-Dibromoethane			20.0	19.7		ug/L		98	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 280-557392/4
Matrix: Water
Analysis Batch: 557392

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			20.0	18.2		ug/L		91	70 - 130	1	20
Bromochloromethane			20.0	19.1		ug/L		96	70 - 130	1	20
Bromodichloromethane			20.0	19.9		ug/L		99	70 - 130	4	20
Bromoform			20.0	20.0		ug/L		100	70 - 130	3	20
Bromomethane			20.0	18.8		ug/L		94	70 - 130	6	20
n-Butylbenzene			20.0	20.9		ug/L		104	70 - 130	1	20
sec-Butylbenzene			20.0	20.3		ug/L		102	70 - 130	3	20
tert-Butylbenzene			20.0	20.5		ug/L		102	70 - 130	2	20
Carbon tetrachloride			20.0	18.9		ug/L		95	70 - 130	0	20
Chlorobenzene			20.0	18.6		ug/L		93	70 - 130	2	20
Dibromochloromethane			20.0	20.5		ug/L		103	70 - 130	3	20
Chloroethane			20.0	17.4		ug/L		87	70 - 130	3	20
Chloroform			20.0	18.4		ug/L		92	70 - 130	1	20
Chloromethane			20.0	19.0		ug/L		95	70 - 130	1	20
2-Chlorotoluene			20.0	19.3		ug/L		97	70 - 130	2	20
4-Chlorotoluene			20.0	19.5		ug/L		98	70 - 130	3	20
1,2-Dibromo-3-Chloropropane			20.0	19.5		ug/L		98	70 - 130	3	20
Dibromomethane			20.0	21.0		ug/L		105	70 - 130	3	20
1,2-Dichlorobenzene			20.0	19.6		ug/L		98	70 - 130	3	20
1,3-Dichlorobenzene			20.0	19.4		ug/L		97	70 - 130	2	20
1,4-Dichlorobenzene			20.0	19.0		ug/L		95	70 - 130	2	20
Dichlorodifluoromethane			20.0	18.0		ug/L		90	70 - 130	14	20
1,1-Dichloroethane			20.0	18.4		ug/L		92	70 - 130	2	20
1,2-Dichloroethane			20.0	19.0		ug/L		95	70 - 130	1	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-557392/4
Matrix: Water
Analysis Batch: 557392

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene			20.0	18.6		ug/L		93	70 - 130	1	20
trans-1,2-Dichloroethene			20.0	17.7		ug/L		88	70 - 130	0	20
1,1-Dichloroethene			20.0	17.3		ug/L		86	70 - 130	2	20
1,2-Dichloropropane			20.0	19.8		ug/L		99	70 - 130	2	20
1,3-Dichloropropane			20.0	20.2		ug/L		101	70 - 130	3	20
2,2-Dichloropropane			20.0	17.8		ug/L		89	70 - 130	5	20
cis-1,3-Dichloropropene			20.0	20.3		ug/L		101	70 - 130	2	20
trans-1,3-Dichloropropene			20.0	20.3		ug/L		102	70 - 130	2	20
1,1-Dichloropropene			20.0	18.7		ug/L		94	70 - 130	2	20
Ethylbenzene			20.0	19.6		ug/L		98	70 - 130	2	20
Hexachlorobutadiene			20.0	18.0		ug/L		90	70 - 130	1	20
Isopropylbenzene			20.0	20.5		ug/L		103	70 - 130	3	20
4-Isopropyltoluene			20.0	20.9		ug/L		104	70 - 130	1	20
Methylene Chloride			20.0	20.4		ug/L		102	70 - 130	2	20
Methyl-t-Butyl Ether (MTBE)			20.0	19.8		ug/L		99	70 - 130	4	20
Naphthalene			20.0	22.0		ug/L		110	70 - 130	4	20
N-Propylbenzene			20.0	19.8		ug/L		99	70 - 130	2	20
Styrene			20.0	21.2		ug/L		106	70 - 130	2	20
1,1,1,2-Tetrachloroethane			20.0	19.8		ug/L		99	70 - 130	3	20
1,1,2,2-Tetrachloroethane			20.0	20.0		ug/L		100	70 - 130	5	20
Tetrachloroethene			20.0	18.3		ug/L		91	70 - 130	2	20
Toluene			20.0	18.2		ug/L		91	70 - 130	2	20
1,2,3-Trichlorobenzene			20.0	20.4		ug/L		102	70 - 130	4	20
1,2,4-Trichlorobenzene			20.0	19.9		ug/L		100	70 - 130	4	20
1,1,1-Trichloroethane			20.0	17.4		ug/L		87	70 - 130	1	20
1,1,2-Trichloroethane			20.0	20.0		ug/L		100	70 - 130	2	20
Trichloroethene			20.0	17.8		ug/L		89	70 - 130	2	20
Trichlorofluoromethane			20.0	18.8		ug/L		94	70 - 130	11	20
1,2,3-Trichloropropane			20.0	19.1		ug/L		95	70 - 130	5	20
1,2,4-Trimethylbenzene			20.0	20.9		ug/L		104	70 - 130	2	20
1,3,5-Trimethylbenzene			20.0	20.6		ug/L		103	70 - 130	2	20
Vinyl chloride			20.0	17.0		ug/L		85	70 - 130	5	20
m-Xylene & p-Xylene			20.0	20.0		ug/L		100	70 - 130	1	20
o-Xylene			20.0	20.4		ug/L		102	70 - 130	2	20
Xylenes, Total			40.0	40.4		ug/L		101	70 - 130	2	20
Bromobenzene			20.0	19.9		ug/L		99	70 - 130	4	20
1,2-Dibromoethane			20.0	20.4		ug/L		102	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: 280-155219-B-24 MS
Matrix: Water
Analysis Batch: 557392

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	2.0	U D	80.0	71.1	D	ug/L		89	70 - 130
Bromochloromethane	2.0	U D	80.0	75.2	D	ug/L		94	70 - 130
Bromodichloromethane	2.0	U D	80.0	75.9	D	ug/L		95	70 - 130
Bromoform	2.0	U D	80.0	74.7	D	ug/L		93	70 - 130
Bromomethane	2.0	U D	80.0	67.9	D	ug/L		85	70 - 130
n-Butylbenzene	2.0	U D	80.0	76.0	D	ug/L		95	70 - 130
sec-Butylbenzene	2.0	U D	80.0	76.0	D	ug/L		95	70 - 130
tert-Butylbenzene	2.0	U D	80.0	77.0	D	ug/L		96	70 - 130
Carbon tetrachloride	2.0	U D	80.0	69.7	D	ug/L		87	70 - 130
Chlorobenzene	2.0	U D	80.0	72.0	D	ug/L		90	70 - 130
Dibromochloromethane	2.0	U D	80.0	78.1	D	ug/L		98	70 - 130
Chloroethane	2.0	U D	80.0	68.5	D	ug/L		86	70 - 130
Chloroform	1.6	J D	80.0	72.2	D	ug/L		88	70 - 130
Chloromethane	2.0	U D	80.0	66.0	D	ug/L		82	70 - 130
2-Chlorotoluene	2.0	U D	80.0	74.1	D	ug/L		93	70 - 130
4-Chlorotoluene	2.0	U D	80.0	74.6	D	ug/L		93	70 - 130
1,2-Dibromo-3-Chloropropane	2.0	U D	80.0	68.3	D	ug/L		85	70 - 130
Dibromomethane	2.0	U D	80.0	81.8	D	ug/L		102	70 - 130
1,2-Dichlorobenzene	2.0	U D	80.0	75.6	D	ug/L		95	70 - 130
1,3-Dichlorobenzene	2.0	U D	80.0	73.3	D	ug/L		92	70 - 130
1,4-Dichlorobenzene	2.0	U D	80.0	72.2	D	ug/L		90	70 - 130
Dichlorodifluoromethane	2.0	U D	80.0	67.9	D	ug/L		85	70 - 130
1,1-Dichloroethane	2.0	U D	80.0	70.1	D	ug/L		88	70 - 130
1,2-Dichloroethane	2.0	U D	80.0	74.3	D	ug/L		93	70 - 130
cis-1,2-Dichloroethene	2.0	U D	80.0	71.5	D	ug/L		89	70 - 130
trans-1,2-Dichloroethene	2.0	U D	80.0	68.0	D	ug/L		85	70 - 130
1,1-Dichloroethene	1.8	J D	80.0	66.2	D	ug/L		80	70 - 130
1,2-Dichloropropane	2.0	U D	80.0	75.7	D	ug/L		95	70 - 130
1,3-Dichloropropane	2.0	U D	80.0	78.3	D	ug/L		98	70 - 130
2,2-Dichloropropane	2.0	U D	80.0	60.1	D	ug/L		75	70 - 130
cis-1,3-Dichloropropene	2.0	U D	80.0	70.1	D	ug/L		88	70 - 130
trans-1,3-Dichloropropene	2.0	U D	80.0	74.5	D	ug/L		93	70 - 130
1,1-Dichloropropene	2.0	U D	80.0	65.2	D	ug/L		82	70 - 130
Ethylbenzene	2.0	U D	80.0	74.8	D	ug/L		93	70 - 130
Hexachlorobutadiene	2.0	U D	80.0	63.8	D	ug/L		80	70 - 130
Isopropylbenzene	2.0	U D	80.0	75.6	D	ug/L		95	70 - 130
4-Isopropyltoluene	2.0	U D	80.0	78.0	D	ug/L		97	70 - 130
Methylene Chloride	2.0	U D	80.0	79.8	D	ug/L		100	70 - 130
Methyl-t-Butyl Ether (MTBE)	2.0	U D	80.0	72.1	D	ug/L		90	70 - 130
Naphthalene	2.0	U D	80.0	76.5	D	ug/L		96	70 - 130
N-Propylbenzene	2.0	U D	80.0	74.5	D	ug/L		93	70 - 130
Styrene	2.0	U D	80.0	82.7	D	ug/L		103	70 - 130
1,1,1,2-Tetrachloroethane	2.0	U D	80.0	75.9	D	ug/L		95	70 - 130
1,1,2,2-Tetrachloroethane	2.0	U D	80.0	75.0	D	ug/L		94	70 - 130
Tetrachloroethene	68	D	80.0	123	D	ug/L		69	70 - 130
Toluene	0.72	J D	80.0	69.1	D	ug/L		85	70 - 130
1,2,3-Trichlorobenzene	2.0	U D	80.0	73.3	D	ug/L		92	70 - 130
1,2,4-Trichlorobenzene	2.0	U D	80.0	68.2	D	ug/L		85	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: 280-155219-B-24 MS
Matrix: Water
Analysis Batch: 557392

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	1.7	J D	80.0	67.6	D	ug/L		82	70 - 130
1,1,2-Trichloroethane	2.0	U D	80.0	77.8	D	ug/L		97	70 - 130
Trichloroethene	4.4	D	80.0	68.4	D	ug/L		80	70 - 130
Trichlorofluoromethane	2.0	U D	80.0	75.6	D	ug/L		94	70 - 130
1,2,3-Trichloropropane	2.0	U D	80.0	70.5	D	ug/L		88	70 - 130
1,2,4-Trimethylbenzene	2.0	U D	80.0	79.2	D	ug/L		99	70 - 130
1,3,5-Trimethylbenzene	2.0	U D	80.0	77.8	D	ug/L		97	70 - 130
Vinyl chloride	2.0	U D	80.0	58.9	D	ug/L		74	70 - 130
m-Xylene & p-Xylene	4.0	U D	80.0	76.2	D	ug/L		95	70 - 130
o-Xylene	2.0	U D	80.0	78.7	D	ug/L		98	70 - 130
Xylenes, Total	6.0	U	160	155		ug/L		97	70 - 130
Bromobenzene	2.0	U D	80.0	75.8	D	ug/L		95	70 - 130
1,2-Dibromoethane	2.0	U D	80.0	76.7	D	ug/L		96	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: 280-155219-B-24 MSD
Matrix: Water
Analysis Batch: 557392

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	2.0	U D	80.0	76.0	D	ug/L		95	70 - 130	7	20
Bromochloromethane	2.0	U D	80.0	80.6	D	ug/L		101	70 - 130	7	20
Bromodichloromethane	2.0	U D	80.0	79.3	D	ug/L		99	70 - 130	4	20
Bromoform	2.0	U D	80.0	78.8	D	ug/L		99	70 - 130	5	20
Bromomethane	2.0	U D	80.0	80.7	D	ug/L		101	70 - 130	17	20
n-Butylbenzene	2.0	U D	80.0	83.5	D	ug/L		104	70 - 130	9	20
sec-Butylbenzene	2.0	U D	80.0	83.6	D	ug/L		105	70 - 130	10	20
tert-Butylbenzene	2.0	U D	80.0	84.5	D	ug/L		106	70 - 130	9	20
Carbon tetrachloride	2.0	U D	80.0	76.4	D	ug/L		95	70 - 130	9	20
Chlorobenzene	2.0	U D	80.0	75.9	D	ug/L		95	70 - 130	5	20
Dibromochloromethane	2.0	U D	80.0	82.5	D	ug/L		103	70 - 130	6	20
Chloroethane	2.0	U D	80.0	75.5	D	ug/L		94	70 - 130	10	20
Chloroform	1.6	J D	80.0	77.1	D	ug/L		94	70 - 130	7	20
Chloromethane	2.0	U D	80.0	76.1	D	ug/L		95	70 - 130	14	20
2-Chlorotoluene	2.0	U D	80.0	79.7	D	ug/L		100	70 - 130	7	20
4-Chlorotoluene	2.0	U D	80.0	79.4	D	ug/L		99	70 - 130	6	20
1,2-Dibromo-3-Chloropropane	2.0	U D	80.0	78.1	D	ug/L		98	70 - 130	13	20
Dibromomethane	2.0	U D	80.0	85.5	D	ug/L		107	70 - 130	4	20
1,2-Dichlorobenzene	2.0	U D	80.0	81.3	D	ug/L		102	70 - 130	7	20
1,3-Dichlorobenzene	2.0	U D	80.0	79.2	D	ug/L		99	70 - 130	8	20
1,4-Dichlorobenzene	2.0	U D	80.0	77.0	D	ug/L		96	70 - 130	6	20
Dichlorodifluoromethane	2.0	U D	80.0	75.0	D	ug/L		94	70 - 130	10	20
1,1-Dichloroethane	2.0	U D	80.0	76.0	D	ug/L		95	70 - 130	8	20
1,2-Dichloroethane	2.0	U D	80.0	78.6	D	ug/L		98	70 - 130	6	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: 280-155219-B-24 MSD
Matrix: Water
Analysis Batch: 557392

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	2.0	U D	80.0	77.7	D	ug/L		97	70 - 130	8	20
trans-1,2-Dichloroethene	2.0	U D	80.0	74.1	D	ug/L		93	70 - 130	9	20
1,1-Dichloroethene	1.8	J D	80.0	77.0	D	ug/L		94	70 - 130	15	20
1,2-Dichloropropane	2.0	U D	80.0	80.9	D	ug/L		101	70 - 130	7	20
1,3-Dichloropropane	2.0	U D	80.0	82.7	D	ug/L		103	70 - 130	5	20
2,2-Dichloropropane	2.0	U D	80.0	64.3	D	ug/L		80	70 - 130	7	20
cis-1,3-Dichloropropene	2.0	U D	80.0	75.9	D	ug/L		95	70 - 130	8	20
trans-1,3-Dichloropropene	2.0	U D	80.0	79.0	D	ug/L		99	70 - 130	6	20
1,1-Dichloropropene	2.0	U D	80.0	71.6	D	ug/L		90	70 - 130	9	20
Ethylbenzene	2.0	U D	80.0	78.8	D	ug/L		99	70 - 130	5	20
Hexachlorobutadiene	2.0	U D	80.0	72.3	D	ug/L		90	70 - 130	12	20
Isopropylbenzene	2.0	U D	80.0	83.0	D	ug/L		104	70 - 130	9	20
4-Isopropyltoluene	2.0	U D	80.0	85.4	D	ug/L		107	70 - 130	9	20
Methylene Chloride	2.0	U D	80.0	84.9	D	ug/L		106	70 - 130	6	20
Methyl-t-Butyl Ether (MTBE)	2.0	U D	80.0	81.1	D	ug/L		101	70 - 130	12	20
Naphthalene	2.0	U D	80.0	86.1	D	ug/L		108	70 - 130	12	20
N-Propylbenzene	2.0	U D	80.0	80.9	D	ug/L		101	70 - 130	8	20
Styrene	2.0	U D	80.0	85.2	D	ug/L		107	70 - 130	3	20
1,1,1,2-Tetrachloroethane	2.0	U D	80.0	80.2	D	ug/L		100	70 - 130	5	20
1,1,2,2-Tetrachloroethane	2.0	U D	80.0	82.5	D	ug/L		103	70 - 130	9	20
Tetrachloroethene	68	D	80.0	129	D	ug/L		76	70 - 130	4	20
Toluene	0.72	J D	80.0	74.5	D	ug/L		92	70 - 130	8	20
1,2,3-Trichlorobenzene	2.0	U D	80.0	81.1	D	ug/L		101	70 - 130	10	20
1,2,4-Trichlorobenzene	2.0	U D	80.0	76.9	D	ug/L		96	70 - 130	12	20
1,1,1-Trichloroethane	1.7	J D	80.0	72.5	D	ug/L		89	70 - 130	7	20
1,1,2-Trichloroethane	2.0	U D	80.0	80.6	D	ug/L		101	70 - 130	3	20
Trichloroethene	4.4	D	80.0	74.8	D	ug/L		88	70 - 130	9	20
Trichlorofluoromethane	2.0	U D	80.0	84.9	D	ug/L		106	70 - 130	12	20
1,2,3-Trichloropropane	2.0	U D	80.0	79.6	D	ug/L		100	70 - 130	12	20
1,2,4-Trimethylbenzene	2.0	U D	80.0	85.9	D	ug/L		107	70 - 130	8	20
1,3,5-Trimethylbenzene	2.0	U D	80.0	84.4	D	ug/L		106	70 - 130	8	20
Vinyl chloride	2.0	U D	80.0	73.9	D	ug/L		92	70 - 130	23	20
m-Xylene & p-Xylene	4.0	U D	80.0	80.6	D	ug/L		101	70 - 130	6	20
o-Xylene	2.0	U D	80.0	82.1	D	ug/L		103	70 - 130	4	20
Xylenes, Total	6.0	U	160	163		ug/L		102	70 - 130	5	20
Bromobenzene	2.0	U D	80.0	82.0	D	ug/L		102	70 - 130	8	20
1,2-Dibromoethane	2.0	U D	80.0	81.4	D	ug/L		102	70 - 130	6	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-556862/1-A
Matrix: Water
Analysis Batch: 557183

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 556862

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	0.20	U	0.20	0.089	ug/L		11/10/21 15:00	11/11/21 17:18	1

Lab Sample ID: LCS 280-556862/2-A
Matrix: Water
Analysis Batch: 557183

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 556862

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			40.0	40.6		ug/L		101	82 - 116		

Lab Sample ID: 280-155316-2 MS
Matrix: Water
Analysis Batch: 557183

Client Sample ID: 43477-002
Prep Type: Total Recoverable
Prep Batch: 556862

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	0.11	B	40.0	40.7		ug/L		102	82 - 116		

Lab Sample ID: 280-155316-2 MSD
Matrix: Water
Analysis Batch: 557183

Client Sample ID: 43477-002
Prep Type: Total Recoverable
Prep Batch: 556862

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	0.11	B	40.0	40.2		ug/L		100	82 - 116	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155316-1
SDG: 43477

GC/MS VOA

Analysis Batch: 557386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-155316-1	43477-001	Total/NA	Water	8260C	
MB 280-557386/6	Method Blank	Total/NA	Water	8260C	
LCS 280-557386/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-557386/4	Lab Control Sample Dup	Total/NA	Water	8260C	

Analysis Batch: 557392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-155316-2	43477-002	Total/NA	Water	8260C	
280-155316-3	43477-003	Total/NA	Water	8260C	
MB 280-557392/6	Method Blank	Total/NA	Water	8260C	
LCS 280-557392/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-557392/4	Lab Control Sample Dup	Total/NA	Water	8260C	
280-155219-B-24 MS	Matrix Spike	Total/NA	Water	8260C	
280-155219-B-24 MSD	Matrix Spike Duplicate	Total/NA	Water	8260C	

Metals

Prep Batch: 556862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-155316-2	43477-002	Total Recoverable	Water	3005A	
MB 280-556862/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-556862/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-155316-2 MS	43477-002	Total Recoverable	Water	3005A	
280-155316-2 MSD	43477-002	Total Recoverable	Water	3005A	

Analysis Batch: 557183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-155316-2	43477-002	Total Recoverable	Water	6020A	556862
MB 280-556862/1-A	Method Blank	Total Recoverable	Water	6020A	556862
LCS 280-556862/2-A	Lab Control Sample	Total Recoverable	Water	6020A	556862
280-155316-2 MS	43477-002	Total Recoverable	Water	6020A	556862
280-155316-2 MSD	43477-002	Total Recoverable	Water	6020A	556862

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155316-1
SDG: 43477

Client Sample ID: 43477-001
Date Collected: 11/05/21 10:15
Date Received: 11/06/21 09:00

Lab Sample ID: 280-155316-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	557386	11/14/21 00:02	GO	TAL DEN

Client Sample ID: 43477-002
Date Collected: 11/05/21 10:10
Date Received: 11/06/21 09:00

Lab Sample ID: 280-155316-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	557392	11/14/21 11:10	TAW	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	556862	11/10/21 15:00	CEH	TAL DEN
Total Recoverable	Analysis	6020A		1			557183	11/11/21 17:25	LMT	TAL DEN

Client Sample ID: 43477-003
Date Collected: 11/05/21 09:00
Date Received: 11/06/21 09:00

Lab Sample ID: 280-155316-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	557392	11/14/21 11:33	TAW	TAL DEN

Laboratory References:
TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155316-1
SDG: 43477

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-30-21
A2LA	ISO/IEC 17025	2907.01	11-30-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-21-21
Arkansas DEQ	State	19-047-0	06-01-21 *
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-22
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	07-01-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	09-01-21 *
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-22
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	10-01-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21 *
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-22
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-22
Wyoming (UST)	A2LA	2907.01	11-30-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

13.5 7.61

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 43477

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: Bob Metz	Phone: 314-298-8566
2 B. Howe	A.J. Scheff	Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type UiD	Smp	Coll	Sample Information: Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Additional Sample Information: Name/Description	Conc. Vol./Units	Cont. Type	# of Cont.	Preservative	Analysis Requested: Alpha/Beta	Tritium	Gamma	Strontium	8260 EPA 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	11/5/21	1015	W	RTW-1 Influent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	11/5/21	1010	W	RTW-1 Effluent	40 ML	SC	3	HCL					X					
002	E	G	095-152	0	11/5/21	1010	W	RTW-1 Effluent	250 ML	P	1	HNO3										X
003	E	G	TB-1	0	11/5/21	0900	W	Trip Blank	40 ML	SC	3	HCL					X					

280-155316 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print AJ Scheff 11/5/21	Print	Print
Signature BW	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print John C Haven 11/06/2021	Print	Print
Signature 0900	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13) CHRONICO

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-155316-1
SDG Number: 43477

Login Number: 155316
List Number: 1
Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-155747-1
Laboratory Sample Delivery Group: 43504
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
12/1/2021 4:29:55 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155747-1
SDG: 43504

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
B	The reported value is less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-155747-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 280-155747-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 11/17/2021 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

VOLATILE ORGANIC COMPOUNDS

Samples 43504-001 (280-155747-1), 43504-002 (280-155747-2) and 43504-003 (280-155747-3) were analyzed for volatile organic compounds in accordance with SW 846 Method 8260C. The samples were analyzed on 11/29/2021.

