November 30, 2016 Service Request No:R1611762

Dennis Tabor
US Environmental Protection Agency (E-343-03)
Office of Research and Development
National Risk Management Research
Laboratory
109 T.W. Alexander Drive
Research Triangle Park, NC 27711

Laboratory Results for: US EPA RTP, NC

Dear Dennis,

Enclosed are the results of the sample(s) submitted to our laboratory October 28, 2016
For your reference, these analyses have been assigned our service request number **R1611762.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7478. You may also contact me via email at Ellen.Smith@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Ellen Smith
Project Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

1565 Jefferson Rd, Building 300, Rochester, NY 14623 | 585-288-5380 | www.alsglobal.com

ALS Environmental

Client: US Environmental Protection Agency (EPA)
Project: US EPA RTP, NC
Sample Matrix: Filter

Service Request: R1611762
Date Received: 10/28/16

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables, including results of QC samples analyzed from this delivery group. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Any parameters that are not included in the lab's NELAC accreditation are identified on a "Non-Certified Analytes" report in the Miscellaneous Forms Section of this report. Individual analytical results requiring further explanation are flagged with qualifiers and/or discussed below. The flags are explained in the Report Qualifiers and Definitions page in the Miscellaneous Forms section of this report.

Sample Receipt

Fourteen filter samples were received for analysis at ALS Environmental on 10/28/2016. Any discrepancies noted upon initial sample inspection are noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at ≤6°C upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

Semi-Volatile Organic Analyses:

No significant anomalies were noted with this analysis.

General Chemistry Analyses:

No significant anomalies were noted with this analysis.

Sample Receiving Notes:

Method 6850, One or more samples were received past the recommended holding time which is 28 days. Analysis was completed 2 days out of hold time and the customer was notified when the discrepancy was found. The analysis was performed as soon as possible after receipt by the laboratory. The data is flagged to indicate the holding time violation.

Approved by _____ Date 11/30/2016

SAMPLE DETECTION SUMMARY

CLIENT ID: PS-SW-HCI-092816-01 2-Bottom **Lab ID: R1611762-002**

Analyte	Results	Flag	MDL	PQL	Units	Method
Chloride	11.4		5.2	6.0	ug/Filter	300.0

CLIENT ID: PS-SW-HCI-092816-02 2-Bottom **Lab ID: R1611762-004**

Analyte	Results	Flag	MDL	PQL	Units	Method
Chloride	11.0		5.2	6.0	ug/Filter	300.0

CLIENT ID: PS-SW-HCI-100416-01 2-Bottom **Lab ID: R1611762-008**

Analyte	Results	Flag	MDL	PQL	Units	Method
Chloride	9.4		5.2	6.0	ug/Filter	300.0

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1611762-001	PS-SW-HCl-092816-01 1-Topp	9/28/2016	
R1611762-002	PS-SW-HCl-092816-01 2-Bottom	9/28/2016	
R1611762-003	PS-SW-HCl-092816-02 1-Topp	9/28/2016	
R1611762-004	PS-SW-HCl-092816-02 2-Bottom	9/28/2016	
R1611762-005	PS-SW-HCl-092816-03 1-Topp	9/28/2016	
R1611762-006	PS-SW-HCl-092816-03 2-Bottom	9/28/2016	
R1611762-007	PS-SW-HCl-100416-01 1-Topp	10/4/2016	
R1611762-008	PS-SW-HCl-100416-01 2-Bottom	10/4/2016	
R1611762-009	PS-SW-HCl-100416-02 1-Topp	10/4/2016	
R1611762-010	PS-SW-HCl-100416-02 2-Bottom	10/4/2016	
R1611762-011	PS-SW-HCl-100416-03 1-Topp	10/4/2016	
R1611762-012	PS-SW-HCl-100416-03 2-Bottom	10/4/2016	
R1611762-013	BS-HCl-100416 1-Topp	10/4/2016	
R1611762-014	BS-HCl-100416 2-Bottom	10/4/2016	

Lab Work Order #

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

SAMPLERS:

Requested Analyses

SAMPLE ID	DATE	TIME	MATRIX	Burn #	Filter #	1	2	3	4	5	6	7	8	9	10	Remarks
PS-SW-HCl-092816-01	9/28/2016		Skid waste	1	Cassette 1											
					1-Topp	x	x									
					2-Bottom			x								
PS-SW-HCl-092816-02	9/28/2016		Skid waste	2	Cassette 2											
					1-Topp	x	x									
					2-Bottom			x								
PS-SW-HCl-092816-03	9/28/2016		Skid waste	3	Cassette 3											
					1-Topp	x	x									
					2-Bottom			x								
PS-SW-HCl-100416-01	10/4/2016		Skid waste	1	Cassette 4											
					1-Topp	x	x									
					2-Bottom			x								
PS-SW-HCl-100416-01	10/4/2016		Skid waste	2	Cassette 5											
					1-Topp	x	x									
					2-Bottom			x								

