eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Integral Consulting Inc.
Suite 190
285 Century Place
Louisville CO 80027

Report Date: November 15, 2016

Project: Solvay

Submittal Date: 10/14/2016
Group Number: 1721309
State of Sample Origin: NJ

Client Sample Description	Lancaster Labs (LL) #
V915 Grab Wastewater	8644953
Field Blank Grab Water	8644954

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To	Solvay	Attn: Mitch Gertz
Electronic Copy To	Solvay	Attn: Mark Christensen
Electronic Copy To	Integral Consulting Inc.	Attn: Erin Palko
Electronic Copy To	Integral Consulting Inc.	Attn: Craig Hutchings

Respectfully Submitted,

Stacy L. Hess
Project Manager

(717) 556-7236

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Lancaster Laboratories
Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: V915 Grab Wastewater
Solvay

LL Sample # WW 8644953
LL Group # 1721309
Account # 20003

Project Name: Solvay

Collected: 10/12/2016 15:30 by MC

Submitted: 10/14/2016 09:30
Reported: 11/15/2016 12:26

Integral Consulting Inc.
Suite 190
285 Century Place
Louisville CO 80027

Sample Comments

State of New Jersey Lab Certification No. PA011

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Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: Field Blank Grab Water
Solvay

LL Sample # WW 8644954
LL Group # 1721309
Account # 20003

Project Name: Solvay

Collected: 10/12/2016 15:30 by MC

Submitted: 10/14/2016 09:30
Reported: 11/15/2016 12:26

Integral Consulting Inc.
Suite 190
285 Century Place
Louisville CO 80027

Sample Comments

State of New Jersey Lab Certification No. PA011

Environmental Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only
Acct. # 20003 Group # 1721309 Sample # 8644953-54

COC # 512591

Client Information

Client: Solvay
Acct. #:
Project Name/#:
PWSID #:
Project Manager:
P.O. #:
Sampler: Mark Christensen
Quote #:
State where samples were collected: VA
For Compliance: Yes ☒ No ☐

Matrix: Soil ☐ Sediment ☐ Tissue ☐ Potable ☐ Ground ☐ Water ☐ NPDES ☒ Surface ☐ Other: ____

Analysis Requested — Preservation Codes: O

Sample Identification	Collected Date	Collected Time	Grab	Composite	Matrix	Total # of Containers	PFAA
VA15	10/12/16	1530	X		WW	2	X
Field Blank	10/12/16	1530	X		FB	1	X

For Lab Use Only
FSC:
SCR#: 195958

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Remarks
O = Trizma

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed: ____

E-mail address: ____

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Bottle Storage	10/12/16	1700	[signature]	10/12/16	1500
[signature]	10/13/16	1500			
			Cathy Murphy	10/14/16	9:30

EDD Required? Yes No
If yes, format: ____
Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS ____ FedEx X Other ____
Temperature upon receipt 2.7 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0216

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Sample Administration Receipt Documentation Log

Doc Log ID: 165305

Group Number(s): 1721309

Client: Solray

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	10/14/2016 9:30
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Cathy Murphy (10960) at 15:34 on 10/14/2016

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	2.2	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

ilac-MRA

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
AT-1807

Laboratory Report

for

Eurofins Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17601
Attention: Kathy Binkley

Date of Issue
11/14/2016
EUROFINS EATON ANALYTICAL

NELAP ACCREDITED TNI LABORATORY
ORELAP 4034

Report: 618473
Project: PFC
Group: Long list PFCs

DST: David S Tripp
Project Manager

* Accredited in accordance with TNI 2009 and ISO/IEC 17025:2005.
* Laboratory certifies that the test results meet all **TNI 2009 and ISO/IEC 17025:2005** requirements unless noted under the individual analysis.
* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.
* Test results relate only to the sample(s) tested.
* This report shall not be reproduced except in full, without the written approval of the laboratory.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	**Mississippi**	Certified
----------	--------	**Montana**	Cert 0035
Arizona	AZ0778	**Nebraska**	Certified
Arkansas	Certified	**Nevada**	CA00006-2016
California-Monrovia-ELAP	2813	**New Hampshire ***	2959
California-Colton- ELAP	2812	**New Jersey ***	CA 008
California-Folsom- ELAP	2820	**New Mexico**	Certified
California-Fresno- ELAP	2966	**New York ***	11320
Colorado	Certified	**North Carolina**	06701
Connecticut	PH-0107	**North Dakota**	R-009
Delaware	CA 006	**Oregon (Primary AB) ***	**ORELAP 4034**
Florida *	E871024	**Pennsylvania ***	68-565
Georgia	947	**Puerto Rico**	Certified
Guam	16-003r	**Rhode Island**	LAO00326
Hawaii	Certified	**South Carolina**	87016
Idaho	Certified	**South Dakota**	Certified
Illinois *	200033	**Tennessee**	TN02839
Indiana	C-CA-01	**Texas ***	T104704230-15-9
Kansas *	E-10268	**Utah ***	CA000062016-10
Kentucky	90107	**Vermont**	VT0114
Louisiana *	LA16003	**Virginia ***	460260
Maine	CA0006	**Washington**	C838
Maryland	224	**----------**	**----------**
Commonwealth of Northern Marianas Is.	MP0004	**----------**	**----------**
Massachusetts	M-CA006	**EPA Region 5**	Certified
Michigan	9906	**Los Angeles County Sanitation Districts**	10264