Job ID: 280-155747-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

Analytical Batch 280-558917:
Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD was prepared to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 43504-002 (280-155747-2) was analyzed for metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 11/21/2021 and analyzed on 11/24/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155747-1
SDG: 43504

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL DEN
3020A	Preparation, Total Metals	SW846	TAL DEN
5030C	Purge and Trap	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155747-1
SDG: 43504

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-155747-1	43504-001	Water	11/15/21 10:30	11/17/21 11:00
280-155747-2	43504-002	Water	11/15/21 10:35	11/17/21 11:00
280-155747-3	43504-003	Water	11/15/21 09:00	11/17/21 11:00

Client Sample ID: 43504-001

Date Collected: 11/15/21 10:30
Date Received: 11/17/21 11:00

Lab Sample ID: 280-155747-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/29/21 13:37	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/29/21 13:37	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/29/21 13:37	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/29/21 13:37	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/29/21 13:37	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/29/21 13:37	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/29/21 13:37	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/29/21 13:37	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/29/21 13:37	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/29/21 13:37	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/29/21 13:37	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/29/21 13:37	1
Chloroform	**0.56**		0.50	0.11	ug/L			11/29/21 13:37	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/29/21 13:37	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/29/21 13:37	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/29/21 13:37	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/29/21 13:37	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/29/21 13:37	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/29/21 13:37	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/29/21 13:37	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/29/21 13:37	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/29/21 13:37	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/29/21 13:37	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/29/21 13:37	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/29/21 13:37	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/29/21 13:37	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/29/21 13:37	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/29/21 13:37	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/29/21 13:37	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/29/21 13:37	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/29/21 13:37	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/29/21 13:37	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/29/21 13:37	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/29/21 13:37	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/29/21 13:37	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/29/21 13:37	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/29/21 13:37	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/29/21 13:37	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/29/21 13:37	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/29/21 13:37	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/29/21 13:37	1
Styrene	0.50	U	0.50	0.056	ug/L			11/29/21 13:37	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/29/21 13:37	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/29/21 13:37	1
Tetrachloroethene	**2.8**		0.50	0.072	ug/L			11/29/21 13:37	1
Toluene	0.50	U	0.50	0.041	ug/L			11/29/21 13:37	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/29/21 13:37	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/29/21 13:37	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/29/21 13:37	1

Client Sample ID: 43504-001

Date Collected: 11/15/21 10:30
Date Received: 11/17/21 11:00

Lab Sample ID: 280-155747-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/29/21 13:37	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/29/21 13:37	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/29/21 13:37	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/29/21 13:37	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/29/21 13:37	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/29/21 13:37	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/29/21 13:37	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/29/21 13:37	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/29/21 13:37	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/29/21 13:37	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/29/21 13:37	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/29/21 13:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*11/29/21 13:37*	*1*
Toluene-d8 (Surr)	*94*		*70 - 130*		*11/29/21 13:37*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*11/29/21 13:37*	*1*

Client Sample ID: 43504-002

Date Collected: 11/15/21 10:35
Date Received: 11/17/21 11:00

Lab Sample ID: 280-155747-2

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/29/21 14:00	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/29/21 14:00	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/29/21 14:00	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/29/21 14:00	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/29/21 14:00	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/29/21 14:00	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/29/21 14:00	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/29/21 14:00	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/29/21 14:00	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/29/21 14:00	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/29/21 14:00	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/29/21 14:00	1
Chloroform	0.50	U	0.50	0.11	ug/L			11/29/21 14:00	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/29/21 14:00	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/29/21 14:00	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/29/21 14:00	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/29/21 14:00	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/29/21 14:00	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/29/21 14:00	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/29/21 14:00	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/29/21 14:00	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/29/21 14:00	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/29/21 14:00	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/29/21 14:00	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/29/21 14:00	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/29/21 14:00	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155747-1
SDG: 43504

Client Sample ID: 43504-002
Date Collected: 11/15/21 10:35
Date Received: 11/17/21 11:00

Lab Sample ID: 280-155747-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/29/21 14:00	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/29/21 14:00	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/29/21 14:00	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/29/21 14:00	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/29/21 14:00	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/29/21 14:00	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/29/21 14:00	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/29/21 14:00	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/29/21 14:00	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/29/21 14:00	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/29/21 14:00	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/29/21 14:00	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/29/21 14:00	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/29/21 14:00	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/29/21 14:00	1
Styrene	0.50	U	0.50	0.056	ug/L			11/29/21 14:00	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/29/21 14:00	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/29/21 14:00	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			11/29/21 14:00	1
Toluene	0.50	U	0.50	0.041	ug/L			11/29/21 14:00	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/29/21 14:00	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/29/21 14:00	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/29/21 14:00	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/29/21 14:00	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/29/21 14:00	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/29/21 14:00	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/29/21 14:00	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/29/21 14:00	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/29/21 14:00	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/29/21 14:00	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/29/21 14:00	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/29/21 14:00	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/29/21 14:00	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/29/21 14:00	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/29/21 14:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*11/29/21 14:00*	*1*
Toluene-d8 (Surr)	*93*		*70 - 130*		*11/29/21 14:00*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*11/29/21 14:00*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	**0.10**	**B**	0.20	0.089	ug/L		11/21/21 09:55	11/24/21 03:37	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155747-1
SDG: 43504

Client Sample ID: 43504-003
Date Collected: 11/15/21 09:00
Date Received: 11/17/21 11:00

Lab Sample ID: 280-155747-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/29/21 14:24	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/29/21 14:24	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/29/21 14:24	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/29/21 14:24	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/29/21 14:24	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/29/21 14:24	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/29/21 14:24	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/29/21 14:24	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/29/21 14:24	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/29/21 14:24	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/29/21 14:24	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/29/21 14:24	1
Chloroform	0.50	U	0.50	0.11	ug/L			11/29/21 14:24	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/29/21 14:24	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/29/21 14:24	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/29/21 14:24	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/29/21 14:24	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/29/21 14:24	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/29/21 14:24	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/29/21 14:24	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/29/21 14:24	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/29/21 14:24	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/29/21 14:24	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/29/21 14:24	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/29/21 14:24	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/29/21 14:24	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/29/21 14:24	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/29/21 14:24	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/29/21 14:24	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/29/21 14:24	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/29/21 14:24	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/29/21 14:24	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/29/21 14:24	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/29/21 14:24	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/29/21 14:24	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/29/21 14:24	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/29/21 14:24	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/29/21 14:24	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/29/21 14:24	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/29/21 14:24	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/29/21 14:24	1
Styrene	0.50	U	0.50	0.056	ug/L			11/29/21 14:24	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/29/21 14:24	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/29/21 14:24	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			11/29/21 14:24	1
Toluene	0.50	U	0.50	0.041	ug/L			11/29/21 14:24	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/29/21 14:24	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/29/21 14:24	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/29/21 14:24	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155747-1
SDG: 43504

Client Sample ID: 43504-003
Date Collected: 11/15/21 09:00
Date Received: 11/17/21 11:00

Lab Sample ID: 280-155747-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/29/21 14:24	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/29/21 14:24	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/29/21 14:24	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/29/21 14:24	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/29/21 14:24	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/29/21 14:24	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/29/21 14:24	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/29/21 14:24	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/29/21 14:24	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/29/21 14:24	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/29/21 14:24	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/29/21 14:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*11/29/21 14:24*	*1*
Toluene-d8 (Surr)	*91*		*70 - 130*		*11/29/21 14:24*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*11/29/21 14:24*	*1*

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155747-1
SDG: 43504

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-155747-1	43504-001	103	94	103
280-155747-2	43504-002	103	93	100
280-155747-3	43504-003	103	91	98
LCS 280-558917/3	Lab Control Sample	87	94	102
LCSD 280-558917/4	Lab Control Sample Dup	86	96	106
MB 280-558917/6	Method Blank	101	95	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 280-558917/6
Matrix: Water
Analysis Batch: 558917

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			11/29/21 13:13	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			11/29/21 13:13	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			11/29/21 13:13	1
Bromoform	0.50	U	0.50	0.092	ug/L			11/29/21 13:13	1
Bromomethane	0.50	U	0.50	0.27	ug/L			11/29/21 13:13	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			11/29/21 13:13	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			11/29/21 13:13	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			11/29/21 13:13	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			11/29/21 13:13	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			11/29/21 13:13	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			11/29/21 13:13	1
Chloroethane	0.50	U	0.50	0.14	ug/L			11/29/21 13:13	1
Chloroform	0.50	U	0.50	0.11	ug/L			11/29/21 13:13	1
Chloromethane	0.50	U	0.50	0.097	ug/L			11/29/21 13:13	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			11/29/21 13:13	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			11/29/21 13:13	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			11/29/21 13:13	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			11/29/21 13:13	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			11/29/21 13:13	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			11/29/21 13:13	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			11/29/21 13:13	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			11/29/21 13:13	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			11/29/21 13:13	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			11/29/21 13:13	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			11/29/21 13:13	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			11/29/21 13:13	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			11/29/21 13:13	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			11/29/21 13:13	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			11/29/21 13:13	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			11/29/21 13:13	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			11/29/21 13:13	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			11/29/21 13:13	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			11/29/21 13:13	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			11/29/21 13:13	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			11/29/21 13:13	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			11/29/21 13:13	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			11/29/21 13:13	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			11/29/21 13:13	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			11/29/21 13:13	1
Naphthalene	0.50	U	0.50	0.085	ug/L			11/29/21 13:13	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			11/29/21 13:13	1
Styrene	0.50	U	0.50	0.056	ug/L			11/29/21 13:13	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			11/29/21 13:13	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			11/29/21 13:13	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			11/29/21 13:13	1
Toluene	0.50	U	0.50	0.041	ug/L			11/29/21 13:13	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			11/29/21 13:13	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			11/29/21 13:13	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-558917/6
Matrix: Water
Analysis Batch: 558917

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			11/29/21 13:13	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			11/29/21 13:13	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			11/29/21 13:13	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			11/29/21 13:13	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			11/29/21 13:13	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			11/29/21 13:13	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			11/29/21 13:13	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			11/29/21 13:13	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			11/29/21 13:13	1
o-Xylene	0.50	U	0.50	0.095	ug/L			11/29/21 13:13	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			11/29/21 13:13	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			11/29/21 13:13	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			11/29/21 13:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*		*11/29/21 13:13*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*		*11/29/21 13:13*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*11/29/21 13:13*	*1*

Lab Sample ID: LCS 280-558917/3
Matrix: Water
Analysis Batch: 558917

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	18.5		ug/L		92	70 - 130
Bromochloromethane	20.0	18.3		ug/L		92	70 - 130
Bromodichloromethane	20.0	18.6		ug/L		93	70 - 130
Bromoform	20.0	19.4		ug/L		97	70 - 130
Bromomethane	20.0	19.4		ug/L		97	70 - 130
n-Butylbenzene	20.0	20.3		ug/L		101	70 - 130
sec-Butylbenzene	20.0	19.9		ug/L		100	70 - 130
tert-Butylbenzene	20.0	19.8		ug/L		99	70 - 130
Carbon tetrachloride	20.0	18.3		ug/L		92	70 - 130
Chlorobenzene	20.0	18.3		ug/L		91	70 - 130
Dibromochloromethane	20.0	18.7		ug/L		93	70 - 130
Chloroethane	20.0	15.4		ug/L		77	70 - 130
Chloroform	20.0	18.3		ug/L		92	70 - 130
Chloromethane	20.0	16.5		ug/L		82	70 - 130
2-Chlorotoluene	20.0	19.1		ug/L		96	70 - 130
4-Chlorotoluene	20.0	19.4		ug/L		97	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	17.5		ug/L		88	70 - 130
Dibromomethane	20.0	18.0		ug/L		90	70 - 130
1,2-Dichlorobenzene	20.0	19.0		ug/L		95	70 - 130
1,3-Dichlorobenzene	20.0	18.9		ug/L		94	70 - 130
1,4-Dichlorobenzene	20.0	18.2		ug/L		91	70 - 130
Dichlorodifluoromethane	20.0	17.5		ug/L		87	70 - 130
1,1-Dichloroethane	20.0	18.1		ug/L		91	70 - 130
1,2-Dichloroethane	20.0	18.2		ug/L		91	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-558917/3
Matrix: Water
Analysis Batch: 558917

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	20.0	17.7		ug/L		89	70 - 130
trans-1,2-Dichloroethene	20.0	17.4		ug/L		87	70 - 130
1,1-Dichloroethene	20.0	17.6		ug/L		88	70 - 130
1,2-Dichloropropane	20.0	19.1		ug/L		96	70 - 130
1,3-Dichloropropane	20.0	18.7		ug/L		94	70 - 130
2,2-Dichloropropane	20.0	18.6		ug/L		93	70 - 130
cis-1,3-Dichloropropene	20.0	18.8		ug/L		94	70 - 130
trans-1,3-Dichloropropene	20.0	19.9		ug/L		99	70 - 130
1,1-Dichloropropene	20.0	18.1		ug/L		91	70 - 130
Ethylbenzene	20.0	19.2		ug/L		96	70 - 130
Hexachlorobutadiene	20.0	17.4		ug/L		87	70 - 130
Isopropylbenzene	20.0	19.8		ug/L		99	70 - 130
4-Isopropyltoluene	20.0	20.5		ug/L		103	70 - 130
Methylene Chloride	20.0	16.5		ug/L		83	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	18.0		ug/L		90	70 - 130
Naphthalene	20.0	17.5		ug/L		88	70 - 130
N-Propylbenzene	20.0	19.5		ug/L		97	70 - 130
Styrene	20.0	21.2		ug/L		106	70 - 130
1,1,1,2-Tetrachloroethane	20.0	19.2		ug/L		96	70 - 130
1,1,2,2-Tetrachloroethane	20.0	18.2		ug/L		91	70 - 130
Tetrachloroethene	20.0	18.1		ug/L		90	70 - 130
Toluene	20.0	18.9		ug/L		95	70 - 130
1,2,3-Trichlorobenzene	20.0	18.7		ug/L		93	70 - 130
1,2,4-Trichlorobenzene	20.0	18.7		ug/L		94	70 - 130
1,1,1-Trichloroethane	20.0	18.4		ug/L		92	70 - 130
1,1,2-Trichloroethane	20.0	19.8		ug/L		99	70 - 130
Trichloroethene	20.0	17.5		ug/L		88	70 - 130
Trichlorofluoromethane	20.0	18.5		ug/L		92	70 - 130
1,2,3-Trichloropropane	20.0	18.0		ug/L		90	70 - 130
1,2,4-Trimethylbenzene	20.0	20.7		ug/L		104	70 - 130
1,3,5-Trimethylbenzene	20.0	20.3		ug/L		101	70 - 130
Vinyl chloride	20.0	16.8		ug/L		84	70 - 130
m-Xylene & p-Xylene	20.0	19.6		ug/L		98	70 - 130
o-Xylene	20.0	20.2		ug/L		101	70 - 130
Xylenes, Total	40.0	39.8		ug/L		100	70 - 130
Bromobenzene	20.0	18.6		ug/L		93	70 - 130
1,2-Dibromoethane	20.0	18.7		ug/L		93	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 130*
Toluene-d8 (Surr)	*94*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-558917/4
Matrix: Water
Analysis Batch: 558917

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	20.6		ug/L		103	70 - 130	11	20
Bromochloromethane	20.0	20.0		ug/L		100	70 - 130	9	20
Bromodichloromethane	20.0	20.7		ug/L		104	70 - 130	11	20
Bromoform	20.0	21.4		ug/L		107	70 - 130	10	20
Bromomethane	20.0	20.0		ug/L		100	70 - 130	3	20
n-Butylbenzene	20.0	23.6		ug/L		118	70 - 130	15	20
sec-Butylbenzene	20.0	23.5		ug/L		117	70 - 130	16	20
tert-Butylbenzene	20.0	22.9		ug/L		114	70 - 130	14	20
Carbon tetrachloride	20.0	19.7		ug/L		98	70 - 130	7	20
Chlorobenzene	20.0	20.3		ug/L		101	70 - 130	10	20
Dibromochloromethane	20.0	20.4		ug/L		102	70 - 130	9	20
Chloroethane	20.0	16.6		ug/L		83	70 - 130	7	20
Chloroform	20.0	20.2		ug/L		101	70 - 130	10	20
Chloromethane	20.0	18.0		ug/L		90	70 - 130	9	20
2-Chlorotoluene	20.0	21.8		ug/L		109	70 - 130	13	20
4-Chlorotoluene	20.0	22.2		ug/L		111	70 - 130	13	20
1,2-Dibromo-3-Chloropropane	20.0	21.0		ug/L		105	70 - 130	18	20
Dibromomethane	20.0	19.9		ug/L		100	70 - 130	10	20
1,2-Dichlorobenzene	20.0	21.6		ug/L		108	70 - 130	13	20
1,3-Dichlorobenzene	20.0	21.4		ug/L		107	70 - 130	13	20
1,4-Dichlorobenzene	20.0	20.8		ug/L		104	70 - 130	13	20
Dichlorodifluoromethane	20.0	19.1		ug/L		95	70 - 130	9	20
1,1-Dichloroethane	20.0	19.7		ug/L		98	70 - 130	8	20
1,2-Dichloroethane	20.0	20.5		ug/L		103	70 - 130	12	20
cis-1,2-Dichloroethene	20.0	19.8		ug/L		99	70 - 130	11	20
trans-1,2-Dichloroethene	20.0	19.3		ug/L		97	70 - 130	11	20
1,1-Dichloroethene	20.0	20.6		ug/L		103	70 - 130	15	20
1,2-Dichloropropane	20.0	20.9		ug/L		105	70 - 130	9	20
1,3-Dichloropropane	20.0	20.8		ug/L		104	70 - 130	11	20
2,2-Dichloropropane	20.0	20.8		ug/L		104	70 - 130	11	20
cis-1,3-Dichloropropene	20.0	21.2		ug/L		106	70 - 130	12	20
trans-1,3-Dichloropropene	20.0	22.0		ug/L		110	70 - 130	10	20
1,1-Dichloropropene	20.0	18.2		ug/L		91	70 - 130	1	20
Ethylbenzene	20.0	21.5		ug/L		107	70 - 130	11	20
Hexachlorobutadiene	20.0	20.7		ug/L		104	70 - 130	18	20
Isopropylbenzene	20.0	23.1		ug/L		115	70 - 130	15	20
4-Isopropyltoluene	20.0	23.7		ug/L		119	70 - 130	14	20
Methylene Chloride	20.0	18.5		ug/L		92	70 - 130	11	20
Methyl-t-Butyl Ether (MTBE)	20.0	20.8		ug/L		104	70 - 130	14	20
Naphthalene	20.0	20.9		ug/L		105	70 - 130	18	20
N-Propylbenzene	20.0	22.3		ug/L		112	70 - 130	14	20
Styrene	20.0	23.4		ug/L		117	70 - 130	10	20
1,1,1,2-Tetrachloroethane	20.0	21.1		ug/L		106	70 - 130	10	20
1,1,2,2-Tetrachloroethane	20.0	20.9		ug/L		105	70 - 130	14	20
Tetrachloroethene	20.0	20.3		ug/L		101	70 - 130	12	20
Toluene	20.0	20.9		ug/L		105	70 - 130	10	20
1,2,3-Trichlorobenzene	20.0	22.1		ug/L		110	70 - 130	17	20
1,2,4-Trichlorobenzene	20.0	22.1		ug/L		110	70 - 130	16	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-558917/4
Matrix: Water
Analysis Batch: 558917

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	20.3		ug/L		101	70 - 130	10	20
1,1,2-Trichloroethane			20.0	21.6		ug/L		108	70 - 130	9	20
Trichloroethene			20.0	20.2		ug/L		101	70 - 130	14	20
Trichlorofluoromethane			20.0	20.0		ug/L		100	70 - 130	8	20
1,2,3-Trichloropropane			20.0	21.1		ug/L		106	70 - 130	16	20
1,2,4-Trimethylbenzene			20.0	23.4		ug/L		117	70 - 130	12	20
1,3,5-Trimethylbenzene			20.0	23.1		ug/L		116	70 - 130	13	20
Vinyl chloride			20.0	18.3		ug/L		92	70 - 130	9	20
m-Xylene & p-Xylene			20.0	21.9		ug/L		109	70 - 130	11	20
o-Xylene			20.0	22.7		ug/L		113	70 - 130	11	20
Xylenes, Total			40.0	44.6		ug/L		112	70 - 130	11	20
Bromobenzene			20.0	20.9		ug/L		105	70 - 130	12	20
1,2-Dibromoethane			20.0	21.3		ug/L		106	70 - 130	13	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-558102/1-A
Matrix: Water
Analysis Batch: 558726

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 558102

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	0.20	U	0.20	0.089	ug/L		11/21/21 09:55	11/24/21 03:30	1

Lab Sample ID: LCS 280-558102/2-A
Matrix: Water
Analysis Batch: 558726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 558102

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			40.0	37.5		ug/L		94	85 - 118		

Lab Sample ID: 280-155747-2 MS
Matrix: Water
Analysis Batch: 558726

Client Sample ID: 43504-002
Prep Type: Total/NA
Prep Batch: 558102

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	0.10	B	40.0	38.1		ug/L		95	85 - 118		

Lab Sample ID: 280-155747-2 MSD
Matrix: Water
Analysis Batch: 558726

Client Sample ID: 43504-002
Prep Type: Total/NA
Prep Batch: 558102

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	0.10	B	40.0	38.1		ug/L		95	85 - 118	0	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155747-1
SDG: 43504

GC/MS VOA

Analysis Batch: 558917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-155747-1	43504-001	Total/NA	Water	8260C	
280-155747-2	43504-002	Total/NA	Water	8260C	
280-155747-3	43504-003	Total/NA	Water	8260C	
MB 280-558917/6	Method Blank	Total/NA	Water	8260C	
LCS 280-558917/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-558917/4	Lab Control Sample Dup	Total/NA	Water	8260C	

Metals

Prep Batch: 558102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-155747-2	43504-002	Total/NA	Water	3020A	
MB 280-558102/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-558102/2-A	Lab Control Sample	Total/NA	Water	3020A	
280-155747-2 MS	43504-002	Total/NA	Water	3020A	
280-155747-2 MSD	43504-002	Total/NA	Water	3020A	

Analysis Batch: 558726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-155747-2	43504-002	Total/NA	Water	6020A	558102
MB 280-558102/1-A	Method Blank	Total/NA	Water	6020A	558102
LCS 280-558102/2-A	Lab Control Sample	Total/NA	Water	6020A	558102
280-155747-2 MS	43504-002	Total/NA	Water	6020A	558102
280-155747-2 MSD	43504-002	Total/NA	Water	6020A	558102

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155747-1
SDG: 43504

Client Sample ID: 43504-001
Date Collected: 11/15/21 10:30
Date Received: 11/17/21 11:00

Lab Sample ID: 280-155747-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	558917	11/29/21 13:37	TAW	TAL DEN

Client Sample ID: 43504-002
Date Collected: 11/15/21 10:35
Date Received: 11/17/21 11:00

Lab Sample ID: 280-155747-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	558917	11/29/21 14:00	TAW	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	558102	11/21/21 09:55	MAB	TAL DEN
Total/NA	Analysis	6020A		1			558726	11/24/21 03:37	LRD	TAL DEN

Client Sample ID: 43504-003
Date Collected: 11/15/21 09:00
Date Received: 11/17/21 11:00

Lab Sample ID: 280-155747-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	558917	11/29/21 14:24	TAW	TAL DEN

Laboratory References:
TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-155747-1
SDG: 43504

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-30-21
A2LA	ISO/IEC 17025	2907.01	11-30-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-19-21
Arkansas DEQ	State	19-047-0	06-01-21 *
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-22
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	07-01-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	08-31-22
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-22
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	10-01-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21 *
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-22
West Virginia DEP	State	354	11-30-21
Wisconsin	State	999615430	08-31-22
Wyoming (UST)	A2LA	2907.01	11-30-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

280-155747 Chain of Custody

Requires EDD ☒

BROOKHAVEN
NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 43504

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: A.J. Scheff	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol./Units	Cont. Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	xxxx EPA 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	11/15/21	1030	W	RTW-1 Influent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0		1035	W	RTW-1 Effluent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0			W	RTW-1 Effluent	250 ML	P	1	HNO3										x
003	E	G	TB-1	0		0400	W	Trip Blank	40 ML	SC	3	HCL					x					

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print A.J. Scheff 11/15/21	Print	Print
Signature 1700	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Adam Lebicki 11/17/2021	Print	Print
Signature 1100	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

0-6
IR11
CFM.0

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-155747-1
SDG Number: 43504

Login Number: 155747
List Number: 1
Creator: Dubicki, Adam L

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-156455-1
Laboratory Sample Delivery Group: 43558
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
12/21/2021 6:41:23 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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QC Sample Results 14
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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156455-1
SDG: 43558

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-156455-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 280-156455-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 12/6/2021 10:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.4º C.

VOLATILE ORGANIC COMPOUNDS

Samples 43558-001 (280-156455-1), 43558-002 (280-156455-2) and 43558-003 (280-156455-3) were analyzed for volatile organic compounds in accordance with SW 846 Method 8260C. The samples were analyzed on 12/14/2021.

Job ID: 280-156455-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

Analytical Batch 280-5606669:
The continuing calibration verification (CCV) recovered above the upper control limit for numerous analytes. The samples associated with this CCV were either non-detect for the affected analytes or below the RL; therefore, the data have was reported: 43558-001 (280-156455-1), 43558-002 (280-156455-2), 43558-003 (280-156455-3), and (CCV 280-560666/2).

Insufficient sample volume was available to prepare a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD was prepared to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 43558-002 (280-156455-2) was analyzed for metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 12/10/2021 and analyzed on 12/17/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156455-1
SDG: 43558

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SL
5030C	Purge and Trap	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156455-1
SDG: 43558

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-156455-1	43558-001	Water	12/03/21 13:10	12/06/21 10:45
280-156455-2	43558-002	Water	12/03/21 13:15	12/06/21 10:45
280-156455-3	43558-003	Water	12/03/21 13:00	12/06/21 10:45

Client Sample ID: 43558-001

Date Collected: 12/03/21 13:10
Date Received: 12/06/21 10:45

Lab Sample ID: 280-156455-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			12/14/21 23:13	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			12/14/21 23:13	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			12/14/21 23:13	1
Bromoform	0.50	U	0.50	0.092	ug/L			12/14/21 23:13	1
Bromomethane	0.50	U	0.50	0.27	ug/L			12/14/21 23:13	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			12/14/21 23:13	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			12/14/21 23:13	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			12/14/21 23:13	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			12/14/21 23:13	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			12/14/21 23:13	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			12/14/21 23:13	1
Chloroethane	0.50	U	0.50	0.14	ug/L			12/14/21 23:13	1
Chloroform	**0.32**	**J**	0.50	0.11	ug/L			12/14/21 23:13	1
Chloromethane	0.50	U	0.50	0.097	ug/L			12/14/21 23:13	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			12/14/21 23:13	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			12/14/21 23:13	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			12/14/21 23:13	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			12/14/21 23:13	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			12/14/21 23:13	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			12/14/21 23:13	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/14/21 23:13	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			12/14/21 23:13	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			12/14/21 23:13	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			12/14/21 23:13	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			12/14/21 23:13	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			12/14/21 23:13	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/14/21 23:13	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			12/14/21 23:13	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			12/14/21 23:13	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			12/14/21 23:13	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			12/14/21 23:13	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			12/14/21 23:13	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			12/14/21 23:13	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			12/14/21 23:13	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			12/14/21 23:13	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			12/14/21 23:13	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			12/14/21 23:13	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			12/14/21 23:13	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			12/14/21 23:13	1
Naphthalene	0.50	U	0.50	0.085	ug/L			12/14/21 23:13	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			12/14/21 23:13	1
Styrene	0.50	U	0.50	0.056	ug/L			12/14/21 23:13	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			12/14/21 23:13	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			12/14/21 23:13	1
Tetrachloroethene	**2.8**		0.50	0.072	ug/L			12/14/21 23:13	1
Toluene	0.50	U	0.50	0.041	ug/L			12/14/21 23:13	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			12/14/21 23:13	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			12/14/21 23:13	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			12/14/21 23:13	1

Client Sample ID: 43558-001

Date Collected: 12/03/21 13:10
Date Received: 12/06/21 10:45

Lab Sample ID: 280-156455-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			12/14/21 23:13	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			12/14/21 23:13	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			12/14/21 23:13	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			12/14/21 23:13	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			12/14/21 23:13	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			12/14/21 23:13	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/14/21 23:13	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			12/14/21 23:13	1
o-Xylene	0.50	U	0.50	0.095	ug/L			12/14/21 23:13	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			12/14/21 23:13	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			12/14/21 23:13	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			12/14/21 23:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*		*12/14/21 23:13*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*12/14/21 23:13*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*12/14/21 23:13*	*1*

Client Sample ID: 43558-002

Date Collected: 12/03/21 13:15
Date Received: 12/06/21 10:45

Lab Sample ID: 280-156455-2

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			12/14/21 23:36	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			12/14/21 23:36	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			12/14/21 23:36	1
Bromoform	0.50	U	0.50	0.092	ug/L			12/14/21 23:36	1
Bromomethane	0.50	U	0.50	0.27	ug/L			12/14/21 23:36	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			12/14/21 23:36	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			12/14/21 23:36	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			12/14/21 23:36	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			12/14/21 23:36	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			12/14/21 23:36	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			12/14/21 23:36	1
Chloroethane	0.50	U	0.50	0.14	ug/L			12/14/21 23:36	1
Chloroform	0.50	U	0.50	0.11	ug/L			12/14/21 23:36	1
Chloromethane	0.50	U	0.50	0.097	ug/L			12/14/21 23:36	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			12/14/21 23:36	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			12/14/21 23:36	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			12/14/21 23:36	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			12/14/21 23:36	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			12/14/21 23:36	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			12/14/21 23:36	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/14/21 23:36	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			12/14/21 23:36	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			12/14/21 23:36	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			12/14/21 23:36	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			12/14/21 23:36	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			12/14/21 23:36	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156455-1
SDG: 43558