Requested Analyses	
1	Perchlorate
2	Chlorate
3	Chloride
4	
5	
6	
7	

Special Instructions/Comments:

☐ **Special QA/QC Instructions**

Laboratory Information and Receipt

Lab Name:

Shipping Tracking #

Specify Turnaround Requirements:

☐ Cooler packed with ice

☐ Cooler custody seal intact

Sample Receipt:

Condition/Cooler Temp:

Relinquished by:	DATE	TIME	Received by:	Relinquished by:	DATE	TIME	Received by:
John Bell	10/11/2016	13:00	10-28 0930				
Relinquished by:	**DATE**	**TIME**	**Received by:**	**Relinquished by:**			

R1611762 5
US Environmental Protection Agency (E-343-03)
US EPA RTP, NC

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #

SAMPLERS:

Requested Analyses

SAMPLE ID	DATE	TIME	MATRIX	Burn #	Filter #	1	2	3	4	5	6	7	8	9	10	Remarks
PS-SW-HCl-100416-01	10/4/2016		Skid waste	3	Cassette 6											
					1-Topp	X	X									
					2-Bottom			X								
BS-HCl-100416	10/4/2016		Ambient	Ambient	Cassette 8											
					1-Topp	X	X									
					2-Bottom			X								

Requested Analyses	
1	Perchlorate
2	Chlorate
3	Chloride
4	
5	
6	
7	

Special Instructions/Comments:

☐ Special QA/QC Instructions

Laboratory Information and Receipt

Lab Name:

Shipping Tracking #

Specify Turnaround Requirements:

☐ Cooler packed with ice

☐ Cooler custody seal intact

Sample Receipt:

Condition/Cooler Temp:

Relinquished by:	DATE	TIME	Received by:	Relinquished by:	DATE	TIME	Received by:
			10-28 0930				
Relinquished by:	DATE	TIME	Received by:	Relinquished by:			

R1611762 5

US Environmental Protection Agency (E-343-03)
US EPA RTP, NC

R1611762 5
US Environmental Protection Agency (E-343-03)
US EPA RTP, NC

Cooler Receipt and Preservation Check Form

Project/Client US EPA Folder Number_____.

Cooler received on 10-28 by: T.S **COURIER:** ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y N	5a	**Perchlorate** samples have required headspace?	Y N NA
2	**Custody papers** properly completed (ink, signed)?	Y N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y N NA
3	Did all bottles arrive in good **condition** (unbroken)?	Y N	6	Where did the bottles originate? ALS/ROC	CLIENT
4	Circle: **Wet Ice Dry Ice Gel packs** present?	Y N	7	Soil VOA received as: Bulk Encore 5035set	NA

8. Temperature Readings Date: 10-25-16 Time: 0440 ID: IR#7 IR#8 From: Temp Blank Sample Bottle

Observed Temp (°C)	7.4						
Correction Factor (°C)	0						
Corrected Temp (°C)	7.4						
Within 0-6°C?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____Ice melted Poorly Packed Same Day Rule

&Client Approval to Run Samples:_____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R002 by TS on 10-25-16 at 0440
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown: Date : 11/7/16 Time: 1100 by: @

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO N/A
5. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: Client
Other Comments:

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Environmental

REPORT QUALIFIERS AND DEFINITIONS

U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.

J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).

B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.

E Organics- Concentration has exceeded the calibration range for that specific analysis.

D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.

* Indicates that a quality control parameter has exceeded laboratory limits. Under the Notes column of the Form I, this qualifier denotes analysis was performed out of Holding Time.

H Analysis was performed out of hold time for tests that have an immediate hold time criteria.

Spike was diluted out.

+ Correlation coefficient for MSA is <0.995.

N Inorganics- Matrix spike recovery was outside laboratory limits.

N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.

S Concentration has been determined using Method of Standard Additions (MSA).

W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.

P Concentration >40% (25% for CLP) difference between the two GC columns.

C Confirmed by GC/MS

Q DoD reports: indicates a pesticide/Aroclor is not confirmed ("e100% Difference between two GC columns).

X See Case Narrative for discussion.

MRL Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.

MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).

LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.

ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

ACCREDITED IN ACCORDANCE WITH nelac

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID # 294100 A/B
Delaware Accredited	Nebraska Accredited	
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

[1] Analyses were performed according to our laboratory s NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ED_001349_00001081-00012

Client: US Environmental Protection Agency (EPA) **Service Request:** R1611762
Project: US EPA RTP, NC

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
300.0	Filter	Chloride
6850	Filter	Chlorate
6850	Filter	Perchlorate

Client: US Environmental Protection Agency (EPA) **Service Request:** R1611762
Project: US EPA RTP, NC

Sample Name: PS-SW-HCl-092816-01 1-Topp **Date Collected:** 09/28/16
Lab Code: R1611762-001 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
6850	MPEDRO	MPEDRO

Sample Name: PS-SW-HCl-092816-01 2-Bottom **Date Collected:** 09/28/16
Lab Code: R1611762-002 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
300.0	CWOODS	CWOODS

Sample Name: PS-SW-HCl-092816-02 1-Topp **Date Collected:** 09/28/16
Lab Code: R1611762-003 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
6850	MPEDRO	MPEDRO

Sample Name: PS-SW-HCl-092816-02 2-Bottom **Date Collected:** 09/28/16
Lab Code: R1611762-004 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
300.0	CWOODS	CWOODS

Sample Name: PS-SW-HCl-092816-03 1-Topp **Date Collected:** 09/28/16
Lab Code: R1611762-005 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
6850	MPEDRO	MPEDRO

Client: US Environmental Protection Agency (EPA) **Service Request:** R1611762
Project: US EPA RTP, NC

Sample Name: PS-SW-HCl-092816-03 2-Bottom **Date Collected:** 09/28/16
Lab Code: R1611762-006 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
300.0	CWOODS	CWOODS

Sample Name: PS-SW-HCl-100416-01 1-Topp **Date Collected:** 10/4/16
Lab Code: R1611762-007 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
6850	MPEDRO	MPEDRO

Sample Name: PS-SW-HCl-100416-01 2-Bottom **Date Collected:** 10/4/16
Lab Code: R1611762-008 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
300.0	CWOODS	CWOODS

Sample Name: PS-SW-HCl-100416-02 1-Topp **Date Collected:** 10/4/16
Lab Code: R1611762-009 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
6850	MPEDRO	MPEDRO

Sample Name: PS-SW-HCl-100416-02 2-Bottom **Date Collected:** 10/4/16
Lab Code: R1611762-010 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
300.0	CWOODS	CWOODS

Client: US Environmental Protection Agency (EPA) **Service Request:** R1611762
Project: US EPA RTP, NC

Sample Name: PS-SW-HCl-100416-03 1-Topp **Date Collected:** 10/4/16
Lab Code: R1611762-011 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
6850	MPEDRO	MPEDRO

Sample Name: PS-SW-HCl-100416-03 2-Bottom **Date Collected:** 10/4/16
Lab Code: R1611762-012 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
300.0	CWOODS	CWOODS

Sample Name: BS-HCl-100416 1-Topp **Date Collected:** 10/4/16
Lab Code: R1611762-013 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
6850	MPEDRO	MPEDRO

Sample Name: BS-HCl-100416 2-Bottom **Date Collected:** 10/4/16
Lab Code: R1611762-014 **Date Received:** 10/28/16
Sample Matrix: Filter

Analysis Method	Extracted/Digested By	Analyzed By
300.0	CWOODS	CWOODS

INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	09/28/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	PS-SW-HCl-092816-01 1-Topp	**Units:**	ug/Filter
Lab Code:	R1611762-001	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chlorate	0.0040 U	0.0040	1	11/09/16 10:57	11/8/16	*
Perchlorate	0.0040 U	0.0040	1	11/09/16 10:57	11/8/16	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	09/28/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	PS-SW-HCl-092816-02 1-Topp	**Units:**	ug/Filter
Lab Code:	R1611762-003	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chlorate	0.0040 U	0.0040	1	11/09/16 11:12	11/8/16	*
Perchlorate	0.0040 U	0.0040	1	11/09/16 11:12	11/8/16	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	09/28/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	PS-SW-HCl-092816-03 1-Topp	**Units:**	ug/Filter
Lab Code:	R1611762-005	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chlorate	0.0040 U	0.0040	1	11/09/16 11:26	11/8/16	*
Perchlorate	0.0040 U	0.0040	1	11/09/16 11:26	11/8/16	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	10/04/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	PS-SW-HCl-100416-01 1-Topp	**Units:**	ug/Filter
Lab Code:	R1611762-007	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chlorate	0.0040 U	0.0040	1	11/09/16 11:41	11/8/16	*
Perchlorate	0.0040 U	0.0040	1	11/09/16 11:41	11/8/16	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	10/04/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	PS-SW-HCl-100416-02 1-Topp	**Units:**	ug/Filter
Lab Code:	R1611762-009	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chlorate	0.0040 U	0.0040	1	11/09/16 16:59	11/8/16	*
Perchlorate	0.0040 U	0.0040	1	11/09/16 16:59	11/8/16	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	10/04/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	PS-SW-HCl-100416-03 1-Topp	**Units:**	ug/Filter
Lab Code:	R1611762-011	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chlorate	0.0040 U	0.0040	1	11/09/16 12:41	11/8/16	*
Perchlorate	0.0040 U	0.0040	1	11/09/16 12:41	11/8/16	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	10/04/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	BS-HCl-100416 1-Topp	**Units:**	ug/Filter
Lab Code:	R1611762-013	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chlorate	0.0040 U	0.0040	1	11/09/16 12:55	11/8/16	*
Perchlorate	0.0040 U	0.0040	1	11/09/16 12:55	11/8/16	*

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	09/28/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	PS-SW-HCl-092816-01 2-Bottom	**Basis:**	As Received
Lab Code:	R1611762-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chloride	300.0	**11.4**	ug/Filter	6.0	1	11/21/16 19:44	11/21/16	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	09/28/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	PS-SW-HCl-092816-02 2-Bottom	**Basis:**	As Received
Lab Code:	R1611762-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chloride	300.0	**11.0**	ug/Filter	6.0	1	11/21/16 19:57	11/21/16	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	09/28/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	PS-SW-HCl-092816-03 2-Bottom	**Basis:**	As Received
Lab Code:	R1611762-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chloride	300.0	6.0 U	ug/Filter	6.0	1	11/21/16 20:10	11/21/16	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	10/04/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	PS-SW-HCl-100416-01 2-Bottom	**Basis:**	As Received
Lab Code:	R1611762-008		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chloride	300.0	**9.4**	ug/Filter	6.0	1	11/21/16 20:49	11/21/16	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	10/04/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	PS-SW-HCl-100416-02 2-Bottom	**Basis:**	As Received
Lab Code:	R1611762-010		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chloride	300.0	6.0 U	ug/Filter	6.0	1	11/21/16 21:02	11/21/16	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	10/04/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	PS-SW-HCl-100416-03 2-Bottom	**Basis:**	As Received
Lab Code:	R1611762-012		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chloride	300.0	6.0 U	ug/Filter	6.0	1	11/21/16 21:15	11/21/16	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	10/04/16
Sample Matrix:	Filter	**Date Received:**	10/28/16 09:30
Sample Name:	BS-HCl-100416 2-Bottom	**Basis:**	As Received
Lab Code:	R1611762-014		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chloride	300.0	6.0 U	ug/Filter	6.0	1	11/21/16 21:28	11/21/16	*

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	NA
Sample Matrix:	Filter	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Filter
Lab Code:	RQ1613608-01	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chlorate	0.0040 U	0.0040	1	11/09/16 09:44	11/8/16	
Perchlorate	0.0040 U	0.0040	1	11/09/16 09:44	11/8/16	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: US Environmental Protection Agency (EPA)
Project: US EPA RTP, NC
Sample Matrix: Filter

Service Request: R1611762
Date Analyzed: 11/09/16

Duplicate Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Units: ug/Filter
Basis: As Received

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1613608-02			RQ1613608-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chlorate	6850	0.00460	0.00400	115	0.00440	0.00400	110	80-120	4	15
Perchlorate	6850	0.00400	0.00400	100	0.00380 J	0.00400	95	80-120	5	15

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	US Environmental Protection Agency (EPA)	**Service Request:**	R1611762
Project:	US EPA RTP, NC	**Date Collected:**	NA
Sample Matrix:	Filter	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	As Received
Lab Code:	R1611762-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chloride	300.0	6.0 U	ug/Filter	6.0	1	11/21/16 14:15	11/21/16	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: US Environmental Protection Agency (EPA)
Project: US EPA RTP, NC
Sample Matrix: Filter

Service Request: R1611762
Date Analyzed: 11/21/16

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Units: ug/Filter
Basis: As Received

			Lab Control Sample R1611762-LCS			Duplicate Lab Control Sample R1611762-DLCS				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	300.0	42.9	40.0	107	43.0	40.0	108	90-110	<1	30