Client Sample ID: 43558-002
Date Collected: 12/03/21 13:15
Date Received: 12/06/21 10:45

Lab Sample ID: 280-156455-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/14/21 23:36	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			12/14/21 23:36	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			12/14/21 23:36	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			12/14/21 23:36	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			12/14/21 23:36	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			12/14/21 23:36	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			12/14/21 23:36	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			12/14/21 23:36	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			12/14/21 23:36	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			12/14/21 23:36	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			12/14/21 23:36	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			12/14/21 23:36	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			12/14/21 23:36	1
Naphthalene	0.50	U	0.50	0.085	ug/L			12/14/21 23:36	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			12/14/21 23:36	1
Styrene	0.50	U	0.50	0.056	ug/L			12/14/21 23:36	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			12/14/21 23:36	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			12/14/21 23:36	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			12/14/21 23:36	1
Toluene	0.50	U	0.50	0.041	ug/L			12/14/21 23:36	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			12/14/21 23:36	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			12/14/21 23:36	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			12/14/21 23:36	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			12/14/21 23:36	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			12/14/21 23:36	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			12/14/21 23:36	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			12/14/21 23:36	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			12/14/21 23:36	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			12/14/21 23:36	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/14/21 23:36	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			12/14/21 23:36	1
o-Xylene	0.50	U	0.50	0.095	ug/L			12/14/21 23:36	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			12/14/21 23:36	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			12/14/21 23:36	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			12/14/21 23:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*		*12/14/21 23:36*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*12/14/21 23:36*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*12/14/21 23:36*	*1*

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	5.0	U	5.0	0.90	ug/L		12/10/21 12:54	12/17/21 23:50	2

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156455-1
SDG: 43558

Client Sample ID: 43558-003
Date Collected: 12/03/21 13:00
Date Received: 12/06/21 10:45

Lab Sample ID: 280-156455-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			12/14/21 23:59	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			12/14/21 23:59	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			12/14/21 23:59	1
Bromoform	0.50	U	0.50	0.092	ug/L			12/14/21 23:59	1
Bromomethane	0.50	U	0.50	0.27	ug/L			12/14/21 23:59	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			12/14/21 23:59	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			12/14/21 23:59	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			12/14/21 23:59	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			12/14/21 23:59	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			12/14/21 23:59	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			12/14/21 23:59	1
Chloroethane	0.50	U	0.50	0.14	ug/L			12/14/21 23:59	1
Chloroform	0.50	U	0.50	0.11	ug/L			12/14/21 23:59	1
Chloromethane	0.50	U	0.50	0.097	ug/L			12/14/21 23:59	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			12/14/21 23:59	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			12/14/21 23:59	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			12/14/21 23:59	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			12/14/21 23:59	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			12/14/21 23:59	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			12/14/21 23:59	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/14/21 23:59	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			12/14/21 23:59	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			12/14/21 23:59	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			12/14/21 23:59	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			12/14/21 23:59	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			12/14/21 23:59	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/14/21 23:59	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			12/14/21 23:59	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			12/14/21 23:59	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			12/14/21 23:59	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			12/14/21 23:59	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			12/14/21 23:59	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			12/14/21 23:59	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			12/14/21 23:59	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			12/14/21 23:59	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			12/14/21 23:59	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			12/14/21 23:59	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			12/14/21 23:59	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			12/14/21 23:59	1
Naphthalene	0.50	U	0.50	0.085	ug/L			12/14/21 23:59	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			12/14/21 23:59	1
Styrene	0.50	U	0.50	0.056	ug/L			12/14/21 23:59	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			12/14/21 23:59	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			12/14/21 23:59	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			12/14/21 23:59	1
Toluene	0.50	U	0.50	0.041	ug/L			12/14/21 23:59	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			12/14/21 23:59	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			12/14/21 23:59	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			12/14/21 23:59	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156455-1
SDG: 43558

Client Sample ID: 43558-003
Date Collected: 12/03/21 13:00
Date Received: 12/06/21 10:45

Lab Sample ID: 280-156455-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			12/14/21 23:59	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			12/14/21 23:59	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			12/14/21 23:59	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			12/14/21 23:59	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			12/14/21 23:59	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			12/14/21 23:59	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/14/21 23:59	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			12/14/21 23:59	1
o-Xylene	0.50	U	0.50	0.095	ug/L			12/14/21 23:59	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			12/14/21 23:59	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			12/14/21 23:59	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			12/14/21 23:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*		*12/14/21 23:59*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*12/14/21 23:59*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*12/14/21 23:59*	*1*

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156455-1
SDG: 43558

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-156455-1	43558-001	106	99	95
280-156455-2	43558-002	106	99	94
280-156455-3	43558-003	107	99	93
LCS 280-560666/4	Lab Control Sample	95	99	102
LCSD 280-560666/5	Lab Control Sample Dup	97	101	101
MB 280-560666/7	Method Blank	103	98	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156455-1
SDG: 43558

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 280-560666/7
Matrix: Water
Analysis Batch: 560666

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			12/14/21 22:50	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			12/14/21 22:50	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			12/14/21 22:50	1
Bromoform	0.50	U	0.50	0.092	ug/L			12/14/21 22:50	1
Bromomethane	0.50	U	0.50	0.27	ug/L			12/14/21 22:50	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			12/14/21 22:50	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			12/14/21 22:50	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			12/14/21 22:50	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			12/14/21 22:50	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			12/14/21 22:50	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			12/14/21 22:50	1
Chloroethane	0.50	U	0.50	0.14	ug/L			12/14/21 22:50	1
Chloroform	0.50	U	0.50	0.11	ug/L			12/14/21 22:50	1
Chloromethane	0.50	U	0.50	0.097	ug/L			12/14/21 22:50	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			12/14/21 22:50	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			12/14/21 22:50	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			12/14/21 22:50	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			12/14/21 22:50	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			12/14/21 22:50	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			12/14/21 22:50	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/14/21 22:50	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			12/14/21 22:50	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			12/14/21 22:50	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			12/14/21 22:50	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			12/14/21 22:50	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			12/14/21 22:50	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/14/21 22:50	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			12/14/21 22:50	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			12/14/21 22:50	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			12/14/21 22:50	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			12/14/21 22:50	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			12/14/21 22:50	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			12/14/21 22:50	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			12/14/21 22:50	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			12/14/21 22:50	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			12/14/21 22:50	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			12/14/21 22:50	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			12/14/21 22:50	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			12/14/21 22:50	1
Naphthalene	0.50	U	0.50	0.085	ug/L			12/14/21 22:50	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			12/14/21 22:50	1
Styrene	0.50	U	0.50	0.056	ug/L			12/14/21 22:50	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			12/14/21 22:50	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			12/14/21 22:50	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			12/14/21 22:50	1
Toluene	0.50	U	0.50	0.041	ug/L			12/14/21 22:50	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			12/14/21 22:50	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			12/14/21 22:50	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-560666/7
Matrix: Water
Analysis Batch: 560666

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			12/14/21 22:50	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			12/14/21 22:50	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			12/14/21 22:50	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			12/14/21 22:50	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			12/14/21 22:50	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			12/14/21 22:50	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			12/14/21 22:50	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/14/21 22:50	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			12/14/21 22:50	1
o-Xylene	0.50	U	0.50	0.095	ug/L			12/14/21 22:50	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			12/14/21 22:50	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			12/14/21 22:50	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			12/14/21 22:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*12/14/21 22:50*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*12/14/21 22:50*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*12/14/21 22:50*	*1*

Lab Sample ID: LCS 280-560666/4
Matrix: Water
Analysis Batch: 560666

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	19.7		ug/L		99	70 - 130
Bromochloromethane	20.0	19.0		ug/L		95	70 - 130
Bromodichloromethane	20.0	20.6		ug/L		103	70 - 130
Bromoform	20.0	22.5		ug/L		112	70 - 130
Bromomethane	10.0	9.60		ug/L		96	70 - 130
n-Butylbenzene	20.0	25.3		ug/L		127	70 - 130
sec-Butylbenzene	20.0	25.6		ug/L		128	70 - 130
tert-Butylbenzene	20.0	25.0		ug/L		125	70 - 130
Carbon tetrachloride	20.0	22.3		ug/L		112	70 - 130
Chlorobenzene	20.0	20.0		ug/L		100	70 - 130
Dibromochloromethane	20.0	22.0		ug/L		110	70 - 130
Chloroethane	10.0	9.40		ug/L		94	70 - 130
Chloroform	20.0	20.9		ug/L		105	70 - 130
Chloromethane	10.0	9.37		ug/L		94	70 - 130
2-Chlorotoluene	20.0	22.7		ug/L		114	70 - 130
4-Chlorotoluene	20.0	23.1		ug/L		115	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	23.9		ug/L		120	70 - 130
Dibromomethane	20.0	21.0		ug/L		105	70 - 130
1,2-Dichlorobenzene	20.0	22.5		ug/L		113	70 - 130
1,3-Dichlorobenzene	20.0	22.1		ug/L		111	70 - 130
1,4-Dichlorobenzene	20.0	21.6		ug/L		108	70 - 130
Dichlorodifluoromethane	10.0	12.1		ug/L		121	70 - 130
1,1-Dichloroethane	20.0	20.4		ug/L		102	70 - 130
1,2-Dichloroethane	20.0	20.6		ug/L		103	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-560666/4
Matrix: Water
Analysis Batch: 560666

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	20.0	21.1		ug/L		106	70 - 130
trans-1,2-Dichloroethene	20.0	19.8		ug/L		99	70 - 130
1,1-Dichloroethene	20.0	20.4		ug/L		102	70 - 130
1,2-Dichloropropane	20.0	20.5		ug/L		103	70 - 130
1,3-Dichloropropane	20.0	21.7		ug/L		109	70 - 130
2,2-Dichloropropane	20.0	22.1		ug/L		110	70 - 130
cis-1,3-Dichloropropene	20.0	22.5		ug/L		113	70 - 130
trans-1,3-Dichloropropene	20.0	22.3		ug/L		112	70 - 130
1,1-Dichloropropene	20.0	21.4		ug/L		107	70 - 130
Ethylbenzene	20.0	22.2		ug/L		111	70 - 130
Hexachlorobutadiene	20.0	23.2		ug/L		116	70 - 130
Isopropylbenzene	20.0	24.9		ug/L		124	70 - 130
4-Isopropyltoluene	20.0	25.2		ug/L		126	70 - 130
Methylene Chloride	20.0	18.9		ug/L		95	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	21.5		ug/L		107	70 - 130
Naphthalene	20.0	22.1		ug/L		111	70 - 130
N-Propylbenzene	20.0	23.6		ug/L		118	70 - 130
Styrene	20.0	23.5		ug/L		118	70 - 130
1,1,1,2-Tetrachloroethane	20.0	21.1		ug/L		106	70 - 130
1,1,2,2-Tetrachloroethane	20.0	22.7		ug/L		113	70 - 130
Tetrachloroethene	20.0	21.5		ug/L		107	70 - 130
Toluene	20.0	20.5		ug/L		102	70 - 130
1,2,3-Trichlorobenzene	20.0	24.0		ug/L		120	70 - 130
1,2,4-Trichlorobenzene	20.0	24.2		ug/L		121	70 - 130
1,1,1-Trichloroethane	20.0	22.4		ug/L		112	70 - 130
1,1,2-Trichloroethane	20.0	21.1		ug/L		105	70 - 130
Trichloroethene	20.0	20.5		ug/L		103	70 - 130
Trichlorofluoromethane	10.0	11.2		ug/L		112	70 - 130
1,2,3-Trichloropropane	20.0	22.4		ug/L		112	70 - 130
1,2,4-Trimethylbenzene	20.0	24.6		ug/L		123	70 - 130
1,3,5-Trimethylbenzene	20.0	24.2		ug/L		121	70 - 130
Vinyl chloride	10.0	9.95		ug/L		99	70 - 130
m-Xylene & p-Xylene	20.0	22.4		ug/L		112	70 - 130
o-Xylene	20.0	23.0		ug/L		115	70 - 130
Xylenes, Total	40.0	45.4		ug/L		114	70 - 130
Bromobenzene	20.0	22.4		ug/L		112	70 - 130
1,2-Dibromoethane	20.0	21.9		ug/L		109	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-560666/5
Matrix: Water
Analysis Batch: 560666

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	18.9		ug/L		95	70 - 130	4	20
Bromochloromethane	20.0	18.0		ug/L		90	70 - 130	5	20
Bromodichloromethane	20.0	19.8		ug/L		99	70 - 130	4	20
Bromoform	20.0	21.4		ug/L		107	70 - 130	5	20
Bromomethane	10.0	8.61		ug/L		86	70 - 130	11	20
n-Butylbenzene	20.0	24.0		ug/L		120	70 - 130	5	20
sec-Butylbenzene	20.0	23.9		ug/L		120	70 - 130	7	20
tert-Butylbenzene	20.0	23.6		ug/L		118	70 - 130	6	20
Carbon tetrachloride	20.0	21.7		ug/L		109	70 - 130	3	20
Chlorobenzene	20.0	19.2		ug/L		96	70 - 130	4	20
Dibromochloromethane	20.0	21.2		ug/L		106	70 - 130	4	20
Chloroethane	10.0	8.95		ug/L		89	70 - 130	5	20
Chloroform	20.0	20.3		ug/L		101	70 - 130	3	20
Chloromethane	10.0	9.05		ug/L		90	70 - 130	3	20
2-Chlorotoluene	20.0	21.1		ug/L		106	70 - 130	7	20
4-Chlorotoluene	20.0	21.7		ug/L		109	70 - 130	6	20
1,2-Dibromo-3-Chloropropane	20.0	22.9		ug/L		114	70 - 130	5	20
Dibromomethane	20.0	20.1		ug/L		100	70 - 130	5	20
1,2-Dichlorobenzene	20.0	21.3		ug/L		106	70 - 130	6	20
1,3-Dichlorobenzene	20.0	20.9		ug/L		105	70 - 130	6	20
1,4-Dichlorobenzene	20.0	20.3		ug/L		102	70 - 130	6	20
Dichlorodifluoromethane	10.0	11.7		ug/L		117	70 - 130	4	20
1,1-Dichloroethane	20.0	19.8		ug/L		99	70 - 130	3	20
1,2-Dichloroethane	20.0	19.6		ug/L		98	70 - 130	5	20
cis-1,2-Dichloroethene	20.0	20.5		ug/L		102	70 - 130	3	20
trans-1,2-Dichloroethene	20.0	19.0		ug/L		95	70 - 130	4	20
1,1-Dichloroethene	20.0	19.6		ug/L		98	70 - 130	4	20
1,2-Dichloropropane	20.0	19.7		ug/L		99	70 - 130	4	20
1,3-Dichloropropane	20.0	20.9		ug/L		104	70 - 130	4	20
2,2-Dichloropropane	20.0	21.4		ug/L		107	70 - 130	3	20
cis-1,3-Dichloropropene	20.0	21.8		ug/L		109	70 - 130	3	20
trans-1,3-Dichloropropene	20.0	21.5		ug/L		107	70 - 130	4	20
1,1-Dichloropropene	20.0	21.2		ug/L		106	70 - 130	1	20
Ethylbenzene	20.0	21.2		ug/L		106	70 - 130	5	20
Hexachlorobutadiene	20.0	22.1		ug/L		111	70 - 130	5	20
Isopropylbenzene	20.0	23.4		ug/L		117	70 - 130	6	20
4-Isopropyltoluene	20.0	23.7		ug/L		118	70 - 130	6	20
Methylene Chloride	20.0	18.5		ug/L		92	70 - 130	2	20
Methyl-t-Butyl Ether (MTBE)	20.0	21.3		ug/L		107	70 - 130	1	20
Naphthalene	20.0	21.1		ug/L		106	70 - 130	5	20
N-Propylbenzene	20.0	22.1		ug/L		111	70 - 130	6	20
Styrene	20.0	22.5		ug/L		113	70 - 130	4	20
1,1,1,2-Tetrachloroethane	20.0	20.5		ug/L		102	70 - 130	3	20
1,1,2,2-Tetrachloroethane	20.0	21.1		ug/L		106	70 - 130	7	20
Tetrachloroethene	20.0	20.5		ug/L		103	70 - 130	4	20
Toluene	20.0	19.6		ug/L		98	70 - 130	4	20
1,2,3-Trichlorobenzene	20.0	22.9		ug/L		115	70 - 130	5	20
1,2,4-Trichlorobenzene	20.0	23.2		ug/L		116	70 - 130	4	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-560666/5
Matrix: Water
Analysis Batch: 560666

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	21.2		ug/L		106	70 - 130	5	20
1,1,2-Trichloroethane			20.0	20.2		ug/L		101	70 - 130	4	20
Trichloroethene			20.0	19.7		ug/L		98	70 - 130	4	20
Trichlorofluoromethane			10.0	11.4		ug/L		114	70 - 130	2	20
1,2,3-Trichloropropane			20.0	20.9		ug/L		105	70 - 130	7	20
1,2,4-Trimethylbenzene			20.0	23.1		ug/L		116	70 - 130	6	20
1,3,5-Trimethylbenzene			20.0	22.7		ug/L		114	70 - 130	6	20
Vinyl chloride			10.0	9.62		ug/L		96	70 - 130	3	20
m-Xylene & p-Xylene			20.0	21.5		ug/L		108	70 - 130	4	20
o-Xylene			20.0	22.1		ug/L		110	70 - 130	4	20
Xylenes, Total			40.0	43.6		ug/L		109	70 - 130	4	20
Bromobenzene			20.0	20.9		ug/L		105	70 - 130	7	20
1,2-Dibromoethane			20.0	21.1		ug/L		105	70 - 130	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-541327/1-A ^2
Matrix: Water
Analysis Batch: 542862

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 541327

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	5.0	U	5.0	0.90	ug/L		12/10/21 12:54	12/17/21 23:44	2

Lab Sample ID: LCS 160-541327/2-A ^2
Matrix: Water
Analysis Batch: 542862

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 541327

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			200	199		ug/L		99	80 - 120		

Lab Sample ID: 280-156455-2 MS
Matrix: Water
Analysis Batch: 542862

Client Sample ID: 43558-002
Prep Type: Total Recoverable
Prep Batch: 541327

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	5.0	U	200	198		ug/L		99	75 - 125		

Lab Sample ID: 280-156455-2 MSD
Matrix: Water
Analysis Batch: 542862

Client Sample ID: 43558-002
Prep Type: Total Recoverable
Prep Batch: 541327

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	5.0	U	200	197		ug/L		98	75 - 125	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156455-1
SDG: 43558

GC/MS VOA

Analysis Batch: 560666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-156455-1	43558-001	Total/NA	Water	8260C	
280-156455-2	43558-002	Total/NA	Water	8260C	
280-156455-3	43558-003	Total/NA	Water	8260C	
MB 280-560666/7	Method Blank	Total/NA	Water	8260C	
LCS 280-560666/4	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-560666/5	Lab Control Sample Dup	Total/NA	Water	8260C	

Metals

Prep Batch: 541327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-156455-2	43558-002	Total Recoverable	Water	3005A	
MB 160-541327/1-A ^2	Method Blank	Total Recoverable	Water	3005A	
LCS 160-541327/2-A ^2	Lab Control Sample	Total Recoverable	Water	3005A	
280-156455-2 MS	43558-002	Total Recoverable	Water	3005A	
280-156455-2 MSD	43558-002	Total Recoverable	Water	3005A	

Analysis Batch: 542862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-156455-2	43558-002	Total Recoverable	Water	6020A	541327
MB 160-541327/1-A ^2	Method Blank	Total Recoverable	Water	6020A	541327
LCS 160-541327/2-A ^2	Lab Control Sample	Total Recoverable	Water	6020A	541327
280-156455-2 MS	43558-002	Total Recoverable	Water	6020A	541327
280-156455-2 MSD	43558-002	Total Recoverable	Water	6020A	541327

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156455-1
SDG: 43558

Client Sample ID: 43558-001
Date Collected: 12/03/21 13:10
Date Received: 12/06/21 10:45

Lab Sample ID: 280-156455-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	560666	12/14/21 23:13	AJP	TAL DEN

Client Sample ID: 43558-002
Date Collected: 12/03/21 13:15
Date Received: 12/06/21 10:45

Lab Sample ID: 280-156455-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	560666	12/14/21 23:36	AJP	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	541327	12/10/21 12:54	CJJ	TAL SL
Total Recoverable	Analysis	6020A		2			542862	12/17/21 23:50	CJJ	TAL SL

Client Sample ID: 43558-003
Date Collected: 12/03/21 13:00
Date Received: 12/06/21 10:45

Lab Sample ID: 280-156455-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	560666	12/14/21 23:59	AJP	TAL DEN

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156455-1
SDG: 43558

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-19-21
Arkansas DEQ	State	19-047-0	06-01-22
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-22
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	07-01-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	08-31-22
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-22
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	10-01-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-22
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-22
West Virginia DEP	State	354	11-30-21 *
Wisconsin	State	999615430	08-31-22
Wyoming (UST)	A2LA	2907.01	10-31-22

Laboratory: Eurofins TestAmerica, St. Louis

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11616	04-01-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

BROOKHAVEN
NATIONAL LABORATORY

P.O. #

Chain of Custody No. 43558

Requires EDD

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23395 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Mehr	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: SPDES TAT for EDD

Type UID	Sec	Cell	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	300X EPA 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	12/3/21	1310	W	RTW-1 Influent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0	↓	1315	W	RTW-1 Effluent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0	↓	↓	W	RTW-1 Effluent	250 ML	P	1	HNO3										x
003	E	G	TB-1	0	↓	1300	W	Trip Blank	40 ML	SC	3	HCL					x					

280-156455 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print: R. Mehr 12/3/21	Print:	Print:
Signature: [signature] 1330	Signature:	Signature:
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print: [signature] 12/6/2021	Print:	Print:
Signature: [signature] 1045	Signature:	Signature:

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

1.5 IR9
CFA1

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Page 1 of 1

BROOKHAVEN
NATIONAL LABORATORY

P.O. #

Chain of Custody No. 43558

Requires EDD

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23395 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: R. Mehr	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name: OU3 B96	Project Manager: V. Racaniello	Field Engineer: R. Lagattolla

Comments: **SPDES TAT for EDD**

Type UID	Sec	Cell	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont.	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	300X EPA 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	12/3/21	1310	W	RTW-1 Influent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0	↓	1315	W	RTW-1 Effluent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0	↓	↓	W	RTW-1 Effluent	250 ML	P	1	HNO3										x
003	E	G	TB-1	0	↓	1300	W	Trip Blank	40 ML	SC	3	HCL					x					

280-156455 Chain of Custody

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print: R. Mehr 12/3/21	Print:	Print:
Signature: [signature] 1330	Signature:	Signature:
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print: [signature] 12/6/2021	Print:	Print:
Signature: [signature] 1045	Signature:	Signature:

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

BNL F 3101F (rev. 6/13)

1.5 IR9
CFA1

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Vania, Ivan H	Carrier Tracking No(s):	COC No: 280-596814.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ivan.Vania@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 280-156455-1
Address: 13715 Rider Trail North,	Due Date Requested: 12/19/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: BNL - OU3 B96	Project #: 16001560			
Site:	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) TAL Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
43558-002 (280-156455-2)	12/3/21	13:15 Eastern		Water			X	1	

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Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Level 1 radioactive	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:		
Relinquished by:	Date/Time: 12/7/21 1310	Company	Received by: FED EX	Date/Time:	Company	
Relinquished by: FED EX	Date/Time:	Company	Received by:	Date/Time: 12-08-21 1010	Company ETA STL	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-156455-1
SDG Number: 43558

Login Number: 156455
List Number: 1
Creator: Dubicki, Adam L

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-156455-1
SDG Number: 43558

Login Number: 156455
List Number: 2
Creator: Johnson, Autumn R

List Source: Eurofins TestAmerica, St. Louis
List Creation: 12/08/21 02:55 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-156782-1
Laboratory Sample Delivery Group: 43588
Client Project/Site: BNL - OU3 B96

For:
Brookhaven National Labs
Building 528
Upton, New York 11973

Attn: Larry Singh

Authorized for release by:
12/27/2021 2:03:46 PM

Ivan Vania, Project Manager II
(314)298-8566
Ivan.Vania@Eurofinset.com

LINKS

Review your project results through TotalAccess

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Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156782-1
SDG: 43588

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-156782-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Brookhaven National Labs

Project: BNL - OU3 B96

Report Number: 280-156782-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 12/14/2021 10:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.2º C.

VOLATILE ORGANIC COMPOUNDS

Samples 43588-001 (280-156782-1), 43588-002 (280-156782-2) and 43588-003 (280-156782-3) were analyzed for volatile organic compounds in accordance with SW 846 Method 8260C. The samples were analyzed on 12/15/2021.

Job ID: 280-156782-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

Analytical Batch 280-260692:
Insufficient sample volume was available to prepare a matrix spike/matrix spike duplicate (MS/MSD). An LCS/LCSD was prepared to demonstrate batch precision.

Methylene Chloride was detected in method blank MB 280-560692/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample 43588-002 (280-156782-2) was analyzed for metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 12/21/2021 and analyzed on 12/22/2021.

For ICPMS Metals, a 2X dilution was performed. This is a standard dilution that is performed by TestAmerica St. Louis on all samples analyzed by method SW-846 6020A. The dilution is performed in order to have the matrix of the samples (i.e. the concentration of acids) match the matrix of the standards used for calibration and instrument quality control purposes. The MDL studies analyzed by this method undergo the same 2X dilution, and all detection limits are based on this. As such, MDL's and RL's are not affected by the dilution.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156782-1
SDG: 43588

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL DEN
3020A	Preparation, Total Metals	SW846	TAL DEN
5030C	Purge and Trap	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156782-1
SDG: 43588

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-156782-1	43588-001	Water	12/13/21 11:05	12/14/21 10:40
280-156782-2	43588-002	Water	12/13/21 11:15	12/14/21 10:40
280-156782-3	43588-003	Water	12/13/21 09:45	12/14/21 10:40

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156782-1
SDG: 43588

Client Sample ID: 43588-001
Date Collected: 12/13/21 11:05
Date Received: 12/14/21 10:40

Lab Sample ID: 280-156782-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			12/15/21 15:05	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			12/15/21 15:05	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			12/15/21 15:05	1
Bromoform	0.50	U	0.50	0.092	ug/L			12/15/21 15:05	1
Bromomethane	0.50	U	0.50	0.27	ug/L			12/15/21 15:05	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			12/15/21 15:05	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			12/15/21 15:05	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			12/15/21 15:05	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			12/15/21 15:05	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			12/15/21 15:05	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			12/15/21 15:05	1
Chloroethane	0.50	U	0.50	0.14	ug/L			12/15/21 15:05	1
Chloroform	**0.45**	**J**	0.50	0.11	ug/L			12/15/21 15:05	1
Chloromethane	0.50	U	0.50	0.097	ug/L			12/15/21 15:05	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			12/15/21 15:05	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			12/15/21 15:05	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			12/15/21 15:05	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			12/15/21 15:05	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			12/15/21 15:05	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			12/15/21 15:05	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/15/21 15:05	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			12/15/21 15:05	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			12/15/21 15:05	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			12/15/21 15:05	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			12/15/21 15:05	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			12/15/21 15:05	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/15/21 15:05	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			12/15/21 15:05	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			12/15/21 15:05	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			12/15/21 15:05	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			12/15/21 15:05	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			12/15/21 15:05	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			12/15/21 15:05	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			12/15/21 15:05	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			12/15/21 15:05	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			12/15/21 15:05	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			12/15/21 15:05	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			12/15/21 15:05	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			12/15/21 15:05	1
Naphthalene	0.50	U	0.50	0.085	ug/L			12/15/21 15:05	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			12/15/21 15:05	1
Styrene	0.50	U	0.50	0.056	ug/L			12/15/21 15:05	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			12/15/21 15:05	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			12/15/21 15:05	1
Tetrachloroethene	**3.1**		0.50	0.072	ug/L			12/15/21 15:05	1
Toluene	0.50	U	0.50	0.041	ug/L			12/15/21 15:05	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			12/15/21 15:05	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			12/15/21 15:05	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			12/15/21 15:05	1

Client Sample ID: 43588-001

Date Collected: 12/13/21 11:05
Date Received: 12/14/21 10:40

Lab Sample ID: 280-156782-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			12/15/21 15:05	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			12/15/21 15:05	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			12/15/21 15:05	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			12/15/21 15:05	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			12/15/21 15:05	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			12/15/21 15:05	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/15/21 15:05	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			12/15/21 15:05	1
o-Xylene	0.50	U	0.50	0.095	ug/L			12/15/21 15:05	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			12/15/21 15:05	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			12/15/21 15:05	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			12/15/21 15:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*70 - 130*		*12/15/21 15:05*	*1*
Toluene-d8 (Surr)	*94*		*70 - 130*		*12/15/21 15:05*	*1*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*12/15/21 15:05*	*1*

Client Sample ID: 43588-002

Date Collected: 12/13/21 11:15
Date Received: 12/14/21 10:40

Lab Sample ID: 280-156782-2

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			12/15/21 15:29	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			12/15/21 15:29	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			12/15/21 15:29	1
Bromoform	0.50	U	0.50	0.092	ug/L			12/15/21 15:29	1
Bromomethane	0.50	U	0.50	0.27	ug/L			12/15/21 15:29	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			12/15/21 15:29	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			12/15/21 15:29	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			12/15/21 15:29	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			12/15/21 15:29	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			12/15/21 15:29	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			12/15/21 15:29	1
Chloroethane	0.50	U	0.50	0.14	ug/L			12/15/21 15:29	1
Chloroform	0.50	U	0.50	0.11	ug/L			12/15/21 15:29	1
Chloromethane	0.50	U	0.50	0.097	ug/L			12/15/21 15:29	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			12/15/21 15:29	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			12/15/21 15:29	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			12/15/21 15:29	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			12/15/21 15:29	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			12/15/21 15:29	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			12/15/21 15:29	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/15/21 15:29	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			12/15/21 15:29	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			12/15/21 15:29	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			12/15/21 15:29	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			12/15/21 15:29	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			12/15/21 15:29	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156782-1
SDG: 43588

Client Sample ID: 43588-002
Date Collected: 12/13/21 11:15
Date Received: 12/14/21 10:40

Lab Sample ID: 280-156782-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/15/21 15:29	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			12/15/21 15:29	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			12/15/21 15:29	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			12/15/21 15:29	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			12/15/21 15:29	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			12/15/21 15:29	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			12/15/21 15:29	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			12/15/21 15:29	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			12/15/21 15:29	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			12/15/21 15:29	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			12/15/21 15:29	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			12/15/21 15:29	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			12/15/21 15:29	1
Naphthalene	0.50	U	0.50	0.085	ug/L			12/15/21 15:29	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			12/15/21 15:29	1
Styrene	0.50	U	0.50	0.056	ug/L			12/15/21 15:29	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			12/15/21 15:29	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			12/15/21 15:29	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			12/15/21 15:29	1
Toluene	0.50	U	0.50	0.041	ug/L			12/15/21 15:29	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			12/15/21 15:29	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			12/15/21 15:29	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			12/15/21 15:29	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			12/15/21 15:29	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			12/15/21 15:29	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			12/15/21 15:29	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			12/15/21 15:29	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			12/15/21 15:29	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			12/15/21 15:29	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/15/21 15:29	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			12/15/21 15:29	1
o-Xylene	0.50	U	0.50	0.095	ug/L			12/15/21 15:29	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			12/15/21 15:29	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			12/15/21 15:29	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			12/15/21 15:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*70 - 130*		*12/15/21 15:29*	*1*
Toluene-d8 (Surr)	*92*		*70 - 130*		*12/15/21 15:29*	*1*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*12/15/21 15:29*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	0.20	U	0.20	0.089	ug/L		12/21/21 15:02	12/22/21 19:31	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156782-1
SDG: 43588

Client Sample ID: 43588-003
Date Collected: 12/13/21 09:45
Date Received: 12/14/21 10:40

Lab Sample ID: 280-156782-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			12/15/21 15:52	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			12/15/21 15:52	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			12/15/21 15:52	1
Bromoform	0.50	U	0.50	0.092	ug/L			12/15/21 15:52	1
Bromomethane	0.50	U	0.50	0.27	ug/L			12/15/21 15:52	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			12/15/21 15:52	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			12/15/21 15:52	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			12/15/21 15:52	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			12/15/21 15:52	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			12/15/21 15:52	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			12/15/21 15:52	1
Chloroethane	0.50	U	0.50	0.14	ug/L			12/15/21 15:52	1
Chloroform	0.50	U	0.50	0.11	ug/L			12/15/21 15:52	1
Chloromethane	0.50	U	0.50	0.097	ug/L			12/15/21 15:52	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			12/15/21 15:52	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			12/15/21 15:52	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			12/15/21 15:52	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			12/15/21 15:52	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			12/15/21 15:52	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			12/15/21 15:52	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/15/21 15:52	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			12/15/21 15:52	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			12/15/21 15:52	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			12/15/21 15:52	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			12/15/21 15:52	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			12/15/21 15:52	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/15/21 15:52	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			12/15/21 15:52	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			12/15/21 15:52	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			12/15/21 15:52	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			12/15/21 15:52	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			12/15/21 15:52	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			12/15/21 15:52	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			12/15/21 15:52	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			12/15/21 15:52	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			12/15/21 15:52	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			12/15/21 15:52	1
Methylene Chloride	0.50	U	0.50	0.098	ug/L			12/15/21 15:52	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			12/15/21 15:52	1
Naphthalene	0.50	U	0.50	0.085	ug/L			12/15/21 15:52	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			12/15/21 15:52	1
Styrene	0.50	U	0.50	0.056	ug/L			12/15/21 15:52	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			12/15/21 15:52	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			12/15/21 15:52	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			12/15/21 15:52	1
Toluene	0.50	U	0.50	0.041	ug/L			12/15/21 15:52	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			12/15/21 15:52	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			12/15/21 15:52	1
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			12/15/21 15:52	1

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156782-1
SDG: 43588

Client Sample ID: 43588-003
Date Collected: 12/13/21 09:45
Date Received: 12/14/21 10:40

Lab Sample ID: 280-156782-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			12/15/21 15:52	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			12/15/21 15:52	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			12/15/21 15:52	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			12/15/21 15:52	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			12/15/21 15:52	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			12/15/21 15:52	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/15/21 15:52	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			12/15/21 15:52	1
o-Xylene	0.50	U	0.50	0.095	ug/L			12/15/21 15:52	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			12/15/21 15:52	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			12/15/21 15:52	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			12/15/21 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*70 - 130*		*12/15/21 15:52*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*12/15/21 15:52*	*1*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*		*12/15/21 15:52*	*1*

Surrogate Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156782-1
SDG: 43588

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	TOL	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
280-156782-1	43588-001	113	94	89
280-156782-2	43588-002	115	92	90
280-156782-3	43588-003	114	96	91
LCS 280-560692/3	Lab Control Sample	95	98	99
LCSD 280-560692/4	Lab Control Sample Dup	96	99	99
MB 280-560692/6	Method Blank	106	100	91

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 280-560692/6
Matrix: Water
Analysis Batch: 560692

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.50	U	0.50	0.077	ug/L			12/15/21 10:24	1
Bromochloromethane	0.50	U	0.50	0.13	ug/L			12/15/21 10:24	1
Bromodichloromethane	0.50	U	0.50	0.063	ug/L			12/15/21 10:24	1
Bromoform	0.50	U	0.50	0.092	ug/L			12/15/21 10:24	1
Bromomethane	0.50	U	0.50	0.27	ug/L			12/15/21 10:24	1
n-Butylbenzene	0.50	U	0.50	0.053	ug/L			12/15/21 10:24	1
sec-Butylbenzene	0.50	U	0.50	0.10	ug/L			12/15/21 10:24	1
tert-Butylbenzene	0.50	U	0.50	0.091	ug/L			12/15/21 10:24	1
Carbon tetrachloride	0.50	U	0.50	0.078	ug/L			12/15/21 10:24	1
Chlorobenzene	0.50	U	0.50	0.084	ug/L			12/15/21 10:24	1
Dibromochloromethane	0.50	U	0.50	0.10	ug/L			12/15/21 10:24	1
Chloroethane	0.50	U	0.50	0.14	ug/L			12/15/21 10:24	1
Chloroform	0.50	U	0.50	0.11	ug/L			12/15/21 10:24	1
Chloromethane	0.50	U	0.50	0.097	ug/L			12/15/21 10:24	1
2-Chlorotoluene	0.50	U	0.50	0.086	ug/L			12/15/21 10:24	1
4-Chlorotoluene	0.50	U	0.50	0.099	ug/L			12/15/21 10:24	1
1,2-Dibromo-3-Chloropropane	0.50	U	0.50	0.13	ug/L			12/15/21 10:24	1
Dibromomethane	0.50	U	0.50	0.039	ug/L			12/15/21 10:24	1
1,2-Dichlorobenzene	0.50	U	0.50	0.067	ug/L			12/15/21 10:24	1
1,3-Dichlorobenzene	0.50	U	0.50	0.091	ug/L			12/15/21 10:24	1
1,4-Dichlorobenzene	0.50	U	0.50	0.11	ug/L			12/15/21 10:24	1
Dichlorodifluoromethane	0.50	U	0.50	0.17	ug/L			12/15/21 10:24	1
1,1-Dichloroethane	0.50	U	0.50	0.21	ug/L			12/15/21 10:24	1
1,2-Dichloroethane	0.50	U	0.50	0.061	ug/L			12/15/21 10:24	1
cis-1,2-Dichloroethene	0.50	U	0.50	0.11	ug/L			12/15/21 10:24	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.087	ug/L			12/15/21 10:24	1
1,1-Dichloroethene	0.50	U	0.50	0.14	ug/L			12/15/21 10:24	1
1,2-Dichloropropane	0.50	U	0.50	0.070	ug/L			12/15/21 10:24	1
1,3-Dichloropropane	0.50	U	0.50	0.049	ug/L			12/15/21 10:24	1
2,2-Dichloropropane	0.50	U	0.50	0.068	ug/L			12/15/21 10:24	1
cis-1,3-Dichloropropene	0.50	U	0.50	0.059	ug/L			12/15/21 10:24	1
trans-1,3-Dichloropropene	0.50	U	0.50	0.071	ug/L			12/15/21 10:24	1
1,1-Dichloropropene	0.50	U	0.50	0.067	ug/L			12/15/21 10:24	1
Ethylbenzene	0.50	U	0.50	0.091	ug/L			12/15/21 10:24	1
Hexachlorobutadiene	0.50	U	0.50	0.14	ug/L			12/15/21 10:24	1
Isopropylbenzene	0.50	U	0.50	0.055	ug/L			12/15/21 10:24	1
4-Isopropyltoluene	0.50	U	0.50	0.067	ug/L			12/15/21 10:24	1
Methylene Chloride	0.164	J	0.50	0.098	ug/L			12/15/21 10:24	1
Methyl-t-Butyl Ether (MTBE)	0.50	U	0.50	0.039	ug/L			12/15/21 10:24	1
Naphthalene	0.50	U	0.50	0.085	ug/L			12/15/21 10:24	1
N-Propylbenzene	0.50	U	0.50	0.075	ug/L			12/15/21 10:24	1
Styrene	0.50	U	0.50	0.056	ug/L			12/15/21 10:24	1
1,1,1,2-Tetrachloroethane	0.50	U	0.50	0.080	ug/L			12/15/21 10:24	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.10	ug/L			12/15/21 10:24	1
Tetrachloroethene	0.50	U	0.50	0.072	ug/L			12/15/21 10:24	1
Toluene	0.50	U	0.50	0.041	ug/L			12/15/21 10:24	1
1,2,3-Trichlorobenzene	0.50	U	0.50	0.10	ug/L			12/15/21 10:24	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.057	ug/L			12/15/21 10:24	1

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: MB 280-560692/6
Matrix: Water
Analysis Batch: 560692

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	0.50	0.074	ug/L			12/15/21 10:24	1
1,1,2-Trichloroethane	0.50	U	0.50	0.13	ug/L			12/15/21 10:24	1
Trichloroethene	0.50	U	0.50	0.17	ug/L			12/15/21 10:24	1
Trichlorofluoromethane	0.50	U	0.50	0.057	ug/L			12/15/21 10:24	1
1,2,3-Trichloropropane	0.50	U	0.50	0.15	ug/L			12/15/21 10:24	1
1,2,4-Trimethylbenzene	0.50	U	0.50	0.067	ug/L			12/15/21 10:24	1
1,3,5-Trimethylbenzene	0.50	U	0.50	0.074	ug/L			12/15/21 10:24	1
Vinyl chloride	0.50	U	0.50	0.19	ug/L			12/15/21 10:24	1
m-Xylene & p-Xylene	1.0	U	1.0	0.10	ug/L			12/15/21 10:24	1
o-Xylene	0.50	U	0.50	0.095	ug/L			12/15/21 10:24	1
Xylenes, Total	1.5	U	1.5	0.17	ug/L			12/15/21 10:24	1
Bromobenzene	0.50	U	0.50	0.10	ug/L			12/15/21 10:24	1
1,2-Dibromoethane	0.50	U	0.50	0.071	ug/L			12/15/21 10:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*		*12/15/21 10:24*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*12/15/21 10:24*	*1*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*		*12/15/21 10:24*	*1*

Lab Sample ID: LCS 280-560692/3
Matrix: Water
Analysis Batch: 560692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	19.9		ug/L		100	70 - 130
Bromochloromethane	20.0	18.9		ug/L		95	70 - 130
Bromodichloromethane	20.0	21.2		ug/L		106	70 - 130
Bromoform	20.0	23.2		ug/L		116	70 - 130
Bromomethane	10.0	9.57		ug/L		96	70 - 130
n-Butylbenzene	20.0	23.8		ug/L		119	70 - 130
sec-Butylbenzene	20.0	23.9		ug/L		119	70 - 130
tert-Butylbenzene	20.0	23.7		ug/L		119	70 - 130
Carbon tetrachloride	20.0	21.5		ug/L		108	70 - 130
Chlorobenzene	20.0	20.2		ug/L		101	70 - 130
Dibromochloromethane	20.0	22.5		ug/L		112	70 - 130
Chloroethane	10.0	8.54		ug/L		85	70 - 130
Chloroform	20.0	21.3		ug/L		107	70 - 130
Chloromethane	10.0	9.36		ug/L		94	70 - 130
2-Chlorotoluene	20.0	22.1		ug/L		111	70 - 130
4-Chlorotoluene	20.0	22.9		ug/L		115	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	23.6		ug/L		118	70 - 130
Dibromomethane	20.0	21.5		ug/L		107	70 - 130
1,2-Dichlorobenzene	20.0	22.7		ug/L		113	70 - 130
1,3-Dichlorobenzene	20.0	22.1		ug/L		111	70 - 130
1,4-Dichlorobenzene	20.0	21.6		ug/L		108	70 - 130
Dichlorodifluoromethane	10.0	9.10		ug/L		91	70 - 130
1,1-Dichloroethane	20.0	20.9		ug/L		105	70 - 130
1,2-Dichloroethane	20.0	20.9		ug/L		105	70 - 130

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCS 280-560692/3
Matrix: Water
Analysis Batch: 560692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	20.0	21.4		ug/L		107	70 - 130
trans-1,2-Dichloroethene	20.0	19.6		ug/L		98	70 - 130
1,1-Dichloroethene	20.0	18.3		ug/L		92	70 - 130
1,2-Dichloropropane	20.0	21.0		ug/L		105	70 - 130
1,3-Dichloropropane	20.0	21.9		ug/L		109	70 - 130
2,2-Dichloropropane	20.0	19.9		ug/L		100	70 - 130
cis-1,3-Dichloropropene	20.0	21.7		ug/L		109	70 - 130
trans-1,3-Dichloropropene	20.0	22.2		ug/L		111	70 - 130
1,1-Dichloropropene	20.0	20.5		ug/L		103	70 - 130
Ethylbenzene	20.0	22.1		ug/L		110	70 - 130
Hexachlorobutadiene	20.0	21.6		ug/L		108	70 - 130
Isopropylbenzene	20.0	23.2		ug/L		116	70 - 130
4-Isopropyltoluene	20.0	24.1		ug/L		121	70 - 130
Methylene Chloride	20.0	19.1		ug/L		95	70 - 130
Methyl-t-Butyl Ether (MTBE)	20.0	21.6		ug/L		108	70 - 130
Naphthalene	20.0	21.1		ug/L		106	70 - 130
N-Propylbenzene	20.0	22.5		ug/L		112	70 - 130
Styrene	20.0	24.3		ug/L		121	70 - 130
1,1,1,2-Tetrachloroethane	20.0	21.8		ug/L		109	70 - 130
1,1,2,2-Tetrachloroethane	20.0	21.6		ug/L		108	70 - 130
Tetrachloroethene	20.0	20.9		ug/L		104	70 - 130
Toluene	20.0	20.7		ug/L		104	70 - 130
1,2,3-Trichlorobenzene	20.0	23.7		ug/L		119	70 - 130
1,2,4-Trichlorobenzene	20.0	23.0		ug/L		115	70 - 130
1,1,1-Trichloroethane	20.0	21.2		ug/L		106	70 - 130
1,1,2-Trichloroethane	20.0	21.7		ug/L		109	70 - 130
Trichloroethene	20.0	19.7		ug/L		99	70 - 130
Trichlorofluoromethane	10.0	8.46		ug/L		85	70 - 130
1,2,3-Trichloropropane	20.0	21.8		ug/L		109	70 - 130
1,2,4-Trimethylbenzene	20.0	24.3		ug/L		122	70 - 130
1,3,5-Trimethylbenzene	20.0	23.5		ug/L		118	70 - 130
Vinyl chloride	10.0	8.26		ug/L		83	70 - 130
m-Xylene & p-Xylene	20.0	22.6		ug/L		113	70 - 130
o-Xylene	20.0	23.1		ug/L		115	70 - 130
Xylenes, Total	40.0	45.7		ug/L		114	70 - 130
Bromobenzene	20.0	22.0		ug/L		110	70 - 130
1,2-Dibromoethane	20.0	22.0		ug/L		110	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-560692/4
Matrix: Water
Analysis Batch: 560692

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			20.0	19.8		ug/L		99	70 - 130	1	20
Bromochloromethane			20.0	19.1		ug/L		96	70 - 130	1	20
Bromodichloromethane			20.0	21.1		ug/L		105	70 - 130	1	20
Bromoform			20.0	22.4		ug/L		112	70 - 130	4	20
Bromomethane			10.0	10.6		ug/L		106	70 - 130	10	20
n-Butylbenzene			20.0	24.0		ug/L		120	70 - 130	1	20
sec-Butylbenzene			20.0	24.3		ug/L		122	70 - 130	2	20
tert-Butylbenzene			20.0	24.3		ug/L		122	70 - 130	2	20
Carbon tetrachloride			20.0	22.2		ug/L		111	70 - 130	3	20
Chlorobenzene			20.0	20.0		ug/L		100	70 - 130	1	20
Dibromochloromethane			20.0	22.1		ug/L		110	70 - 130	2	20
Chloroethane			10.0	9.20		ug/L		92	70 - 130	8	20
Chloroform			20.0	21.2		ug/L		106	70 - 130	1	20
Chloromethane			10.0	9.54		ug/L		95	70 - 130	2	20
2-Chlorotoluene			20.0	22.5		ug/L		113	70 - 130	2	20
4-Chlorotoluene			20.0	22.9		ug/L		115	70 - 130	0	20
1,2-Dibromo-3-Chloropropane			20.0	22.5		ug/L		113	70 - 130	4	20
Dibromomethane			20.0	21.0		ug/L		105	70 - 130	2	20
1,2-Dichlorobenzene			20.0	22.4		ug/L		112	70 - 130	1	20
1,3-Dichlorobenzene			20.0	22.1		ug/L		110	70 - 130	0	20
1,4-Dichlorobenzene			20.0	21.6		ug/L		108	70 - 130	0	20
Dichlorodifluoromethane			10.0	10.7		ug/L		107	70 - 130	16	20
1,1-Dichloroethane			20.0	20.6		ug/L		103	70 - 130	1	20
1,2-Dichloroethane			20.0	20.7		ug/L		104	70 - 130	1	20
cis-1,2-Dichloroethene			20.0	21.3		ug/L		107	70 - 130	0	20
trans-1,2-Dichloroethene			20.0	19.2		ug/L		96	70 - 130	2	20
1,1-Dichloroethene			20.0	19.0		ug/L		95	70 - 130	4	20
1,2-Dichloropropane			20.0	20.7		ug/L		103	70 - 130	2	20
1,3-Dichloropropane			20.0	21.5		ug/L		107	70 - 130	2	20
2,2-Dichloropropane			20.0	20.5		ug/L		102	70 - 130	3	20
cis-1,3-Dichloropropene			20.0	21.9		ug/L		109	70 - 130	1	20
trans-1,3-Dichloropropene			20.0	22.2		ug/L		111	70 - 130	0	20
1,1-Dichloropropene			20.0	21.3		ug/L		107	70 - 130	4	20
Ethylbenzene			20.0	22.0		ug/L		110	70 - 130	0	20
Hexachlorobutadiene			20.0	22.1		ug/L		110	70 - 130	2	20
Isopropylbenzene			20.0	23.8		ug/L		119	70 - 130	3	20
4-Isopropyltoluene			20.0	24.4		ug/L		122	70 - 130	1	20
Methylene Chloride			20.0	19.0		ug/L		95	70 - 130	1	20
Methyl-t-Butyl Ether (MTBE)			20.0	21.1		ug/L		106	70 - 130	2	20
Naphthalene			20.0	20.9		ug/L		105	70 - 130	1	20
N-Propylbenzene			20.0	22.8		ug/L		114	70 - 130	1	20
Styrene			20.0	23.7		ug/L		119	70 - 130	2	20
1,1,1,2-Tetrachloroethane			20.0	21.5		ug/L		107	70 - 130	1	20
1,1,2,2-Tetrachloroethane			20.0	20.6		ug/L		103	70 - 130	4	20
Tetrachloroethene			20.0	21.3		ug/L		106	70 - 130	2	20
Toluene			20.0	20.5		ug/L		103	70 - 130	1	20
1,2,3-Trichlorobenzene			20.0	23.3		ug/L		117	70 - 130	2	20
1,2,4-Trichlorobenzene			20.0	23.5		ug/L		118	70 - 130	2	20

Method: 8260C - Volatile Organic Compounds (GCMS) (Continued)

Lab Sample ID: LCSD 280-560692/4
Matrix: Water
Analysis Batch: 560692

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	22.2		ug/L		111	70 - 130	4	20
1,1,2-Trichloroethane			20.0	21.3		ug/L		107	70 - 130	2	20
Trichloroethene			20.0	20.5		ug/L		103	70 - 130	4	20
Trichlorofluoromethane			10.0	9.98		ug/L		100	70 - 130	17	20
1,2,3-Trichloropropane			20.0	21.1		ug/L		105	70 - 130	3	20
1,2,4-Trimethylbenzene			20.0	24.3		ug/L		122	70 - 130	0	20
1,3,5-Trimethylbenzene			20.0	23.8		ug/L		119	70 - 130	1	20
Vinyl chloride			10.0	9.49		ug/L		95	70 - 130	14	20
m-Xylene & p-Xylene			20.0	22.2		ug/L		111	70 - 130	2	20
o-Xylene			20.0	23.1		ug/L		115	70 - 130	0	20
Xylenes, Total			40.0	45.3		ug/L		113	70 - 130	1	20
Bromobenzene			20.0	22.3		ug/L		112	70 - 130	1	20
1,2-Dibromoethane			20.0	21.3		ug/L		106	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-561168/1-A
Matrix: Water
Analysis Batch: 561616

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 561168

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thallium	0.20	U	0.20	0.089	ug/L		12/21/21 15:02	12/22/21 18:26	1

Lab Sample ID: LCS 280-561168/2-A
Matrix: Water
Analysis Batch: 561616

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 561168

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium			40.0	39.6		ug/L		99	85 - 118		

Lab Sample ID: 280-156983-A-2-B MS
Matrix: Water
Analysis Batch: 561616

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 561168

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Thallium	0.20	U	40.0	37.7		ug/L		94	85 - 118		

Lab Sample ID: 280-156983-A-2-C MSD
Matrix: Water
Analysis Batch: 561616

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 561168

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	0.20	U	40.0	37.1		ug/L		93	85 - 118	1	20

QC Association Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156782-1
SDG: 43588

GC/MS VOA

Analysis Batch: 560692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-156782-1	43588-001	Total/NA	Water	8260C	
280-156782-2	43588-002	Total/NA	Water	8260C	
280-156782-3	43588-003	Total/NA	Water	8260C	
MB 280-560692/6	Method Blank	Total/NA	Water	8260C	
LCS 280-560692/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 280-560692/4	Lab Control Sample Dup	Total/NA	Water	8260C	

Metals

Prep Batch: 561168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-156782-2	43588-002	Total/NA	Water	3020A	
MB 280-561168/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-561168/2-A	Lab Control Sample	Total/NA	Water	3020A	
280-156983-A-2-B MS	Matrix Spike	Total/NA	Water	3020A	
280-156983-A-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	3020A	

Analysis Batch: 561616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-156782-2	43588-002	Total/NA	Water	6020A	561168
MB 280-561168/1-A	Method Blank	Total/NA	Water	6020A	561168
LCS 280-561168/2-A	Lab Control Sample	Total/NA	Water	6020A	561168
280-156983-A-2-B MS	Matrix Spike	Total/NA	Water	6020A	561168
280-156983-A-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	561168

Lab Chronicle

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156782-1
SDG: 43588

Client Sample ID: 43588-001
Date Collected: 12/13/21 11:05
Date Received: 12/14/21 10:40

Lab Sample ID: 280-156782-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	560692	12/15/21 15:05	TAW	TAL DEN

Client Sample ID: 43588-002
Date Collected: 12/13/21 11:15
Date Received: 12/14/21 10:40

Lab Sample ID: 280-156782-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	560692	12/15/21 15:29	TAW	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	561168	12/21/21 15:02	CEH	TAL DEN
Total/NA	Analysis	6020A		1			561616	12/22/21 19:31	LMT	TAL DEN

Client Sample ID: 43588-003
Date Collected: 12/13/21 09:45
Date Received: 12/14/21 10:40

Lab Sample ID: 280-156782-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	560692	12/15/21 15:52	TAW	TAL DEN

Laboratory References:
TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Brookhaven National Labs
Project/Site: BNL - OU3 B96

Job ID: 280-156782-1
SDG: 43588

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-20-22
Arkansas DEQ	State	19-047-0	06-01-22
California	State	2513	01-08-22
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-22
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-21
Nevada	State	CO000262020-1	07-31-22
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	07-01-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-21
North Dakota	State	R-034	01-08-22
Oklahoma	State	2018-006	08-31-22
Oregon	NELAP	4025-011	01-08-22
Pennsylvania	NELAP	013	07-31-22
South Carolina	State	72002001	01-08-22
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	10-01-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-22
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-22
West Virginia DEP	State	354	11-30-21 *
Wisconsin	State	999615430	08-31-22
Wyoming (UST)	A2LA	2907.01	10-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Page 1 of 1

BROOKHAVEN
NATIONAL LABORATORY

P.O.# _____

Chain of Custody No. 43588

Requires EDD ☒

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: Test America
Life: No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: 4955 Yarrow Street
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: Arvada St: CO Zip: 80002
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: Ivan Vania
1 E. Kramer	Sampler: AJ. Scheff	Phone: 314-298-8566
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type UiD	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont. Vol/Units	Cont. Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	~~5000~~ EPA 8260 Low Level	624	Nuclide-specific Alpha	PCBs	Metals	Thallium
001	E	G	095-151	0	12/13/21	1105	W	RTW-1 Influent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0		1115	W	RTW-1 Effluent	40 ML	SC	3	HCL					x					
002	E	G	095-152	0			W	RTW-1 Effluent	250 ML	P	1	HNO3										x
003	E	G	TB-1	0		0945	W	Trip Blank	40 ML	SC	3	HCL					x					

80-156782 Chain of Custody

12/13/21

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print AJ Scheff 12/13/21	Print	Print
Signature 1300	Signature	Signature
1 Received By/Date/Time	**2 Received By/Date/Time**	**3 Received By/Date/Time**
Print Adam Whick 12/14/2021	Print	Print
Signature 1040	Signature	Signature

Contractor Lab Sample Disposal:
☐ Return To Client ☒ Disposal by Lab
☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
☐ Rush (1 Day) ☒ 14 Days ☐ 30 Days
☐ 7 Days ☐ Other ( )

2.3 IPA
CF 0.1

BNL F 3101F (rev. 6/13)

Distribution WHITE (1) - Stays with Sample YELLOW (2) - Returned to Client with Report PINK (3) - Lab or Other GOLDENROD (4) - Field Copy - (Sampler)

Login Sample Receipt Checklist

Client: Brookhaven National Labs

Job Number: 280-156782-1
SDG Number: 43588

Login Number: 156782
List Number: 1
Creator: Dubicki, Adam L

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

GEL Laboratories LLC
a member of The GEL Group INC

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gel.com

February 08, 2019

Mr. Robert F. Howe
Brookhaven National Laboratory
Building 462
Upton, New York 11973-5000

Re: Project - OU3 B96
Chain of Custody - 40697
Project Manager -V. RACANIELLO
Account # - 22486
Release # -469833

SDG: 40697

Dear Mr. Howe:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on January 25, 2019. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4453.

Sincerely,

Kaitlyn Stone for
Edith Kent
Project Manager

Purchase Order: 310464
Chain of Custody: 40697
Enclosures

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Case Narrative

Case Narrative
for
Brookhaven National Laboratory (310464)
SDG: 40697
Work Order: 469833

February 08, 2019

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample Receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on January 25, 2019 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. The client e-mailed the lab that the correct collection date for the samples was 01/24/19, not 01/23/19. Please refer to the attached e-mail for details.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
469833001	40697-001
469833002	40697-002
469833003	40697-003

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: GC/MS Volatile.

Kaitlyn Stone for
Edith Kent
Project Manager

Chain of Custody

469833

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

P.O. # _____

Chain of Custody No. 40697

Requires EDD Y

SAMPLING CHAIN OF CUSTODY

Analysis Requested By	Sampling Contractor	Analytical Laboratory
Name: E. Kramer	Name: EPD Field Sampling Team	Name: ~~Test America~~ GEL
Life No: 20867 Ext. 8826	Contact: R. Lagattolla	Address: ~~13745 Rider Trail N.~~
Acct. No: 22486/23396 Dept: ES	Phone: 631 344 7129	City: ~~Earth City~~ St: ~~MO~~ Zip: ~~63045~~
Email Reports To:	Email/Fax: rlagattolla@bnl.gov	Contact: ~~Ivan Venia~~ EDie Kerr
1 E. Kramer	Sampler:	Phone: ~~314-298-8566~~
2 B. Howe		Email/Fax:
Project Name:	Project Manager:	Field Engineer:
OU3 B96	V. Racaniello	R. Lagattolla

Comments: SPDES TAT for EDD

Type			Sample Information					Additional Sample Information					Analysis Requested											
UID	Smp	Coll	Site ID/Bldg/Life #	Depth/RWP	Date	Time	Matrix	Name/Description	Cont Vol./Units	Cont Type	# of Cont	Preservative	Alpha/Beta	Tritium	Gamma	Strontium	524.2	624	Nuclide-specific Alpha	PCBs	Metals			
001	E	G	095-151	0	1/23/19	0945	W	RTW-1 Influent	40 ML	SC	3	HCL					X							
002	E	G	095-152	0	↓	0948	W	RTW-1 Effluent	40 ML	SC	3	HCL					X							
003	E	G	TB-1	0		0900	W	Trip Blank	40 ML	SC	3	HCL					X							

1 Relinquished By/Date/Time	2 Relinquished By/Date/Time	3 Relinquished By/Date/Time
Print Tim Mc 1/24/19	Print	Print
Signature 1200	Signature	Signature
1 Received By/Date/Time	2 Received By/Date/Time	3 Received By/Date/Time
Print L. Matthews 1-25-19	Print	Print
Signature 900	Signature	Signature

Contractor Lab Sample Disposal:
- ☐ Return To Client
- ☒ Disposal by Lab
- ☐ Archive For _____ Months

Data Package: ☐ Full ☒ Summary

Turn-Around Time Required:
- ☐ Rush (1 Day)
- ☒ 14 Days
- ☐ 30 Days
- ☐ 7 Days
- ☐ Other ( )

GEL Laboratories LLC EK

SAMPLE RECEIPT & REVIEW FORM

Client: BRKL	SDG/AR/COC/Work Order: 469833
Received By: LM	Date Received: 1-25-19
Carrier and Tracking Number	Circle Applicable: (FedEx Express) FedEx Ground UPS Field Services Courier Other 6583 4854 1156 23°C 6583 4854 1145 1°C

Suspected Hazard Information	Yes	No	
			*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		/	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		/	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		/	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 (CPM) / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		/	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		/	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	/			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	/			Preservation Method: (Wet Ice) Ice Packs Dry ice (None) Other: *all temperatures are recorded in Celsius TEMP: See Above
4	Daily check performed and passed on IR temperature gun?	/			Temperature Device Serial #: IR4-17 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	/			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	/			If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA/__(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes/__ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes/__ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	/			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	/			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	/			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	/			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided?			/	
13	COC form is properly signed in relinquished/received sections?	/			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials EW Date 1/28/19 Page 1 of 1

GL-CHL-SR-001 Rev 6

Subject: COC # 40697
From: "Milligan, James" <milligan@bnl.gov>
Date: 1/24/2019, 2:35 PM
To: "Edie Kent (emk@gel.com)" <emk@gel.com>

Edie, Please be advised COC#40697 has a sample date of 1/24/2019 not 1/23/2019. The samples just shipped today. Thank you. Jim

Jim Milligan, CES, P.G.
Certified Environmental Sampler
Brookhaven National Laboratory
Environmental Protection Division (EPD)
Field Sampling Team
Building 528
Upton, NY 11973
(631) 344-7460 office
(516) 805-3177 cell
milligan@bnl.gov

Work Order Containers

Sample ID: 469833001
Client Sample ID: 40697−001
Description: 095−151 Water

Label: 469833001.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

25−JAN−19 13:15:19	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler
01−FEB−19 10:37:22	Patrick Yib	Transfered custody to batch 1845229
01−FEB−19 10:37:22	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
03−FEB−19 00:03:37	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 469833001.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

25−JAN−19 13:15:19	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 469833001.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

25−JAN−19 13:15:19	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler

Sample ID: 469833002
Client Sample ID: 40697−002
Description: 095−152 Water

Label: 469833002.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

25−JAN−19 13:15:19	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler
01−FEB−19 10:37:22	Patrick Yib	Transfered custody to batch 1845229
01−FEB−19 10:37:22	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
03−FEB−19 00:03:37	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Label: 469833002.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

25−JAN−19 13:15:19	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 469833002.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

25−JAN−19 13:15:19	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler

Sample ID: 469833003
Client Sample ID: 40697−003
Description: TB−1 Water

Label: 469833003.01 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

25−JAN−19 13:15:19	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler
01−FEB−19 10:37:22	Patrick Yib	Transfered custody to batch 1845229
01−FEB−19 10:37:22	Patrick Yib	Changed sample location from Volatiles Cooler to VOA/MS Lab
03−FEB−19 00:03:37	WEBDB	Changed sample location from VOA/MS Lab to Consumed By Analysis

Work Order Containers

Sample ID: **469833003**
Client Sample ID: **40697−003**
Description: **TB−1 Water**

Label: 469833003.02 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

25−JAN−19 13:15:19	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler

Label: 469833003.03 **Type: Glass 40 ml vial** **Preservative: Hydrochloric pH<2**

25−JAN−19 13:15:19	Larrnisha Matthews	Changed sample location from Barcode Generated to Volatiles Cooler

Data Review Qualifier Definitions

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 08−FEB−19

Project Specific Qualifier Definitions for GEL Client Code: BRKL

Qualifier	Qualifier Definition	Department	Fraction
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.		
J	Value is estimated		
P	Organics−−The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.	Organics	
C	Analyte has been confirmed by GC/MS analysis	Organics	Pesticide
B	The target analyte was detected in the associated blank.	Organics	
E	Concentration of the target analyte exceeds the instrument calibration range	Organics	
A	The TIC is a suspected aldol−condensation product	Organics	Semi−Volatile
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
N	Metals−−The Matrix spike sample recovery is not within specified control limits	Inorganics	
*	A quality control analyte recovery is outside of specified acceptance criteria		
N	Organics−−Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor	Organics	Semi−Volatile
H	Analytical holding time was exceeded		
**	Analyte is a surrogate compound	Organics	
<	Result is less than value reported		
>	Result is greater than value reported		
UI	Gamma Spectroscopy−−Uncertain identification	Radiological	
BD	Results are either below the MDC or tracer recovery is low	Radiological	
h	Preparation or preservation holding time was exceeded		
R	Sample results are rejected		
Z	Paint Filter Test−−Particulates passed through the filter, however no free liquids were observed.	General Chemistry	General Chem
d	5−day BOD−−The 2:1 depletion requirement was not met for this sample	General Chemistry	
B	Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL	Inorganics	Metals
^	RPD of sample and duplicate evaluated using +/−RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.		
D	Results are reported from a diluted aliquot of the sample	Organics	
N/A	RPD or %Recovery limits do not apply.		
ND	Analyte concentration is not detected above the detection limit		
E	%difference of sample and SD is >10%. Sample concentration must meet flagging criteria	Inorganics	Metals
M	M if above MDC and less than LLD	Radiological	
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
FA	Failed analysis.	Radiological	Bioassay
E	General Chemistry−−Concentration of the target analyte exceeds the instrument calibration range	General Chemistry	General Chem
JNX	Non Calibrated Compound	Organics	Volatile
UJ	Compound cannot be extracted	Organics	Semi−Volatile

Project Specific Qualifier Definitions for GEL Client Code: BRKL

Qualifier	Qualifier Definition	Department	Fraction
UJ	Gamma Spectroscopy−−Uncertain identification	Radiological	Rad
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.		
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.	Radiological	
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.	Radiological	
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.	Radiological	
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies	Inorganics	Metals
N1	See case narrative		
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.	Inorganics	
Y	QC Samples were not spiked with this compound	Organics	
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.	General Chemistry	General Chem
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.	Radiological	Rad
**	Analyte is a Tracer compound	Radiological	
B	The target analyte was detected in the associated blank.	General Chemistry	
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor	Organics	Volatile
e	5−day BOD−−Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes	General Chemistry	General Chem
M	REMP Result > MDC/CL and < RDL	Radiological	

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Laboratory Certifications

List of current GEL Certifications as of 08 February 2019

State	Certification
Alaska	17−018
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA024
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122019−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	9904
Pennsylvania NELAP	68−00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−18−13
Utah NELAP	SC000122018−27
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Volatile Analysis

Case Narrative

GC/MS Volatile
Technical Case Narrative
Brookhaven National Laboratory (BRKL)
SDG #: 40697
Work Order #: 469833

Product: **Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometer Applicable to EPA Method 524.2**
Analytical Method: EPA 524.2
Analytical Procedure: GL-OA-E-022 REV# 14
Analytical Batch: 1845229

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
469833001	40697-001
469833002	40697-002
469833003	40697-003
1204209916	Method Blank (MB)
1204209917	Laboratory Control Sample (LCS)
1204209918	469673001(NonSDG) Post Spike (PS)
1204209919	469673001(NonSDG) Post Spike Duplicate (PSD)
1204214221	Method Blank (MB)
1204214222	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

BRKL007 Brookhaven National Laboratory (310464)

Client SDG: 40697 GEL Work Order: 469833

The Qualifiers in this report are defined as follows:

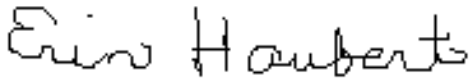
* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Erin Haubert**

Date: 20 FEB 2019 **Title: Data Validator**

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**	**Date Collected:**	**01/24/2019 09:45**	**Matrix:**	**W**
Lab Sample ID:	**469833001**	**Date Received:**	**01/25/2019 09:00**		
Client Sample:	**095-151**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40697-001**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/01/2019 14:31**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/01/2019 14:31**				
Data File:	**020119V8\8H512.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**	**Date Collected:**	**01/24/2019 09:45**	**Matrix:**	**W**
Lab Sample ID:	**469833001**	**Date Received:**	**01/25/2019 09:00**		
Client Sample:	**095-151**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40697-001**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/01/2019 14:31**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/01/2019 14:31**				
Data File:	**020119V8\8H512.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		2.09	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**	**Date Collected:**	**01/24/2019 09:48**	**Matrix:**	**W**
Lab Sample ID:	**469833002**	**Date Received:**	**01/25/2019 09:00**		
Client Sample:	**095-152**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40697-002**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/01/2019 15:03**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/01/2019 15:03**				
Data File:	**020119V8\8H513.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**	**Date Collected:**	**01/24/2019 09:48**	**Matrix:**	**W**
Lab Sample ID:	**469833002**	**Date Received:**	**01/25/2019 09:00**		
Client Sample:	**095-152**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40697-002**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/01/2019 15:03**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/01/2019 15:03**				
Data File:	**020119V8\8H513.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**	**Date Collected:**	**01/24/2019 09:00**	**Matrix:**	**W**
Lab Sample ID:	**469833003**	**Date Received:**	**01/25/2019 09:00**		
Client Sample:	**TB-1**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40697-003**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/01/2019 15:34**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/01/2019 15:34**				
Data File:	**020119V8\8H514.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**	**Date Collected:**	**01/24/2019 09:00**	**Matrix:**	**W**
Lab Sample ID:	**469833003**	**Date Received:**	**01/25/2019 09:00**		
Client Sample:	**TB-1**	**Client:**	**BRKL007**	**Project:**	**BRKL00705**
Client ID:	**40697-003**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/01/2019 15:34**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/01/2019 15:34**				
Data File:	**020119V8\8H514.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Quality Control Summary

Volatile

Surrogate Recovery Report

SDG Number: 40697

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	DCED4 %REC	TOL %REC	TOL %REC	BFB %REC	BFB %REC
1204209917	LCS for batch 1845229	82	95	86			
1204209916	MB for batch 1845229	92	96	85			
1204209918	40699-001PS	89	95	81			
1204209919	40699-001PSD	87	94	94			
1204214222	LCS for batch 1845229	87	94	84			
1204214221	MB for batch 1845229	94	93	83			
469833001	40697-001	98	93	83			
469833002	40697-002	95	96	76			
469833003	40697-003	97	94	79			

Surrogate		Acceptance Limits
DCED4	= 1,2-Dichloroethane-d4	(70%-130%)
TOL	= Toluene-d8	(70%-130%)
BFB	= Bromofluorobenzene	(70%-130%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: **40697**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1845229**
Matrix: **WATER**
Lab Sample ID **1204209917**
Instrument: **VOA8.I**
Analysis Date: **01/31/2019 10:25**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1845229**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	20.0	0.0	18.0	90	70-130
74-87-3	LCS	Chloromethane	20.0	0.0	18.9	95	70-130
75-01-4	LCS	Vinyl chloride	20.0	0.0	18.0	90	70-130
74-83-9	LCS	Bromomethane	20.0	0.0	16.8	84	70-130
75-00-3	LCS	Chloroethane	20.0	0.0	16.5	82	70-130
75-69-4	LCS	Trichlorofluoromethane	20.0	0.0	18.6	93	70-130
75-35-4	LCS	1,1-Dichloroethylene	20.0	0.0	17.7	89	70-130
75-09-2	LCS	Methylene chloride	20.0	0.0	19.4	97	70-130
1634-04-4	LCS	tert-Butyl methyl ether	20.0	0.0	18.3	91	70-130
156-60-5	LCS	trans-1,2-Dichloroethylene	20.0	0.0	18.2	91	70-130
75-34-3	LCS	1,1-Dichloroethane	20.0	0.0	19.0	95	70-130
156-59-2	LCS	cis-1,2-Dichloroethylene	20.0	0.0	20.1	101	70-130
594-20-7	LCS	2,2-Dichloropropane	20.0	0.0	20.5	102	70-130
74-97-5	LCS	Bromochloromethane	20.0	0.0	17.8	89	70-130
67-66-3	LCS	Chloroform	20.0	0.0	17.4	87	70-130
71-55-6	LCS	1,1,1-Trichloroethane	20.0	0.0	17.6	88	70-130
563-58-6	LCS	1,1-Dichloropropene	20.0	0.0	21.5	107	70-130
56-23-5	LCS	Carbon tetrachloride	20.0	0.0	17.5	87	70-130
107-06-2	LCS	1,2-Dichloroethane	20.0	0.0	16.0	80	70-130
71-43-2	LCS	Benzene	20.0	0.0	20.7	104	70-130
79-01-6	LCS	Trichloroethylene	20.0	0.0	18.9	95	70-130
78-87-5	LCS	1,2-Dichloropropane	20.0	0.0	20.9	104	70-130

Quality Control Summary
Spike Recovery Report

SDG Number: **40697**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1845229**
Matrix: **WATER**
Lab Sample ID **1204209917**
Instrument: **VOA8.I**
Analysis Date: **01/31/2019 10:25**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1845229**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
74-95-3	LCS	Dibromomethane	20.0	0.0	18.3	91	70-130
75-27-4	LCS	Bromodichloromethane	20.0	0.0	17.3	87	70-130
10061-01-5	LCS	cis-1,3-Dichloropropylene	20.0	0.0	18.4	92	70-130
108-88-3	LCS	Toluene	20.0	0.0	20.7	103	70-130
10061-02-6	LCS	trans-1,3-Dichloropropylene	20.0	0.0	19.2	96	70-130
79-00-5	LCS	1,1,2-Trichloroethane	20.0	0.0	19.5	97	70-130
142-28-9	LCS	1,3-Dichloropropane	20.0	0.0	19.7	99	70-130
127-18-4	LCS	Tetrachloroethylene	20.0	0.0	20.7	103	70-130
124-48-1	LCS	Dibromochloromethane	20.0	0.0	20.1	100	70-130
106-93-4	LCS	1,2-Dibromoethane	20.0	0.0	19.5	98	70-130
108-90-7	LCS	Chlorobenzene	20.0	0.0	19.4	97	70-130
100-41-4	LCS	Ethylbenzene	20.0	0.0	19.9	100	70-130
95-47-6	LCS	o-Xylene	20.0	0.0	19.4	97	70-130
100-42-5	LCS	Styrene	20.0	0.0	19.9	100	70-130
75-25-2	LCS	Bromoform	20.0	0.0	21.9	109	70-130
98-82-8	LCS	Isopropylbenzene	20.0	0.0	18.9	94	70-130
79-34-5	LCS	1,1,2,2-Tetrachloroethane	20.0	0.0	17.5	88	70-130
96-18-4	LCS	1,2,3-Trichloropropane	20.0	0.0	16.7	84	70-130
108-86-1	LCS	Bromobenzene	20.0	0.0	20.0	100	70-130
103-65-1	LCS	n-Propylbenzene	20.0	0.0	21.3	107	70-130
108-67-8	LCS	1,3,5-Trimethylbenzene	20.0	0.0	18.4	92	70-130
95-49-8	LCS	2-Chlorotoluene	20.0	0.0	20.4	102	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40697
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1845229
Matrix: WATER
Lab Sample ID 1204209917
Instrument: VOA8.I
Analysis Date: 01/31/2019 10:25
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1845229

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
106-43-4	LCS	4-Chlorotoluene	20.0	0.0	19.6	98	70-130
98-06-6	LCS	tert-Butylbenzene	20.0	0.0	17.9	89	70-130
95-63-6	LCS	1,2,4-Trimethylbenzene	20.0	0.0	18.5	92	70-130
135-98-8	LCS	sec-Butylbenzene	20.0	0.0	19.3	97	70-130
99-87-6	LCS	4-Isopropyltoluene	20.0	0.0	19.0	95	70-130
541-73-1	LCS	1,3-Dichlorobenzene	20.0	0.0	19.6	98	70-130
106-46-7	LCS	1,4-Dichlorobenzene	20.0	0.0	18.5	92	70-130
104-51-8	LCS	n-Butylbenzene	20.0	0.0	18.8	94	70-130
96-12-8	LCS	1,2-Dibromo-3-chloropropane	20.0	0.0	17.1	85	70-130
87-68-3	LCS	Hexachlorobutadiene	20.0	0.0	17.8	89	70-130
91-20-3	LCS	Naphthalene	20.0	0.0	17.3	86	70-130
87-61-6	LCS	1,2,3-Trichlorobenzene	20.0	0.0	17.9	89	70-130
120-82-1	LCS	1,2,4-Trichlorobenzene	20.0	0.0	18.1	91	70-130
630-20-6	LCS	1,1,1,2-Tetrachloroethane	20.0	0.0	19.0	95	70-130
95-50-1	LCS	1,2-Dichlorobenzene	20.0	0.0	19.4	97	70-130
179601-23-1	LCS	m,p-Xylenes	40.0	0.0	40.2	101	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: **40697**
Sample Type: **Post Spike**
Client ID: **40699-001PS**
Matrix: **W**
Lab Sample ID **1204209918**
Instrument: **VOA8.I**
Analysis Date: **01/31/2019 20:52**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1845229**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	PS	Dichlorodifluoromethane	20.0	0.00	U	19.4	97	70-130
74-87-3	PS	Chloromethane	20.0	0.00	U	19.1	96	70-130
75-01-4	PS	Vinyl chloride	20.0	0.00	U	17.3	86	70-130
74-83-9	PS	Bromomethane	20.0	0.00	U	19.4	97	70-130
75-00-3	PS	Chloroethane	20.0	0.00	U	17.9	90	70-130
75-69-4	PS	Trichlorofluoromethane	20.0	0.00	U	18.5	93	70-130
75-35-4	PS	1,1-Dichloroethylene	20.0	0.00	U	17.0	85	70-130
75-09-2	PS	Methylene chloride	20.0	0.00	U	19.4	97	70-130
1634-04-4	PS	tert-Butyl methyl ether	20.0	0.00	U	17.0	85	70-130
156-60-5	PS	trans-1,2-Dichloroethylene	20.0	0.00	U	18.1	90	70-130
75-34-3	PS	1,1-Dichloroethane	20.0	0.00	U	19.0	95	70-130
156-59-2	PS	cis-1,2-Dichloroethylene	20.0	0.00	U	19.3	96	70-130
594-20-7	PS	2,2-Dichloropropane	20.0	0.00	U	19.1	96	70-130
74-97-5	PS	Bromochloromethane	20.0	0.00	U	19.6	98	70-130
67-66-3	PS	Chloroform	20.0	0.00	U	17.6	88	70-130
71-55-6	PS	1,1,1-Trichloroethane	20.0	0.00	U	18.0	90	70-130
563-58-6	PS	1,1-Dichloropropene	20.0	0.00	U	20.4	102	70-130
56-23-5	PS	Carbon tetrachloride	20.0	0.00	U	18.2	91	70-130
107-06-2	PS	1,2-Dichloroethane	20.0	0.00	U	16.1	81	70-130
71-43-2	PS	Benzene	20.0	0.00	U	20.5	103	70-130
79-01-6	PS	Trichloroethylene	20.0	0.00	U	18.2	91	70-130
78-87-5	PS	1,2-Dichloropropane	20.0	0.00	U	20.4	102	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40697 **Sample Type:** Post Spike

Client ID: 40699-001PS **Matrix:** W

Lab Sample ID 1204209918

Instrument: VOA8.I **Analysis Date:** 01/31/2019 20:52 **Dilution:** 1

Analyst: PXY1

Purge Vol: 5 mL **Batch ID:** 1845229

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
74-95-3	PS	Dibromomethane	20.0	0.00	U	18.6	93	70-130
75-27-4	PS	Bromodichloromethane	20.0	0.00	U	17.3	87	70-130
10061-01-5	PS	cis-1,3-Dichloropropylene	20.0	0.00	U	16.4	82	70-130
108-88-3	PS	Toluene	20.0	0.00	U	20.6	103	70-130
10061-02-6	PS	trans-1,3-Dichloropropylene	20.0	0.00	U	17.7	88	70-130
79-00-5	PS	1,1,2-Trichloroethane	20.0	0.00	U	20.3	101	70-130
142-28-9	PS	1,3-Dichloropropane	20.0	0.00	U	19.7	99	70-130
127-18-4	PS	Tetrachloroethylene	20.0	0.00	U	20.9	105	70-130
124-48-1	PS	Dibromochloromethane	20.0	0.00	U	19.1	96	70-130
106-93-4	PS	1,2-Dibromoethane	20.0	0.00	U	19.0	95	70-130
108-90-7	PS	Chlorobenzene	20.0	0.00	U	19.0	95	70-130
100-41-4	PS	Ethylbenzene	20.0	0.00	U	19.9	99	70-130
95-47-6	PS	o-Xylene	20.0	0.00	U	19.8	99	70-130
100-42-5	PS	Styrene	20.0	0.00	U	20.1	101	70-130
75-25-2	PS	Bromoform	20.0	0.00	U	18.0	90	70-130
98-82-8	PS	Isopropylbenzene	20.0	0.00	U	17.1	86	70-130
79-34-5	PS	1,1,2,2-Tetrachloroethane	20.0	0.00	U	17.2	86	70-130
96-18-4	PS	1,2,3-Trichloropropane	20.0	0.00	U	16.4	82	70-130
108-86-1	PS	Bromobenzene	20.0	0.00	U	19.4	97	70-130
103-65-1	PS	n-Propylbenzene	20.0	0.00	U	19.8	99	70-130
108-67-8	PS	1,3,5-Trimethylbenzene	20.0	0.00	U	17.1	86	70-130
95-49-8	PS	2-Chlorotoluene	20.0	0.00	U	19.7	98	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: **40697**
Sample Type: **Post Spike**
Client ID: **40699-001PS**
Matrix: **W**
Lab Sample ID **1204209918**
Instrument: **VOA8.I**
Analysis Date: **01/31/2019 20:52**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1845229**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
106-43-4	PS	4-Chlorotoluene	20.0	0.00	U	18.0	90	70-130
98-06-6	PS	tert-Butylbenzene	20.0	0.00	U	17.0	85	70-130
95-63-6	PS	1,2,4-Trimethylbenzene	20.0	0.00	U	17.7	89	70-130
135-98-8	PS	sec-Butylbenzene	20.0	0.00	U	17.9	90	70-130
99-87-6	PS	4-Isopropyltoluene	20.0	0.00	U	17.7	89	70-130
541-73-1	PS	1,3-Dichlorobenzene	20.0	0.00	U	19.1	95	70-130
106-46-7	PS	1,4-Dichlorobenzene	20.0	0.00	U	17.9	89	70-130
104-51-8	PS	n-Butylbenzene	20.0	0.00	U	16.7	84	70-130
96-12-8	PS	1,2-Dibromo-3-chloropropane	20.0	0.00	U	15.9	79	70-130
87-68-3	PS	Hexachlorobutadiene	20.0	0.00	U	16.5	82	70-130
91-20-3	PS	Naphthalene	20.0	0.00	U	16.0	80	70-130
87-61-6	PS	1,2,3-Trichlorobenzene	20.0	0.00	U	16.9	85	70-130
120-82-1	PS	1,2,4-Trichlorobenzene	20.0	0.00	U	16.9	84	70-130
630-20-6	PS	1,1,1,2-Tetrachloroethane	20.0	0.00	U	19.8	99	70-130
95-50-1	PS	1,2-Dichlorobenzene	20.0	0.00	U	18.3	92	70-130
179601-23-1	PS	m,p-Xylenes	40.0	0.00	U	41.3	103	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40697
Sample Type: Post Spike Duplicate
Client ID: 40699-001PSD
Matrix: W
Lab Sample ID 1204209919
Instrument: VOA8.I
Analysis Date: 01/31/2019 21:23
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1845229

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
75-71-8	PSD	Dichlorodifluoromethane	20.0	0.00	U	21.0	105	70-130	8	0-20
74-87-3	PSD	Chloromethane	20.0	0.00	U	21.9	110	70-130	14	0-20
75-01-4	PSD	Vinyl chloride	20.0	0.00	U	20.1	101	70-130	15	0-20
74-83-9	PSD	Bromomethane	20.0	0.00	U	18.7	93	70-130	4	0-20
75-00-3	PSD	Chloroethane	20.0	0.00	U	18.5	93	70-130	3	0-20
75-69-4	PSD	Trichlorofluoromethane	20.0	0.00	U	18.6	93	70-130	0	0-20
75-35-4	PSD	1,1-Dichloroethylene	20.0	0.00	U	17.6	88	70-130	4	0-20
75-09-2	PSD	Methylene chloride	20.0	0.00	U	19.7	98	70-130	1	0-20
1634-04-4	PSD	tert-Butyl methyl ether	20.0	0.00	U	17.3	87	70-130	2	0-20
156-60-5	PSD	trans-1,2-Dichloroethylene	20.0	0.00	U	17.8	89	70-130	2	0-20
75-34-3	PSD	1,1-Dichloroethane	20.0	0.00	U	18.2	91	70-130	4	0-20
156-59-2	PSD	cis-1,2-Dichloroethylene	20.0	0.00	U	19.3	96	70-130	0	0-20
594-20-7	PSD	2,2-Dichloropropane	20.0	0.00	U	18.9	94	70-130	1	0-20
74-97-5	PSD	Bromochloromethane	20.0	0.00	U	18.2	91	70-130	8	0-20
67-66-3	PSD	Chloroform	20.0	0.00	U	17.6	88	70-130	0	0-20
71-55-6	PSD	1,1,1-Trichloroethane	20.0	0.00	U	17.8	89	70-130	1	0-20
563-58-6	PSD	1,1-Dichloropropene	20.0	0.00	U	20.3	102	70-130	0	0-20
56-23-5	PSD	Carbon tetrachloride	20.0	0.00	U	18.2	91	70-130	0	0-20
107-06-2	PSD	1,2-Dichloroethane	20.0	0.00	U	15.9	80	70-130	1	0-20
71-43-2	PSD	Benzene	20.0	0.00	U	21.0	105	70-130	2	0-20
79-01-6	PSD	Trichloroethylene	20.0	0.00	U	18.4	92	70-130	1	0-20
78-87-5	PSD	1,2-Dichloropropane	20.0	0.00	U	20.9	104	70-130	2	0-20

Quality Control Summary
Spike Recovery Report

SDG Number: 40697
Sample Type: Post Spike Duplicate
Client ID: 40699-001PSD
Matrix: W
Lab Sample ID 1204209919
Instrument: VOA8.I
Analysis Date: 01/31/2019 21:23
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1845229

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
74-95-3	PSD	Dibromomethane	20.0	0.00	U	18.2	91	70-130	2	0-20
75-27-4	PSD	Bromodichloromethane	20.0	0.00	U	17.4	87	70-130	1	0-20
10061-01-5	PSD	cis-1,3-Dichloropropylene	20.0	0.00	U	16.2	81	70-130	1	0-20
108-88-3	PSD	Toluene	20.0	0.00	U	19.8	99	70-130	4	0-20
10061-02-6	PSD	trans-1,3-Dichloropropylene	20.0	0.00	U	17.4	87	70-130	2	0-20
79-00-5	PSD	1,1,2-Trichloroethane	20.0	0.00	U	19.2	96	70-130	5	0-20
142-28-9	PSD	1,3-Dichloropropane	20.0	0.00	U	19.2	96	70-130	2	0-20
127-18-4	PSD	Tetrachloroethylene	20.0	0.00	U	19.8	99	70-130	5	0-20
124-48-1	PSD	Dibromochloromethane	20.0	0.00	U	18.6	93	70-130	2	0-20
106-93-4	PSD	1,2-Dibromoethane	20.0	0.00	U	19.2	96	70-130	1	0-20
108-90-7	PSD	Chlorobenzene	20.0	0.00	U	19.0	95	70-130	0	0-20
100-41-4	PSD	Ethylbenzene	20.0	0.00	U	19.3	96	70-130	3	0-20
95-47-6	PSD	o-Xylene	20.0	0.00	U	19.3	97	70-130	2	0-20
100-42-5	PSD	Styrene	20.0	0.00	U	20.2	101	70-130	0	0-20
75-25-2	PSD	Bromoform	20.0	0.00	U	18.9	95	70-130	5	0-20
98-82-8	PSD	Isopropylbenzene	20.0	0.00	U	18.0	90	70-130	5	0-20
79-34-5	PSD	1,1,2,2-Tetrachloroethane	20.0	0.00	U	17.4	87	70-130	1	0-20
96-18-4	PSD	1,2,3-Trichloropropane	20.0	0.00	U	15.9	79	70-130	3	0-20
108-86-1	PSD	Bromobenzene	20.0	0.00	U	19.8	99	70-130	2	0-20
103-65-1	PSD	n-Propylbenzene	20.0	0.00	U	20.5	102	70-130	4	0-20
108-67-8	PSD	1,3,5-Trimethylbenzene	20.0	0.00	U	18.4	92	70-130	7	0-20
95-49-8	PSD	2-Chlorotoluene	20.0	0.00	U	20.0	100	70-130	2	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 40697
Sample Type: Post Spike Duplicate
Client ID: 40699-001PSD
Matrix: W
Lab Sample ID 1204209919
Instrument: VOA8.I
Analysis Date: 01/31/2019 21:23
Dilution: 1
Analyst: PXY1
Purge Vol: 5 mL
Batch ID: 1845229

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
106-43-4	PSD	4-Chlorotoluene	20.0	0.00	U	18.9	94	70-130	5	0-20
98-06-6	PSD	tert-Butylbenzene	20.0	0.00	U	17.4	87	70-130	2	0-20
95-63-6	PSD	1,2,4-Trimethylbenzene	20.0	0.00	U	18.1	90	70-130	2	0-20
135-98-8	PSD	sec-Butylbenzene	20.0	0.00	U	18.7	93	70-130	4	0-20
99-87-6	PSD	4-Isopropyltoluene	20.0	0.00	U	18.6	93	70-130	5	0-20
541-73-1	PSD	1,3-Dichlorobenzene	20.0	0.00	U	19.6	98	70-130	3	0-20
106-46-7	PSD	1,4-Dichlorobenzene	20.0	0.00	U	17.8	89	70-130	0	0-20
104-51-8	PSD	n-Butylbenzene	20.0	0.00	U	17.4	87	70-130	4	0-20
96-12-8	PSD	1,2-Dibromo-3-chloropropane	20.0	0.00	U	16.0	80	70-130	0	0-20
87-68-3	PSD	Hexachlorobutadiene	20.0	0.00	U	17.0	85	70-130	3	0-20
91-20-3	PSD	Naphthalene	20.0	0.00	U	17.1	86	70-130	7	0-20
87-61-6	PSD	1,2,3-Trichlorobenzene	20.0	0.00	U	17.7	89	70-130	5	0-20
120-82-1	PSD	1,2,4-Trichlorobenzene	20.0	0.00	U	17.8	89	70-130	5	0-20
630-20-6	PSD	1,1,1,2-Tetrachloroethane	20.0	0.00	U	18.6	93	70-130	6	0-20
95-50-1	PSD	1,2-Dichlorobenzene	20.0	0.00	U	19.4	97	70-130	6	0-20
179601-23-1	PSD	m,p-Xylenes	40.0	0.00	U	40.8	102	70-130	1	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: **40697**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1845229**
Matrix: **WATER**
Lab Sample ID **1204214222**
Instrument: **VOA8.I**
Analysis Date: **02/01/2019 09:49**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1845229**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	20.0	0.0	17.7	89	70-130
74-87-3	LCS	Chloromethane	20.0	0.0	19.0	95	70-130
75-01-4	LCS	Vinyl chloride	20.0	0.0	18.1	91	70-130
74-83-9	LCS	Bromomethane	20.0	0.0	18.5	93	70-130
75-00-3	LCS	Chloroethane	20.0	0.0	16.9	84	70-130
75-69-4	LCS	Trichlorofluoromethane	20.0	0.0	18.4	92	70-130
75-35-4	LCS	1,1-Dichloroethylene	20.0	0.0	17.0	85	70-130
75-09-2	LCS	Methylene chloride	20.0	0.0	19.3	96	70-130
1634-04-4	LCS	tert-Butyl methyl ether	20.0	0.0	17.9	89	70-130
156-60-5	LCS	trans-1,2-Dichloroethylene	20.0	0.0	17.8	89	70-130
75-34-3	LCS	1,1-Dichloroethane	20.0	0.0	19.4	97	70-130
156-59-2	LCS	cis-1,2-Dichloroethylene	20.0	0.0	19.7	99	70-130
594-20-7	LCS	2,2-Dichloropropane	20.0	0.0	21.6	108	70-130
74-97-5	LCS	Bromochloromethane	20.0	0.0	19.3	97	70-130
67-66-3	LCS	Chloroform	20.0	0.0	18.0	90	70-130
71-55-6	LCS	1,1,1-Trichloroethane	20.0	0.0	17.8	89	70-130
563-58-6	LCS	1,1-Dichloropropene	20.0	0.0	21.1	106	70-130
56-23-5	LCS	Carbon tetrachloride	20.0	0.0	18.0	90	70-130
107-06-2	LCS	1,2-Dichloroethane	20.0	0.0	16.0	80	70-130
71-43-2	LCS	Benzene	20.0	0.0	20.9	104	70-130
79-01-6	LCS	Trichloroethylene	20.0	0.0	18.4	92	70-130
78-87-5	LCS	1,2-Dichloropropane	20.0	0.0	20.6	103	70-130

Quality Control Summary
Spike Recovery Report

SDG Number: **40697**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1845229**
Matrix: **WATER**
Lab Sample ID **1204214222**
Instrument: **VOA8.I**
Analysis Date: **02/01/2019 09:49**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1845229**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
74-95-3	LCS	Dibromomethane	20.0	0.0	18.4	92	70-130
75-27-4	LCS	Bromodichloromethane	20.0	0.0	17.2	86	70-130
10061-01-5	LCS	cis-1,3-Dichloropropylene	20.0	0.0	17.7	88	70-130
108-88-3	LCS	Toluene	20.0	0.0	20.0	100	70-130
10061-02-6	LCS	trans-1,3-Dichloropropylene	20.0	0.0	18.1	90	70-130
79-00-5	LCS	1,1,2-Trichloroethane	20.0	0.0	19.7	99	70-130
142-28-9	LCS	1,3-Dichloropropane	20.0	0.0	19.5	97	70-130
127-18-4	LCS	Tetrachloroethylene	20.0	0.0	20.4	102	70-130
124-48-1	LCS	Dibromochloromethane	20.0	0.0	20.0	100	70-130
106-93-4	LCS	1,2-Dibromoethane	20.0	0.0	18.8	94	70-130
108-90-7	LCS	Chlorobenzene	20.0	0.0	18.5	92	70-130
100-41-4	LCS	Ethylbenzene	20.0	0.0	19.4	97	70-130
95-47-6	LCS	o-Xylene	20.0	0.0	19.2	96	70-130
100-42-5	LCS	Styrene	20.0	0.0	19.9	100	70-130
75-25-2	LCS	Bromoform	20.0	0.0	21.3	106	70-130
98-82-8	LCS	Isopropylbenzene	20.0	0.0	17.3	86	70-130
79-34-5	LCS	1,1,2,2-Tetrachloroethane	20.0	0.0	17.2	86	70-130
96-18-4	LCS	1,2,3-Trichloropropane	20.0	0.0	16.1	81	70-130
108-86-1	LCS	Bromobenzene	20.0	0.0	19.2	96	70-130
103-65-1	LCS	n-Propylbenzene	20.0	0.0	19.8	99	70-130
108-67-8	LCS	1,3,5-Trimethylbenzene	20.0	0.0	17.1	85	70-130
95-49-8	LCS	2-Chlorotoluene	20.0	0.0	19.0	95	70-130

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: **40697**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1845229**
Matrix: **WATER**
Lab Sample ID **1204214222**
Instrument: **VOA8.I**
Analysis Date: **02/01/2019 09:49**
Dilution: **1**
Analyst: **PXY1**
Purge Vol: **5 mL**
Batch ID: **1845229**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
106-43-4	LCS	4-Chlorotoluene	20.0	0.0	18.1	90	70-130
98-06-6	LCS	tert-Butylbenzene	20.0	0.0	16.8	84	70-130
95-63-6	LCS	1,2,4-Trimethylbenzene	20.0	0.0	17.0	85	70-130
135-98-8	LCS	sec-Butylbenzene	20.0	0.0	17.8	89	70-130
99-87-6	LCS	4-Isopropyltoluene	20.0	0.0	17.7	88	70-130
541-73-1	LCS	1,3-Dichlorobenzene	20.0	0.0	19.0	95	70-130
106-46-7	LCS	1,4-Dichlorobenzene	20.0	0.0	17.5	87	70-130
104-51-8	LCS	n-Butylbenzene	20.0	0.0	17.1	85	70-130
96-12-8	LCS	1,2-Dibromo-3-chloropropane	20.0	0.0	17.7	89	70-130
87-68-3	LCS	Hexachlorobutadiene	20.0	0.0	17.4	87	70-130
91-20-3	LCS	Naphthalene	20.0	0.0	16.1	81	70-130
87-61-6	LCS	1,2,3-Trichlorobenzene	20.0	0.0	16.5	83	70-130
120-82-1	LCS	1,2,4-Trichlorobenzene	20.0	0.0	17.1	86	70-130
630-20-6	LCS	1,1,1,2-Tetrachloroethane	20.0	0.0	18.5	93	70-130
95-50-1	LCS	1,2-Dichlorobenzene	20.0	0.0	18.4	92	70-130
179601-23-1	LCS	m,p-Xylenes	40.0	0.0	40.6	101	70-130

Method Blank Summary

SDG Number:	**40697**	**Client:**	**BRKL007**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1845229**	**Instrument ID:**	**VOA8.I**	**Data File:**	**013119V8\8H405BR.D**
Lab Sample ID:	**1204209916**	**Prep Date:**	**01/31/2019 11:28**	**Analyzed:**	**01/31/19 11:28**
Column:	**DB-624**				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 1845229	1204209917	013119V8\8H403BR.D	01/31/19	1025
02	40699-001PS	1204209918	013119V8\8H423.D	01/31/19	2052
03	40699-001PSD	1204209919	013119V8\8H424.D	01/31/19	2123

Method Blank Summary

SDG Number:	**40697**	**Client:**	**BRKL007**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1845229**	**Instrument ID:**	**VOA8.I**	**Data File:**	**020119V8\8H505BR.D**
Lab Sample ID:	**1204214221**	**Prep Date:**	**02/01/2019 10:52**	**Analyzed:**	**02/01/19 10:52**
Column:	**DB-624**				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
05	LCS for batch 1845229	1204214222	020119V8\8H503BR.D	02/01/19	0949
06	40697-001	469833001	020119V8\8H512.D	02/01/19	1431
07	40697-002	469833002	020119V8\8H513.D	02/01/19	1503
08	40697-003	469833003	020119V8\8H514.D	02/01/19	1534

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 40697

Instrument ID: VOA8.I **Injection Date/Time:** 07-JAN-19 09:32

Column Description: DB-624 **Lab File ID** 010719V8\8E103.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.7
75	30.0 - 60.0% of mass 95	50.2
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	7.8
173	Less than 2.0% of mass 174	0
174	50.0 - 100.0% of mass 95	89.5
175	5.0 -9.0% of mass 174	6.2
176	95.0 - 101.0% of mass 174	95.7
177	5.0 - 9.0% of mass 176	6.6

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
ICALMIX[A]	W8VM190107-02	010719V8\8E105.D	07-JAN-19 10:35
ICALMIX[A]	W8VM190107-03	010719V8\8E106.D	07-JAN-19 11:07
ICALMIX[A]	W8VM190107-04	010719V8\8E107.D	07-JAN-19 11:38
ICALMIX[A]	W8VM190107-05	010719V8\8E108.D	07-JAN-19 12:09
ICALMIX[A]	W8VM190107-06	010719V8\8E109.D	07-JAN-19 12:40
ICALMIX[A]	W8VM190107-07	010719V8\8E110.D	07-JAN-19 13:11
ICALMIX[A]	W8VM190107-01	010719V8\8E112.D	07-JAN-19 14:14

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 40697

Instrument ID: VOA8.I **Injection Date/Time:** 31-JAN-19 09:54

Column Description: DB-624 **Lab File ID** 013119V8\8H401.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	16
75	30.0 - 60.0% of mass 95	49.5
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	8.2
173	Less than 2.0% of mass 174	1.7
174	50.0 - 100.0% of mass 95	79
175	5.0 -9.0% of mass 174	5.1
176	95.0 - 101.0% of mass 174	99.9
177	5.0 - 9.0% of mass 176	5.9

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCVMIX[A]01	W8VM190131-01	013119V8\8H403.D	31-JAN-19 10:25
BLK01LCS	1204209917	013119V8\8H403BR.D	31-JAN-19 10:25
BLK01	1204209916	013119V8\8H405BR.D	31-JAN-19 11:28
40699-001MS	1204209918	013119V8\8H423.D	31-JAN-19 20:52
40699-001MSD	1204209919	013119V8\8H424.D	31-JAN-19 21:23

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 40697

Instrument ID: VOA8.I **Injection Date/Time:** 01-FEB-19 09:18

Column Description: DB-624 **Lab File ID** 020119V8\8H501.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	16.7
75	30.0 - 60.0% of mass 95	45.9
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	8.3
173	Less than 2.0% of mass 174	0
174	50.0 - 100.0% of mass 95	94.9
175	5.0 -9.0% of mass 174	7.1
176	95.0 - 101.0% of mass 174	95.5
177	5.0 - 9.0% of mass 176	6.6

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCVMIX[A]02	W8VM190201-01	020119V8\8H503.D	01-FEB-19 09:49
BLK02LCS	1204214222	020119V8\8H503BR.D	01-FEB-19 09:49
BLK02	1204214221	020119V8\8H505BR.D	01-FEB-19 10:52
40697-001	469833001	020119V8\8H512.D	01-FEB-19 14:31
40697-002	469833002	020119V8\8H513.D	01-FEB-19 15:03
40697-003	469833003	020119V8\8H514.D	01-FEB-19 15:34

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 40697

Instrument: VOA8.I

STD Analysis Time: 31-JAN-19 10:25

GC Column: DB-624

Data File: 013119V8\8H403.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	1312643	11.0	1114745	14.2	829308	16.7
Upper Limit	2625286	11.5	2229490	14.7	1658616	17.2
Lower Limit	656322	10.5	557373	13.7	414654	16.2
Sample ID						
BLK01LCS	1312643	11.0	1114745	14.2	829308	16.7
BLK01	1117259	11.0	939302	14.2	610877	16.7
40699-001MS	1110998	11.0	950433	14.2	778843	16.7
40699-001MSD	1177412	11.0	984030	14.2	746406	16.7

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk

* Value outside of QC Limits

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 40697

Instrument: VOA8.I

STD Analysis Time: 01-FEB-19 09:49

GC Column: DB-624

Data File: 020119V8\8H503.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	1330602	11.0	1144825	14.2	907945	16.7
Upper Limit	2661204	11.5	2289650	14.7	1815890	17.2
Lower Limit	665301	10.5	572413	13.7	453973	16.2
Sample ID						
BLK02LCS	1330602	11.0	1144825	14.2	907945	16.7
BLK02	1151696	11.0	1021524	14.2	651893	16.7
40697-001	1045842	11.0	920759	14.2	588550	16.7
40697-002	1025319	11.0	890032	14.2	593116	16.7
40697-003	1012970	11.0	910893	14.2	592194	16.7

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Standards

Low level SW846 8260B and Regular level 8260B and EPA 624

Calibration Standard Concentration Levels

	Level 1	Level 1a	Level 2	Level 3	Level 4	Level 5	Level 6 #	Level 7 !	Level 7a
Fluorobenzene (IS)	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
1,2-Dichloroethane-d4(surr)		20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Dichlorodifluoromethane		0.5	1	2	5	10	20	50	100
Chloromethane		0.5	1	2	5	10	20	50	100
Vinyl chloride		0.5	1	2	5	10	20	50	100
Bromomethane		0.5	1	2	5	10	20	50	100
Chloroethane		0.5	1	2	5	10	20	50	100
Trichlorofluoromethane		0.5	1	2	5	10	20	50	100
1,1-Dichloroethene		0.5	1	2	5	10	20	50	100
Acetone	1	2.5	5	10	25	50	100	250	500
Iodomethane	1	2.5	5	10	25	50	100	250	500
Carbon disulfide	1	2.5	5	10	25	50	100	250	500
Methylene chloride		0.5	1	2	5	10	20	50	100
trans-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,1-Dichloroethane		0.5	1	2	5	10	20	50	100
Ethyl ether		0.5	1	2	5	10	20	50	100
Vinyl acetate	1	2.5	5	10	25	50	100	250	500
cis-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethene (total)		1	2	4	10	20	40	100	200
Cyclohexene		0.5	1	2	5	10	20	50	100
2-Chloroethylvinyl ether			5	10	25	50	100	250	500
2,2-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Butanone	1	2.5	5	10	25	50	100	250	500
Bromochloromethane		0.5	1	2	5	10	20	50	100
Chloroform		0.5	1	2	5	10	20	50	100
1,1,1-Trichloroethane		0.5	1	2	5	10	20	50	100
1,1-Dichloropropene		0.5	1	2	5	10	20	50	100
Carbon tetrachloride		0.5	1	2	5	10	20	50	100
Benzene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethane		0.5	1	2	5	10	20	50	100
Trichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloropropane		0.5	1	2	5	10	20	50	100
Dibromomethane		0.5	1	2	5	10	20	50	100
Bromodichloromethane		0.5	1	2	5	10	20	50	100
cis-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
tert-Butylmethylether		0.5	1	2	5	10	20	50	100
Ethyl Ether			1	2	5	10	20	50	100
Acetonitrile			25	50	125	250	500	1250	2500
Methyl acetate			5	10	25	50	100	250	500
Cyclohexane			1	2	5	10	20	50	100
Methylcyclohexane			1	2	5	10	20	50	100
n-Butyl alcohol		50	100	200	500	1000	2000	5000	10000
2-Nitropropane			5	10	25	50	100	250	500
Ethyl acetate			5	10	25	50	100	250	500
Acrolein			5	10	25	50	100	250	500
Trichlorotrifluoroethane		2	5	10	25	50	100	250	500
Allyl chloride			5	10	25	50	100	250	500
Acrylonitrile			5	10	25	50	100	250	500
1,4-Dioxane			50	100	250	500	1000	2500	5000
Isobutyl alcohol			50	100	250	500	1000	2500	5000
Methacrylonitrile			5	10	25	50	100	250	500
Propionitrile			5	10	25	50	100	250	500
Methyl methacrylate			5	10	25	50	100	250	500
Chlorotrifluoroethylene			5	10	25	50	100	150	200
2-Chloro-1,1,1-trifluoroethane			5	10	25	50	100	150	200
Tetrahydrofuran			5	10	25	50	100	250	500
tert-Butyl alcohol			50	100	250	500	1000	2500	5000
Isopropyl ether			1	2	5	10	20	50	100
Ethyl tert-butyl ether			1	2	5	10	20	50	100
Isopropyl alcohol			50	100	250	500	1000	2500	5000
Methyl tert-amyl ether			1	2	5	10	20	50	100
1-Chlorohexane			1	2	5	10	20	50	100
2-Chloro-1,3-butadiene(chloroprene)			1	2	5	10	20	50	100
Chlorobenzene-d5 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Toluene-d8 (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
4-Methyl-2-pentanone	1	2.5	5	10	25	50	100	250	500
Toluene		0.5	1	2	5	10	20	50	100
trans-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
1,1,2-Trichloroethane		0.5	1	2	5	10	20	50	100
Tetrachloroethene		0.5	1	2	5	10	20	50	100
1,3-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Hexanone	1	2.5	5	10	25	50	20	250	500
Dibromochloromethane		0.5	1	2	5	10	20	50	100
1,2-Dibromoethane		0.5	1	2	5	10	20	50	100
Chlorobenzene		0.5	1	2	5	10	20	50	100
1,1,1,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Ethylbenzene		0.5	1	2	5	10	20	50	100
m,p-Xylene		1	2	4	10	20	20	100	200
o-Xylene		0.5	1	2	5	10	20	50	100
Xylenes (total)		1.5	3	6	15	30	60	150	300
Stryene		0.5	1	2	5	10	20	50	100
Ethyl methacrylate			5	10	25	50	100	250	500
1,4-Dichlorobenzene-d4 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromofluorobenzene (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromoform		0.5	1	2	5	10	20	50	100
Isopropylbenzene		0.5	1	2	5	10	20	50	100
1,1,2,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Bromobenzene		0.5	1	2	5	10	20	50	100
1,2,3-Trichloropropane		0.5	1	2	5	10	20	50	100
n-Propylbenzene		0.5	1	2	5	10	20	50	100
2-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,3,5-Trimethylbenzene		0.5	1	2	5	10	20	50	100
4-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,2,4-Trimethylbenzene		0.5	1	2	5	10	20	50	100
sec-Butylbenzene		0.5	1	2	5	10	20	50	100
1,3-Dichlorobenzene		0.5	1	2	5	10	20	50	100
tert-Butylbenzene		0.5	1	2	5	10	20	50	100
Isopropyltoluene		0.5	1	2	5	10	20	50	100
1,4-Dichlorobenzene		0.5	1	2	5	10	20	50	100
n-Butylbenzene		0.5	1	2	5	10	20	50	100
1,2-Dichlorobenzene		0.5	1	2	5	10	20	50	100
1,2-Dibromo-3-chloropropa		0.5	1	2	5	10	20	50	100
1,2,4-Trichlorobenzene		0.5	1	2	5	10	20	50	100
Hexachlorobutadiene		0.5	1	2	5	10	20	50	100
Naphthalene		0.5	1	2	5	10	20	50	100
1,2,3-Trichlorobenzene		0.5	1	2	5	10	20	50	100
cis-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
trans-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
Pentachloroethane			5	10	25	50	100	250	500
Benzyl chloride			5	10	25	50	100	250	500
Cyclohexanone			25	50	125	250	500	1250	2500
bis(2-Chloro-isopropyl)ether			5	10	25	50	100	250	500

Method	PQL	Concentration range		
SW 846 8260B low level	Level 1 &1a	Levels 1-> 7a	IS/SS @ 20 ppb	
EPA 524.2	Level 1a	Levels 1a-> 7a	IS/SS @ 20 ppb	
SW846 8260B/624	Level 2	Levels 1a-> 7a	IS/SS @ 50 ppb	n-butyl alchol only in 1a

#: Indicates calibration verification concentration level used for low level analysis

!: Indicates calibration verification concentration level used for regular level analysis

01/09/2019

Calibration History Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

01/10/2019

Cal Lvl:10 Amt:40.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E109.D

Injection Date	Mix	Calibration File
07 Jan 2019 12:40	A	C:\msdchem\1\DATA\010719V8\8E109.D

Cal Lvl:2 Amt:0.50 Last Updated with: C:\msdchem\1\DATA\010719V8\8E112.D

Injection Date	Mix	Calibration File
07 Jan 2019 14:14	A	C:\msdchem\1\DATA\010719V8\8E112.D

Cal Lvl:3 Amt:1.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E105.D

Injection Date	Mix	Calibration File
07 Jan 2019 10:35	A	C:\msdchem\1\DATA\010719V8\8E105.D

Cal Lvl:4 Amt:2.00 None of the compounds use this level.

Injection Date	Mix	Calibration File

Cal Lvl:5 Amt:5.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E106.D

Injection Date	Mix	Calibration File
07 Jan 2019 11:07	A	C:\msdchem\1\DATA\010719V8\8E106.D

Cal Lvl:6 Amt:10.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E107.D

Injection Date	Mix	Calibration File
07 Jan 2019 11:38	A	C:\msdchem\1\DATA\010719V8\8E107.D

Cal Lvl:7 Amt:20.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E108.D

Injection Date	Mix	Calibration File
07 Jan 2019 12:09	A	C:\msdchem\1\DATA\010719V8\8E108.D

Cal Lvl:8 Amt:50.00 Last Updated with: C:\msdchem\1\DATA\010719V8\8E110.D

Injection Date	Mix	Calibration File
07 Jan 2019 13:11	A	C:\msdchem\1\DATA\010719V8\8E110.D

Cal Lvl:9 Amt:0.00 None of the compounds use this level.

Injection Date	Mix	Calibration File

VOA8-524T-010719-.M Wed Jan 09 13:22:27 2019

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

01/09/2019

01/10/2019

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
2)MA Dichlorodifluoromethane	0.2075742 0.2315229	0.2359308 0.2238049	0.2537771		0.2535455	0.2486408	0.2364	AVRG		7.2436
3)MA Chloromethane 0.0057 | 0.4153 | 0.00	1186666 574076	20860 1583892	30344		126558	259697		1/x LINR		0.9997
4)MA Vinyl chloride	0.4181729 0.4160268	0.4778060 0.4329160	0.4523909		0.4186174	0.4140580	0.4329	AVRG		5.5454
5)MA Bromomethane 0.0035 | 0.3872 | 0.00	1145944 521329	18639 1436142	23425		115563	246923		1/x LINR		0.9992
6)MA Chloroethane	0.2586149 0.2497859	0.3247590 0.2618999	0.3226304		0.2707086	0.2664661	0.2793	AVRG		11.1181
7)MA Trichlorofluoromethane	0.7475544 0.7966293	0.8939189 0.8302540	0.9394286		0.7972604	0.8150803	0.8314	AVRG		7.8024
8)MA 1,1-Dichloroethylene	0.5336141 0.5295831	0.6280194 0.5591992	0.5541476		0.5115314	0.5216894	0.5483	AVRG		7.1167
9)MA Methylene chloride 0.0043 | 0.3784 | 0.00	1056775 531202	17833 1445678	25493		116858	241966		1/x LINR		0.9996
10)MA tert-Butyl methyl ether	0.9293820 0.9063300	0.9146784 0.9667173	0.8283128		0.7955683	0.8522984	0.8848	AVRG		6.8849
11)MA trans-1,2-Dichloroethyle	0.4929532 0.4865226	0.5434724 0.5087505	0.5334660		0.4655420	0.4781584	0.5013	AVRG		5.7421
12)MA 1,1-Dichloroethane	0.5144806 0.5336804	0.4696439 0.5039961	0.6000804		0.5412659	0.5269457	0.5272	AVRG		7.5738
13)MA cis-1,2-Dichloroethylene	0.3002334 0.3091886	0.3196770 0.3041220	0.2714125		0.2743519	0.3018091	0.2973	AVRG		6.0090
14)MA 2,2-Dichloropropane	0.2140613 0.2321597	0.1921327 0.2215272	0.2331321		0.2200836	0.2353400	0.2212	AVRG		6.8052
15)MA Bromochloromethane	0.1731017 0.1740667	0.1706340 0.1724379	0.1876398		0.1636255	0.1780352	0.1742	AVRG		4.2192
16)MA Chloroform	0.4754387 0.5040429	0.5642318 0.4762751	0.4906712		0.4935777	0.4936449	0.4997	AVRG		6.0459

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
17)MA 1,1,1-Trichloroethane	0.3939887	0.3939674	0.4076876		0.4125252	0.4130724				
	0.4189098	0.4071206					0.4068	AVRG		2.3505
18)MA 1,1-Dichloropropene	0.3279976	0.2692260	0.2181393		0.2858265	0.3212903				
	0.3248799	0.3269895					0.2963	AVRG		14.0086
19)MA Carbon tetrachloride	0.4203538	0.4042856	0.4601534		0.4010136	0.4369740				
	0.4351933	0.4274687					0.4265	AVRG		4.7857
20)SA 1,2-Dichloroethane-d4	0.1440143	0.1396188	0.1632026		0.1500971	0.1446981				
	0.1480506	0.1447435					0.1478	AVRG		5.1150
21)MA 1,2-Dichloroethane	0.3418874	0.3931974	0.3494964		0.3271836	0.3347503				
	0.3572771	0.3394453					0.3490	AVRG		6.2366
22)MA Benzene	0.9877496	0.8518148	0.8379471		0.9463768	0.9760203				
	1.0082012	0.9709625					0.9399	AVRG		7.1926
23)MA Trichloroethylene	0.2952751	0.2391648	0.2285811		0.2367153	0.2740737				
	0.2975130	0.2906313					0.2660	AVRG		11.3823
24)MA 1,2-Dichloropropane	0.2717723	0.2650679	0.2433904		0.2620093	0.2629713				
	0.2787997	0.2762889					0.2658	AVRG		4.4516
25)MA Dibromomethane	0.1952230	0.1819069	0.2129827		0.1954658	0.1903944				
	0.2026354	0.1974727					0.1966	AVRG		4.9282
26)MA Bromodichloromethane	0.3732784	0.3535574	0.3728389		0.3495678	0.3615442				
	0.3742296	0.3695108					0.3649	AVRG		2.7777
27)MA cis-1,3-Dichloropropylen -0.0066 | 0.3885 | 0.00	1110188 509977	8378 1515961	14476		76798	204334		1/x LINR	# 	0.9935
29)SA Toluene-d8	1.1287738	1.1923469	1.2107485		1.2287151	1.1909584				
	1.1618749	1.1369662					1.1786	AVRG		3.1713
30)MA Toluene	1.2978781	1.3069079	1.1848377		1.3501292	1.4200446				
	1.4124978	1.2747713					1.3210	AVRG		6.2148
31)MA trans-1,3-Dichloropropyl -0.0055 | 0.4266 | 0.00	1084959 491124	8247 1429241	13201		83319	204610		1/x LINR		0.9983
32)MA 1,1,2-Trichloroethane	0.2571084	0.2466801	0.2582992		0.2631914	0.2592418				
	0.2655684	0.2540845					0.2577	AVRG		2.4004

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
33)MA 1,3-Dichloropropane	0.4982528	0.5492318	0.4315555		0.5163662	0.5047590				
	0.5107842	0.4985737					0.5014	AVRG		7.0553
34)MA Tetrachloroethylene	0.3229909	0.3552741	0.2671006		0.3328728	0.3434785				
	0.3449998	0.3340465					0.3287	AVRG		8.8383
35)MA Dibromochloromethane	0.3907032	0.3245225	0.3096664		0.3677553	0.3765284				
	0.3894224	0.3912493					0.3643	AVRG		9.2304
36)MA 1,2-Dibromoethane	0.3266562	0.3120366	0.2969854		0.2846447	0.3124131				
	0.3290724	0.3273926					0.3127	AVRG		5.4032
37)MA Chlorobenzene	0.9970638	1.0828284	1.0429959		1.0640477	1.0533393				
	1.0459466	0.9791418					1.0379	AVRG		3.5513
38)MA 1,1,1,2-Tetrachloroethan	0.4121855	0.3274865	0.4053065		0.4170444	0.4272045				
	0.4284790	0.4049125					0.4032	AVRG		8.6073
39)MA Ethylbenzene	3788429	31532	46761		335935	827941		1/x		
-0.0119 | 1.5020 | 0.00	1878358	4771612						LINR		0.9979
40)MA m,p-Xylenes	3260480	22716	33398		289763	689509		1/x		
-0.0155 | 0.6423 | 0.00	1549522	4109538						LINR	#	0.9988
41)MA o-Xylene	3279200	18056	26738		278994	685877		1/x		
-0.0223 | 1.3097 | 0.00	1597979	4216505						LINR	#	0.9986
42)MA Styrene	2700565	14775	22935		193720	540450		1/x		
-0.0198 | 1.0574 | 0.00	1250484	3434775						LINR	#	0.9980
44)MA Bromoform	0.3672484	0.2767068	0.2802154		0.2920515	0.3169945				
	0.3377590	0.3641730					0.3193	AVRG		11.9549
45)MA Isopropylbenzene	3911882	22970	31530		290292	809587		1/x		
-0.0346 | 2.1075 | 0.00	1917009	4855380						LINR	#	0.9970
46)SA Bromofluorobenzene	0.6207996	0.6527835	0.6224296		0.6391939	0.6484564				
	0.6571301	0.6226448					0.6376	AVRG		2.4534
47)MA 1,1,2,2-Tetrachloroethan	0.6422484	0.7542134	0.7127082		0.6315620	0.6112691				
	0.6613459	0.6173826					0.6615	AVRG		8.0355
48)MA 1,2,3-Trichloropropane	0.1902675	0.2353881	0.1942591		0.1678790	0.1805313				
	0.1900965	0.1766863					0.1907	AVRG		11.3884

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	10 7	2 8	3 9	4	5	6	Avg	Curve	Exp	%RSD/r2
49)MA Bromobenzene	0.7430393	0.7416305	0.5939834		0.6432761	0.6880281				
	0.7331261	0.7309561					0.6963	AVRG		8.3219
50)MA n-Propylbenzene	2.4778889	2.1214777	1.7327810		2.3157895	2.5290455				
	2.6763867	2.3040344					2.3082	AVRG		13.4603
51)MA 1,3,5-Trimethylbenzene	3541197	20461	32888		277682	730078		1/x		
-0.0284 | 1.9028 | 0.00	1705408	4394679						LINR	#	0.9981
52)MA 2-Chlorotoluene	0.6894545	0.5730196	0.4715668		0.6271672	0.6456783				
	0.6772566	0.6697505					0.6220	AVRG		12.3669
53)MA 4-Chlorotoluene	1.6052041	1.2639089	1.0987108		1.4451513	1.5147205				
	1.6310573	1.5356185					1.4421	AVRG		13.4587
54)MA tert-Butylbenzene	851364	6254	6908		57118	164735		1/x		
-0.0074 | 0.4590 | 0.00	399004	1099035						LINR	#	0.9955
55)MA 1,2,4-Trimethylbenzene	3634448	20183	32404		321091	786621		1/x		
-0.0280 | 1.9814 | 0.00	1799920	4545891						LINR	#	0.9985
56)MA sec-Butylbenzene	4277490	27471	38744		363154	919140		1/x		
-0.0283 | 2.2967 | 0.00	2123323	5185423						LINR	#	0.9971
57)MA 4-Isopropyltoluene	3885810	26375	26459		305644	824472		1/x		
-0.0309 | 2.0840 | 0.00	1911059	4737393						LINR	#	0.9964
58)MA 1,3-Dichlorobenzene	1.3437070	1.3958830	1.0931242		1.2502550	1.3393022				
	1.3645189	1.3061850					1.2990	AVRG		7.8327
59)MA 1,4-Dichlorobenzene	1.4069764	1.6776231	1.4864777		1.4182636	1.3828528				
	1.4309952	1.3442871					1.4496	AVRG		7.5591
60)MA n-Butylbenzene	3535343	27991	35838		297838	742189		1/x		
-0.0172 | 1.8879 | 0.00	1711649	4322096						LINR		0.9979
61)MA 1,2-Dichlorobenzene	1.3427587	1.3237216	1.0934835		1.1931045	1.2565785				
	1.3679304	1.2893069					1.2667	AVRG		7.5803
62)MA 1,2-Dibromo-3-chloroprop	291078		2925		19499	49196		1/x		
-0.0050 | 0.1545 | 0.00	126721	367024						LINR		0.9948
63)MA 1,2,4-Trichlorobenzene	1743207	17437	20177		123182	322873		1/x		
-0.0064 | 0.9101 | 0.00	785288	2157888						LINR		0.9952

Response Factor Report VOA8
GEL Laboratories, LLC
Method File : C:\msdchem\1\DATA\010719V8\VOA8-524T-010719-.M
Last Update : Wed Jan 09 13:14:43 2019
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	10	2	3	4	5	6	Avg	Curve	Exp	%RSD/r2
b m1 m2	7	8	9							
64)MA Hexachlorobutadiene	0.3826538	0.5023213	0.3564358		0.3639191	0.3444560				
	0.3611017	0.3601046					0.3816	AVRG		14.2674
65)MA Naphthalene	4602827	43217	40290		306569	835616		1/x		
-0.0269 2.4109 0.00	2200801	5607649						LINR	#	0.9929
66)MA 1,2,3-Trichlorobenzene	1721945	17625	19627		127627	321080				
-0.0270 0.9283 0.00	786193	2147756						LINR		0.9984
68)B Trichlorotrifluoroethane							0.0000	AVRG	#	-1.0000
69)B 1,4-Dioxane							0.0000	AVRG	#	-1.0000

(#) = Out of Range ($) = Individual RF Out of Range
AVRG = Average, LINR = Linear Regression, 1/x = the inverse of concentration, 1/x^2 = the inverse square of concentration

Continuing Calibration Summary

Client SDG: 40697

Instrument ID: VOA8.I **Injection Date:** 31-JAN-19 10:25

Data File: 013119V8\8H403.D **Init. Cal. Date(s)** 07-JAN-19 10:35 - 07-JAN-19 14:14

Lab Sample ID W8VM190131-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD **Method Update:** 09-JAN-19 13:14

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.1478	0.12146		.01		-17.82138	30		Averaged
S	Toluene-d8	1.1786	1.12308		.01		-4.71067	30		Averaged
S	Bromofluorobenzene	0.6376	0.55091		.01		-13.5963	30		Averaged
	Dichlorodifluoromethane	0.2364	0.21241		.01		-10.14805	30		Averaged
	Chloromethane	20	18.93	20			-5.35	30		Linear
	Vinyl chloride	0.4329	0.38847		.01		-10.26334	30		Averaged
	Bromomethane	20	16.8	20			-16	30		Linear
	Chloroethane	0.2793	0.22995		.01		-17.66917	30		Averaged
	Trichlorofluoromethane	0.8314	0.77125		.01		-7.23478	30		Averaged
	1,1-Dichloroethylene	0.5483	0.48621		.01		-11.32409	30		Averaged
	Methylene chloride	20	19.4	20			-3	30		Linear
	tert-Butyl methyl ether	0.8848	0.80807		.01		-8.67202	30		Averaged
	trans-1,2-Dichloroethylene	0.5013	0.45578		.01		-9.08039	30		Averaged
	1,1-Dichloroethane	0.5272	0.50035		.1		-5.09294	30		Averaged
	cis-1,2-Dichloroethylene	0.2973	0.29883		.01		0.51463	30		Averaged
	2,2-Dichloropropane	0.2212	0.22623		.01		2.27396	30		Averaged
	Bromochloromethane	0.1742	0.1553		.01		-10.8496	30		Averaged
	Chloroform	0.4997	0.43558		.01		-12.8317	30		Averaged
	1,1,1-Trichloroethane	0.4068	0.35735		.01		-12.15585	30		Averaged
	1,1-Dichloropropene	0.2963	0.31813		.01		7.36753	30		Averaged
	Carbon tetrachloride	0.4265	0.37225		.01		-12.71981	30		Averaged
	1,2-Dichloroethane	0.349	0.27972		.01		-19.851	30		Averaged
	Benzene	0.9399	0.97347		.01		3.57166	30		Averaged
	Trichloroethylene	0.266	0.2515		.01		-5.45113	30		Averaged
	1,2-Dichloropropane	0.2658	0.27717		.01		4.27765	30		Averaged
	Dibromomethane	0.1966	0.17971		.01		-8.59105	30		Averaged
	Bromodichloromethane	0.3649	0.31589		.01		-13.43108	30		Averaged
	cis-1,3-Dichloropropylene	20	18.36	20			-8.2	30		Linear
	Toluene	1.321	1.36469		.01		3.30734	30		Averaged
	trans-1,3-Dichloropropylene	20	19.19	20			-4.05	30		Linear
	1,1,2-Trichloroethane	0.2577	0.25063		.01		-2.7435	30		Averaged
	1,3-Dichloropropane	0.5014	0.49465		.01		-1.34623	30		Averaged
	Tetrachloroethylene	0.3287	0.34004		.01		3.44995	30		Averaged
	Dibromochloromethane	0.3643	0.36581		.01		0.41449	30		Averaged
	1,2-Dibromoethane	0.3127	0.30561		.01		-2.26735	30		Averaged
	Chlorobenzene	1.0379	1.00423		.3		-3.24405	30		Averaged
	1,1,1,2-Tetrachloroethane	0.4032	0.38299		.01		-5.0124	30		Averaged

Continuing Calibration Summary

Instrument ID: VOA8.I **Injection Date:** 31-JAN-19 10:25

Data File: 013119V8\8H403.D **Init. Cal. Date(s)** 07-JAN-19 10:35 07-JAN-19 14:14

Lab Sample ID W8VM190131-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD

Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
Ethylbenzene	20	19.94	20			-0.3	30		Linear
m,p-Xylenes	40	40.23	40			0.575	30		Linear
o-Xylene	20	19.37	20			-3.15	30		Linear
Styrene	20	19.92	20			-0.4	30		Linear
Bromoform	0.3193	0.34887		.1		9.26088	30		Averaged
Isopropylbenzene	20	18.87	20			-5.65	30		Linear
1,1,2,2-Tetrachloroethane	0.6615	0.57981		.3		-12.34921	30		Averaged
1,2,3-Trichloropropane	0.1907	0.15961		.01		-16.30309	30		Averaged
Bromobenzene	0.6963	0.69459		.01		-0.24558	30		Averaged
n-Propylbenzene	2.3082	2.46227		.01		6.6749	30		Averaged
1,3,5-Trimethylbenzene	20	18.36	20			-8.2	30		Linear
2-Chlorotoluene	0.622	0.63286		.01		1.74598	30		Averaged
4-Chlorotoluene	1.4421	1.41338		.01		-1.99154	30		Averaged
tert-Butylbenzene	20	17.86	20			-10.7	30		Linear
1,2,4-Trimethylbenzene	20	18.45	20			-7.75	30		Linear
sec-Butylbenzene	20	19.3	20			-3.5	30		Linear
4-Isopropyltoluene	20	19.04	20			-4.8	30		Linear
1,3-Dichlorobenzene	1.299	1.27374		.01		-1.94457	30		Averaged
1,4-Dichlorobenzene	1.4496	1.33815		.01		-7.68833	30		Averaged
n-Butylbenzene	20	18.78	20			-6.1	30		Linear
1,2-Dichlorobenzene	1.2667	1.22749		.01		-3.09544	30		Averaged
1,2-Dibromo-3-chloropropane	20	17.05	20			-14.75	30		Linear
1,2,4-Trichlorobenzene	20	18.1	20			-9.5	30		Linear
Hexachlorobutadiene	0.3816	0.33984		.01		-10.9434	30		Averaged
Naphthalene	20	17.25	20			-13.75	30		Linear
1,2,3-Trichlorobenzene	20	17.88	20			-10.6	30		Linear

Continuing Calibration Summary

Client SDG: 40697

Instrument ID: VOA8.I **Injection Date:** 01-FEB-19 09:49

Data File: 020119V8\8H503.D **Init. Cal. Date(s)** 07-JAN-19 10:35 - 07-JAN-19 14:14

Lab Sample ID W8VM190201-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD **Method Update:** 09-JAN-19 13:14

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.1478	0.12889		.01		-12.79432	30		Averaged
S	Toluene-d8	1.1786	1.10402		.01		-6.32785	30		Averaged
S	Bromofluorobenzene	0.6376	0.53585		.01		-15.95828	30		Averaged
	Dichlorodifluoromethane	0.2364	0.20942		.01		-11.41286	30		Averaged
	Chloromethane	20	18.98	20			-5.1	30		Linear
	Vinyl chloride	0.4329	0.39204		.01		-9.43867	30		Averaged
	Bromomethane	20	18.52	20			-7.4	30		Linear
	Chloroethane	0.2793	0.23557		.01		-15.657	30		Averaged
	Trichlorofluoromethane	0.8314	0.76489		.01		-7.99976	30		Averaged
	1,1-Dichloroethylene	0.5483	0.46619		.01		-14.97538	30		Averaged
	Methylene chloride	20	19.25	20			-3.75	30		Linear
	tert-Butyl methyl ether	0.8848	0.79009		.01		-10.70411	30		Averaged
	trans-1,2-Dichloroethylene	0.5013	0.44637		.01		-10.95751	30		Averaged
	1,1-Dichloroethane	0.5272	0.51111		.1		-3.05197	30		Averaged
	cis-1,2-Dichloroethylene	0.2973	0.29314		.01		-1.39926	30		Averaged
	2,2-Dichloropropane	0.2212	0.23876		.01		7.93852	30		Averaged
	Bromochloromethane	0.1742	0.16846		.01		-3.29506	30		Averaged
	Chloroform	0.4997	0.44855		.01		-10.23614	30		Averaged
	1,1,1-Trichloroethane	0.4068	0.36134		.01		-11.17502	30		Averaged
	1,1-Dichloropropene	0.2963	0.31311		.01		5.6733	30		Averaged
	Carbon tetrachloride	0.4265	0.38373		.01		-10.02814	30		Averaged
	1,2-Dichloroethane	0.349	0.27848		.01		-20.2063	30		Averaged
	Benzene	0.9399	0.98112		.01		4.38557	30		Averaged
	Trichloroethylene	0.266	0.24495		.01		-7.91353	30		Averaged
	1,2-Dichloropropane	0.2658	0.2731		.01		2.74643	30		Averaged
	Dibromomethane	0.1966	0.1806		.01		-8.13835	30		Averaged
	Bromodichloromethane	0.3649	0.31358		.01		-14.06413	30		Averaged
	cis-1,3-Dichloropropylene	20	17.69	20			-11.55	30		Linear
	Toluene	1.321	1.32106		.01		0.00454	30		Averaged
	trans-1,3-Dichloropropylene	20	18.05	20			-9.75	30		Linear
	1,1,2-Trichloroethane	0.2577	0.25395		.01		-1.45518	30		Averaged
	1,3-Dichloropropane	0.5014	0.48766		.01		-2.74033	30		Averaged
	Tetrachloroethylene	0.3287	0.33512		.01		1.95315	30		Averaged
	Dibromochloromethane	0.3643	0.36405		.01		-0.06862	30		Averaged
	1,2-Dibromoethane	0.3127	0.29454		.01		-5.80748	30		Averaged
	Chlorobenzene	1.0379	0.95756		.3		-7.74063	30		Averaged
	1,1,1,2-Tetrachloroethane	0.4032	0.37308		.01		-7.47024	30		Averaged

Continuing Calibration Summary

Instrument ID: VOA8.I **Injection Date:** 01-FEB-19 09:49

Data File: 020119V8\8H503.D **Init. Cal. Date(s)** 07-JAN-19 10:35 07-JAN-19 14:14

Lab Sample ID W8VM190201-01 **Method:** 010719V8\VOA8-524T-010719-.M

Quant Type ISTD

Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
Ethylbenzene	20	19.36	20			-3.2	30		Linear
m,p-Xylenes	40	40.56	40			1.4	30		Linear
o-Xylene	20	19.18	20			-4.1	30		Linear
Styrene	20	19.91	20			-0.45	30		Linear
Bromoform	0.3193	0.33919		.1		6.22925	30		Averaged
Isopropylbenzene	20	17.26	20			-13.7	30		Linear
1,1,2,2-Tetrachloroethane	0.6615	0.57		.3		-13.8322	30		Averaged
1,2,3-Trichloropropane	0.1907	0.15354		.01		-19.4861	30		Averaged
Bromobenzene	0.6963	0.66874		.01		-3.95806	30		Averaged
n-Propylbenzene	2.3082	2.28059		.01		-1.19617	30		Averaged
1,3,5-Trimethylbenzene	20	17.05	20			-14.75	30		Linear
2-Chlorotoluene	0.622	0.59183		.01		-4.85048	30		Averaged
4-Chlorotoluene	1.4421	1.30343		.01		-9.61584	30		Averaged
tert-Butylbenzene	20	16.78	20			-16.1	30		Linear
1,2,4-Trimethylbenzene	20	16.98	20			-15.1	30		Linear
sec-Butylbenzene	20	17.82	20			-10.9	30		Linear
4-Isopropyltoluene	20	17.65	20			-11.75	30		Linear
1,3-Dichlorobenzene	1.299	1.23682		.01		-4.78676	30		Averaged
1,4-Dichlorobenzene	1.4496	1.26735		.01		-12.57243	30		Averaged
n-Butylbenzene	20	17.06	20			-14.7	30		Linear
1,2-Dichlorobenzene	1.2667	1.16497		.01		-8.0311	30		Averaged
1,2-Dibromo-3-chloropropane	20	17.74	20			-11.3	30		Linear
1,2,4-Trichlorobenzene	20	17.11	20			-14.45	30		Linear
Hexachlorobutadiene	0.3816	0.332		.01		-12.9979	30		Averaged
Naphthalene	20	16.13	20			-19.35	30		Linear
1,2,3-Trichlorobenzene	20	16.53	20			-17.35	30		Linear

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**			**Matrix:**	**WATER**
Lab Sample ID:	**1204209916**				
Client Sample:	**QC for batch 1845229**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1845229**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/31/2019 11:28**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/31/2019 11:28**				
Data File:	**013119V8\8H405BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**			**Matrix:**	**WATER**
Lab Sample ID:	**1204209916**				
Client Sample:	**QC for batch 1845229**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1845229**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/31/2019 11:28**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/31/2019 11:28**				
Data File:	**013119V8\8H405BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**			**Matrix:**	**WATER**
Lab Sample ID:	**1204209917**				
Client Sample:	**QC for batch 1845229**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1845229**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/31/2019 10:25**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/31/2019 10:25**				
Data File:	**013119V8\8H403BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		19.0	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		17.6	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		17.5	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		19.5	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		19.0	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		17.7	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		21.5	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		17.9	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		16.7	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		18.1	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		18.5	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		19.5	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		19.4	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		16.0	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		20.9	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		18.4	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		19.6	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		19.7	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		18.5	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		20.5	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		20.4	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		19.6	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		19.0	ug/L	0.167	0.500	0.500
71-43-2	Benzene		20.7	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		20.0	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		17.8	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		17.3	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		21.9	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		16.8	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		17.5	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		19.4	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		16.5	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		17.4	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		18.9	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		20.1	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		18.3	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		18.0	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		19.9	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**			**Matrix:**	**WATER**
Lab Sample ID:	**1204209917**				
Client Sample:	**QC for batch 1845229**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1845229**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/31/2019 10:25**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/31/2019 10:25**				
Data File:	**013119V8\8H403BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		17.8	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		18.9	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		19.4	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		17.3	ug/L	0.167	0.500	0.500
100-42-5	Styrene		19.9	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		20.7	ug/L	0.167	0.500	0.500
108-88-3	Toluene		20.7	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		18.9	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		18.6	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		18.0	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		20.1	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		18.4	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		40.2	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		18.8	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		21.3	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		19.4	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		19.3	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		18.3	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		17.9	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		18.2	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		19.2	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		17.1	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**	**Date Collected:**	**01/23/2019 12:23**	**Matrix:**	**W**
Lab Sample ID:	**1204209918**	**Date Received:**	**01/24/2019 10:50**		
Client Sample:	**QC for batch 1845229**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40699-001PS**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/31/2019 20:52**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/31/2019 20:52**				
Data File:	**013119V8\8H423.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		19.8	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		18.0	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		17.2	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		20.3	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		19.0	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		17.0	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		20.4	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		16.9	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		16.4	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		16.9	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		17.7	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		19.0	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		18.3	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		16.1	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		20.4	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		17.1	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		19.1	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		19.7	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		17.9	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		19.1	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		19.7	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		18.0	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		17.7	ug/L	0.167	0.500	0.500
71-43-2	Benzene		20.5	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		19.4	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		19.6	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		17.3	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		18.0	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		19.4	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		18.2	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		19.0	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		17.9	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		17.6	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		19.1	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		19.1	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		18.6	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		19.4	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		19.9	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**	**Date Collected:**	**01/23/2019 12:23**	**Matrix:**	**W**
Lab Sample ID:	**1204209918**	**Date Received:**	**01/24/2019 10:50**		
Client Sample:	**QC for batch 1845229**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40699-001PS**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/31/2019 20:52**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/31/2019 20:52**				
Data File:	**013119V8\8H423.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		16.5	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		17.1	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		19.4	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		16.0	ug/L	0.167	0.500	0.500
100-42-5	Styrene		20.1	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		20.9	ug/L	0.167	0.500	0.500
108-88-3	Toluene		20.6	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		18.2	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		18.5	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		17.3	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		19.3	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		16.4	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		41.3	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		16.7	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		19.8	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		19.8	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		17.9	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		17.0	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		17.0	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		18.1	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		17.7	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		15.9	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**	**Date Collected:**	**01/23/2019 12:23**	**Matrix:**	**W**
Lab Sample ID:	**1204209919**	**Date Received:**	**01/24/2019 10:50**		
Client Sample:	**QC for batch 1845229**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40699-001PSD**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/31/2019 21:23**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/31/2019 21:23**				
Data File:	**013119V8\8H424.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		18.6	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		17.8	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		17.4	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		19.2	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		18.2	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		17.6	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		20.3	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		17.7	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		15.9	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		17.8	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		18.1	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		19.2	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		19.4	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		15.9	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		20.9	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		18.4	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		19.6	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		19.2	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		17.8	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		18.9	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		20.0	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		18.9	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		18.6	ug/L	0.167	0.500	0.500
71-43-2	Benzene		21.0	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		19.8	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		18.2	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		17.4	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		18.9	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		18.7	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		18.2	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		19.0	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		18.5	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		17.6	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		21.9	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		18.6	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		18.2	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		21.0	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		19.3	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**	**Date Collected:**	**01/23/2019 12:23**	**Matrix:**	**W**
Lab Sample ID:	**1204209919**	**Date Received:**	**01/24/2019 10:50**		
Client Sample:	**QC for batch 1845229**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**40699-001PSD**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**01/31/2019 21:23**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**01/31/2019 21:23**				
Data File:	**013119V8\8H424.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		17.0	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		18.0	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		19.7	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		17.1	ug/L	0.167	0.500	0.500
100-42-5	Styrene		20.2	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		19.8	ug/L	0.167	0.500	0.500
108-88-3	Toluene		19.8	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		18.4	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		18.6	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		20.1	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		19.3	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		16.2	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		40.8	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		17.4	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		20.5	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		19.3	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		18.7	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		17.3	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		17.4	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		17.8	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		17.4	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		16.0	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**			**Matrix:**	**WATER**
Lab Sample ID:	**1204214221**				
Client Sample:	**QC for batch 1845229**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1845229**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/01/2019 10:52**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/01/2019 10:52**				
Data File:	**020119V8\8H505BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane	U	0.500	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene	U	0.500	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene	U	0.500	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane	U	0.500	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane	U	0.500	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane	U	0.500	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene	U	0.500	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane	U	0.500	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene	U	0.500	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene	U	0.500	ug/L	0.167	0.500	0.500
71-43-2	Benzene	U	0.500	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene	U	0.500	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane	U	0.500	ug/L	0.167	0.500	0.500
75-25-2	Bromoform	U	0.500	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane	U	0.500	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride	U	0.500	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene	U	0.500	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane	U	0.500	ug/L	0.300	0.500	0.500
67-66-3	Chloroform	U	0.500	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane	U	0.500	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane	U	0.500	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane	U	0.500	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane	U	0.500	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene	U	0.500	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**			**Matrix:**	**WATER**
Lab Sample ID:	**1204214221**				
Client Sample:	**QC for batch 1845229**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**MB for batch 1845229**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/01/2019 10:52**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/01/2019 10:52**				
Data File:	**020119V8\8H505BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene	U	0.500	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene	U	0.500	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride	U	0.500	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene	U	0.500	ug/L	0.167	0.500	0.500
100-42-5	Styrene	U	0.500	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene	U	0.500	ug/L	0.167	0.500	0.500
108-88-3	Toluene	U	0.500	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane	U	0.500	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride	U	0.500	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes	U	1.00	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene	U	0.500	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene	U	0.500	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether	U	0.500	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene	U	0.500	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene	U	0.500	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene	U	0.500	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.330	1.00	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**			**Matrix:**	**WATER**
Lab Sample ID:	**1204214222**				
Client Sample:	**QC for batch 1845229**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1845229**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/01/2019 09:49**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/01/2019 09:49**				
Data File:	**020119V8\8H503BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
630-20-6	1,1,1,2-Tetrachloroethane		18.5	ug/L	0.167	0.500	0.500
71-55-6	1,1,1-Trichloroethane		17.8	ug/L	0.167	0.500	0.500
79-34-5	1,1,2,2-Tetrachloroethane		17.2	ug/L	0.167	0.500	0.500
79-00-5	1,1,2-Trichloroethane		19.7	ug/L	0.167	0.500	0.500
75-34-3	1,1-Dichloroethane		19.4	ug/L	0.167	0.500	0.500
75-35-4	1,1-Dichloroethylene		17.0	ug/L	0.188	0.500	0.500
563-58-6	1,1-Dichloropropene		21.1	ug/L	0.167	0.500	0.500
87-61-6	1,2,3-Trichlorobenzene		16.5	ug/L	0.167	0.500	0.500
96-18-4	1,2,3-Trichloropropane		16.1	ug/L	0.300	0.500	0.500
120-82-1	1,2,4-Trichlorobenzene		17.1	ug/L	0.167	0.500	0.500
95-63-6	1,2,4-Trimethylbenzene		17.0	ug/L	0.167	0.500	0.500
106-93-4	1,2-Dibromoethane		18.8	ug/L	0.167	0.500	0.500
95-50-1	1,2-Dichlorobenzene		18.4	ug/L	0.167	0.500	0.500
107-06-2	1,2-Dichloroethane		16.0	ug/L	0.167	0.500	0.500
78-87-5	1,2-Dichloropropane		20.6	ug/L	0.167	0.500	0.500
108-67-8	1,3,5-Trimethylbenzene		17.1	ug/L	0.167	0.500	0.500
541-73-1	1,3-Dichlorobenzene		19.0	ug/L	0.167	0.500	0.500
142-28-9	1,3-Dichloropropane		19.5	ug/L	0.167	0.500	0.500
106-46-7	1,4-Dichlorobenzene		17.5	ug/L	0.167	0.500	0.500
594-20-7	2,2-Dichloropropane		21.6	ug/L	0.167	0.500	0.500
95-49-8	2-Chlorotoluene		19.0	ug/L	0.167	0.500	0.500
106-43-4	4-Chlorotoluene		18.1	ug/L	0.167	0.500	0.500
99-87-6	4-Isopropyltoluene		17.7	ug/L	0.167	0.500	0.500
71-43-2	Benzene		20.9	ug/L	0.167	0.500	0.500
108-86-1	Bromobenzene		19.2	ug/L	0.167	0.500	0.500
74-97-5	Bromochloromethane		19.3	ug/L	0.167	0.500	0.500
75-27-4	Bromodichloromethane		17.2	ug/L	0.167	0.500	0.500
75-25-2	Bromoform		21.3	ug/L	0.300	0.500	0.500
74-83-9	Bromomethane		18.5	ug/L	0.300	0.500	0.500
56-23-5	Carbon tetrachloride		18.0	ug/L	0.167	0.500	0.500
108-90-7	Chlorobenzene		18.5	ug/L	0.167	0.500	0.500
75-00-3	Chloroethane		16.9	ug/L	0.300	0.500	0.500
67-66-3	Chloroform		18.0	ug/L	0.167	0.500	0.500
74-87-3	Chloromethane		19.0	ug/L	0.300	0.500	0.500
124-48-1	Dibromochloromethane		20.0	ug/L	0.167	0.500	0.500
74-95-3	Dibromomethane		18.4	ug/L	0.167	0.500	0.500
75-71-8	Dichlorodifluoromethane		17.7	ug/L	0.300	0.500	0.500
100-41-4	Ethylbenzene		19.4	ug/L	0.167	0.500	0.500

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**40697**			**Matrix:**	**WATER**
Lab Sample ID:	**1204214222**				
Client Sample:	**QC for batch 1845229**	**Client:**	**BRKL007**	**Project:**	**QC**
Client ID:	**LCS for batch 1845229**	**Method:**	**EPA 524.2**	**SOP Ref:**	**GL-OA-E-022**
Batch ID:	**1845229**	**Inst:**	**VOA8.I**	**Dilution:**	**1**
Run Date:	**02/01/2019 09:49**	**Analyst:**	**PXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/01/2019 09:49**				
Data File:	**020119V8\8H503BR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
87-68-3	Hexachlorobutadiene		17.4	ug/L	0.167	0.500	0.500
98-82-8	Isopropylbenzene		17.3	ug/L	0.167	0.500	0.500
75-09-2	Methylene chloride		19.3	ug/L	0.200	0.500	0.500
91-20-3	Naphthalene		16.1	ug/L	0.167	0.500	0.500
100-42-5	Styrene		19.9	ug/L	0.167	0.500	0.500
127-18-4	Tetrachloroethylene		20.4	ug/L	0.167	0.500	0.500
108-88-3	Toluene		20.0	ug/L	0.167	0.500	0.500
79-01-6	Trichloroethylene		18.4	ug/L	0.167	0.500	0.500
75-69-4	Trichlorofluoromethane		18.4	ug/L	0.300	0.500	0.500
75-01-4	Vinyl chloride		18.1	ug/L	0.300	0.500	0.500
156-59-2	cis-1,2-Dichloroethylene		19.7	ug/L	0.167	0.500	0.500
10061-01-5	cis-1,3-Dichloropropylene		17.7	ug/L	0.167	0.500	0.500
179601-23-1	m,p-Xylenes		40.6	ug/L	0.167	1.00	0.500
104-51-8	n-Butylbenzene		17.1	ug/L	0.167	0.500	0.500
103-65-1	n-Propylbenzene		19.8	ug/L	0.167	0.500	0.500
95-47-6	o-Xylene		19.2	ug/L	0.167	0.500	0.500
135-98-8	sec-Butylbenzene		17.8	ug/L	0.167	0.500	0.500
1634-04-4	tert-Butyl methyl ether		17.9	ug/L	0.167	0.500	0.500
98-06-6	tert-Butylbenzene		16.8	ug/L	0.167	0.500	0.500
156-60-5	trans-1,2-Dichloroethylene		17.8	ug/L	0.167	0.500	0.500
10061-02-6	trans-1,3-Dichloropropylene		18.1	ug/L	0.167	0.500	0.500
96-12-8	1,2-Dibromo-3-chloropropane		17.7	ug/L	0.330	1.00	1.00

Miscellaneous

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

01/08/2019
01/10/2019

Date: 1/7/2019 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42

Daily Instrument Readings:
Multiplier Voltage: 1575

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 1/7/2019

Cl test lot # 64312

Sequence Number: 010719V8

	Daily Standard Solution ID#	Volume Added for Purge (ul) Blk/ Smpl	CCV	MS/ LCS	BFB
IS/SS	IVM170915-03	1	1	1	
ICV[A]	W8VM190107-08			20uL ea.	
BFB	IVM181212-01				1

Purge Amount	
5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
7 Jan 2019 09:32	8E103.D	IVM181212-01	GEL	BFB	5ML	1	PH<2	1	W	PXY1	N/A	O	
7 Jan 2019 10:04	8E104.D	W8VM190107-01	VSTD0005	ICAL	5ML	1	PH<2	2	W	PXY1	N/A	X	MIX[A] UVM181127-04/UVM181228-04B
7 Jan 2019 10:35	8E105.D	W8VM190107-02	VSTD001	ICAL	5ML	1	PH<2	3	W	PXY1	N/A	O	MIX[A] UVM181127-05/UVM181228-05B
7 Jan 2019 11:07	8E106.D	W8VM190107-03	VSTD005	ICAL	5ML	1	PH<2	4	W	PXY1	N/A	O	MIX[A] UVM181127-07/UVM181228-07B
7 Jan 2019 11:38	8E107.D	W8VM190107-04	VSTD010	ICAL	5ML	1	PH<2	5	W	PXY1	N/A	O	MIX[A] UVM181127-08/UVM181228-08B
7 Jan 2019 12:09	8E108.D	W8VM190107-05	VSTD020	ICAL	5ML	1	PH<2	6	W	PXY1	N/A	O	MIX[A] UVM181127-09/UVM181228-09B
7 Jan 2019 12:40	8E109.D	W8VM190107-06	VSTD040	ICAL	5ML	1	PH<2	7	W	PXY1	N/A	O	MIX[A] UVM181127-09/UVM181228-09B
7 Jan 2019 13:11	8E110.D	W8VM190107-07	VSTD050	ICAL	5ML	1	PH<2	8	W	PXY1	N/A	O	MIX[A] UVM181127-09/UVM181228-09B
7 Jan 2019 13:42	8E111.D	BLANK	GEL	BLANK	5ML	1	PH<2	9	W	PXY1	N/A	X	RINSE
7 Jan 2019 14:14	8E112.D	W8VM190107-01	VSTD0005	ICAL	5ML	1	PH<2	10	W	PXY1	N/A	O	MIX[A] UVM181127-04/UVM181228-04B
7 Jan 2019 14:45	8E113.D	W8VM190107-08	ICV	ICV	5ML	1	PH<2	11	W	PXY1	N/A	O	MIX[A] UVM181023-10B/UVM181228-10B

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

02/07/2019

02/08/2019

Date: 1/31/2019 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42

Daily Instrument Readings:
Multiplier Voltage: 1706

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 1/7/2019

Cl test lot # 64312

Sequence Number: 013119V8

Daily Standard	Volume Added for Purge (ul)			
Solution ID#		Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W8VM190131-01			20uL ea.	
IS/SS	IVM170915-03	1	1	1	
LCS/MS	W8VM190131-01			20uL ea.	
BFB	IVM190109-01				1
SHORT			5uL ea.	5uL ea.	

Purge Amount	
5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
1/31/2019 9:54	8H401.D	IVM190109-01	GEL	BFB	5ML	1	N/A	1	W	PXY1	N/A	O	
1/31/2019 10:25	8H403.D	W8VM190131-01	GEL	CCV	5ML	1	PH<2	2	W	PXY1	N/A	O	MIX[A]
1/31/2019 10:57	8H404.D	120420	GEL	BLANK	5ML	1	PH<2	3	W	PXY1	N/A	X	RINSE
1/31/2019 11:28	8H405.D	120420	GEL	BLANK	5ML	1	PH<2	4	W	PXY1	N/A	O	
1/31/2019 12:00	8H406.D	469612006	BRKL	1844461	5ML	1	PH<2	5	W	PXY1	N	O	
1/31/2019 12:31	8H407.D	469622001	BRKL	1844461	5ML	1	PH<2	6	W	PXY1	N	O	
1/31/2019 13:02	8H408.D	469622002	BRKL	1844461	5ML	1	PH<2	7	W	PXY1	N	O	
1/31/2019 13:34	8H409.D	469622003	BRKL	1844461	5ML	1	PH<2	8	W	PXY1	N	O	
1/31/2019 14:05	8H410.D	469622004	BRKL	1844461	5ML	1	PH<2	9	W	PXY1	N	O	
1/31/2019 14:37	8H411.D	469622005	BRKL	1844461	5ML	1	PH<2	10	W	PXY1	N	O	
1/31/2019 15:08	8H412.D	469622006	BRKL	1844461	5ML	1	PH<2	11	W	PXY1	N	O	
1/31/2019 15:40	8H413.D	469622007	BRKL	1844461	5ML	1	PH<2	12	W	PXY1	N	O	
1/31/2019 16:11	8H414.D	469625001	BRKL	1844461	5ML	1	PH<2	13	W	PXY1	N	O	
1/31/2019 16:42	8H415.D	469625002	BRKL	1844461	5ML	1	PH<2	14	W	PXY1	N	O	
1/31/2019 17:13	8H416.D	469625003	BRKL	1844461	5ML	1	PH<2	15	W	PXY1	N	O	
1/31/2019 17:45	8H417.D	469625004	BRKL	1844461	5ML	1	PH<2	16	W	PXY1	N	O	
1/31/2019 18:16	8H418.D	469625005	BRKL	1844461	5ML	1	PH<2	17	W	PXY1	N	O	
1/31/2019 18:47	8H419.D	469625006	BRKL	1844461	5ML	1	PH<2	18	W	PXY1	N	O	
1/31/2019 19:18	8H420.D	469625007	BRKL	1844461	5ML	1	PH<2	19	W	PXY1	N	O	
1/31/2019 19:50	8H421.D	469917001	BRKL	1844461	5ML	1	PH<2	20	W	PXY1	N	O	
1/31/2019 20:21	8H422.D	469673001	BRKL	1845229	5ML	1	PH<2	21	W	PXY1	N	O	
1/31/2019 20:52	8H423.D	1204209918	BRKL	1845229	5ML	1	PH<2	22	W	PXY1	N	O	MIX[A] 469673001PS
1/31/2019 21:23	8H424.D	1204209919	BRKL	1845229	5ML	1	PH<2	23	W	PXY1	N	O	MIX[A] 469673001PSD

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA8

02/07/2019

02/08/2019

Date: 2/1/2019 Method 524.2 Operator: PXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 42

Daily Instrument Readings:
Multiplier Voltage: 1706

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 1/7/2019

Cl test lot # 64312

Sequence Number: 020119V8

Daily Standard	Solution ID#	Volume Added for Purge (ul) Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W8VM190201-01			20uL ea.	
IS/SS	IVM170915-03	1	1	1	
LCS/MS	W8VM190201-01			20uL ea.	
BFB	IVM190109-01				1
SHORT			5uL ea.	5uL ea.	

Purge Amount	
5ML	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable (O/X)	Comments
1 Feb 2019 09:18	8H501.D	IVM190109-01	GEL	BFB	5ML	1	N/A	1	W	PXY1	N/A	O	
1 Feb 2019 09:49	8H503.D	W8VM190201-01	GEL	CCV	5ML	1	PH<2	2	W	PXY1	N/A	O	MIX[A]
1 Feb 2019 10:21	8H504.D	120420	GEL	BLANK	5ML	1	PH<2	3	w	PXY1	N/A	X	RINSE
1 Feb 2019 10:52	8H505.D	120420	GEL	BLANK	5ML	1	PH<2	4	w	PXY1	N/A	O	
1 Feb 2019 11:24	8H506.D	469673002	BRKL	1845229	5ML	1	PH<2	5	w	PXY1	N	O	
1 Feb 2019 11:55	8H507.D	469673003	BRKL	1845229	5ML	1	PH<2	6	w	PXY1	N	O	
1 Feb 2019 12:26	8H508.D	469673004	BRKL	1845229	5ML	1	PH<2	7	w	PXY1	N	O	
1 Feb 2019 12:57	8H509.D	469673005	BRKL	1845229	5ML	1	PH<2	8	w	PXY1	N	O	
1 Feb 2019 13:28	8H510.D	469673006	BRKL	1845229	5ML	1	PH<2	9	w	PXY1	N	O	
1 Feb 2019 14:00	8H511.D	469673007	BRKL	1845229	5ML	1	PH<2	10	w	PXY1	N	O	
1 Feb 2019 14:31	8H512.D	469833001	BRKL	1845229	5ML	1	PH<2	11	w	PXY1	N	O	
1 Feb 2019 15:03	8H513.D	469833002	BRKL	1845229	5ML	1	PH<2	12	w	PXY1	N	O	
1 Feb 2019 15:34	8H514.D	469833003	BRKL	1845229	5ML	1	PH<2	13	w	PXY1	N	O	
1 Feb 2019 16:05	8H515.D	469916001	BRKL	1845229	5ML	1	PH<2	14	w	PXY1	N	O	
1 Feb 2019 16:37	8H516.D	469916002	BRKL	1845229	5ML	1	PH<2	15	w	PXY1	N	O	
1 Feb 2019 17:08	8H517.D	469916003	BRKL	1845229	5ML	1	PH<2	16	w	PXY1	N	O	
1 Feb 2019 17:39	8H518.D	469916004	BRKL	1845229	5ML	1	PH<2	17	w	PXY1	N	O	
1 Feb 2019 18:11	8H519.D	469918001	BRKL	1845229	5ML	1	PH<2	18	w	PXY1	N	O	
1 Feb 2019 18:42	8H520.D	469919001	BRKL	1845229	5ML	1	PH<2	19	w	PXY1	N	O	
1 Feb 2019 19:13	8H521.D	470000001	BRKL	1845229	5ML	1	PH<2	20	w	PXY1	N	O	
1 Feb 2019 19:45	8H522.D	470000002	BRKL	1845229	5ML	1	PH<2	21	w	PXY1	N	O	
1 Feb 2019 20:16	8H523.D	470197001	BRKL	1845619	5ML	1	PH<2	22	w	PXY1	N	O	
1 Feb 2019 20:47	8H524.D	470197002	BRKL	1845619	5ML	1	PH<2	23	w	PXY1	N	O	
1 Feb 2019 21:18	8H525.D	470197003	BRKL	1845619	5ML	1	PH<2	24	w	PXY1	N	O	