* NELAP/TNI Recognized Accreditation Bodies

The tests listed below are accredited and meet the requirements of ISO 17025 as verified by the ANSI-ASQ National Accreditation Board/ANAB.
Refer to Certificate and scope of accreditation (AT 1807) found at: http://www.eatonanalytical.com

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
Bicarbonate Alkalinity as HCO3	SM 2320B	x	x	x
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cryptosporidium	EPA 1623	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Giardia	EPA 1623	x		x
Glyphosate	EPA 547	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	CDC Legionella	x		x
Mercury	EPA 245.1	x	x	x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
NDMA	EPA 521	x		x
NDMA	TQ In house method based on EPA 521 (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphate	SM 4500P E			x
Ortho Phosphorous	SM 4500P E	x		
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Semi-VOC	EPA 625		x	x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-$S^{=}$ D		x	
Sulfite	SM 4500-SO^3B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2/EPA 524.3	x		x
VOC	EPA 624		x	x
VOC	EPA SW 846 8260	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x

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Acknowledgement of Samples Received

Addr: **Eurofins Lancaster Laboratories**
2425 New Holland Pike
Lancaster, PA 17601

Client ID: EUROFINS-PA
Folder #: 618473
Project: PFC
Sample Group: Long list PFCs

Attn: Kathy Binkley
Phone: 717-656-2300

Project Manager: David S Tripp
Phone: (626) 386-1158

The following samples were received from you on **October 21, 2016** at **16:09**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical.

Sample #	Sample ID	Sample Date
201610210309	V915 Grab Wastewater	10/12/2016 1530
	Variable ID: 8644953	
	@537	
201610210310	Field Blank Grab Water	10/12/2016 1530
	Variable ID: 8644954	
	@537	

Test Description

@537 -- Perfluorinated Alkyl Acids

Analysis Request / Environmental Services Subcontracting Form

eurofins | Lancaster Laboratories

For Lancaster Laboratories Use Only

Acct: _____ Group No.: 1721309 Sample Nos.: 8644953-54

Date: 10/20/16

618473
~~618494~~ 8/10/24/16
CD

Subcontractor: EUROFINS EATON ANALYTICAL

LLI P.O.# : _____ Courier: Fed Ex

Submit report to: Kathy Binkley Ext.: 1393

Submit invoice to: Kathy Binkley

State where samples were collected: NJ

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (☐ Potable ☐ NPDES)	EPA Type	Total # of Containers	Analyses Requested / Preservation Codes: PFCs by EPA 537											Temperature of samples upon receipt (if requested)	Comments: Please see the attached compound list.
V915 Grab Wastewater	10/12/16	15;30	X			X		2	X												8644953
Field Blank Grab Water	10/12/16	15:30	X			X		1	X												8644954

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Turnaround Time Requested (TAT): (Standard) Rush

Date Results are Needed:

Email Results to: KathyBinkley@EurofinsUS.com

Data Package Options (circled when required)
Type I (validation/NJ Reg) Type VI(Raw Data)
Type II (Tier II) Type III (Reduced NJ)
Type IV (CLP SOW) TX TRRP-13

SDG Complete? Yes No

MA MCP
CT RCP

Site-specific QC Required (MS/MSD/DUP)? Yes No
Internal Chain of Custody Required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
Kathy Binkley	10-20-16	1546	[illegible]	10-20-16	1135

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Compound	CAS Number
Perfluoro-octanesulfonate	1763-23-1
Perfluorobutanesulfonate	375-73-5
Perfluorodecanoic acid	335-76-2
Perfluorododecanoic acid	307-55-1
Perfluoroheptanoic acid	375-85-9
Perfluorohexanesulfonate	355-46-4
Perfluorohexanoic acid	307-24-4
Perfluorononanoic acid	375-95-1
Perfluorooctanoic acid	335-67-1
Perfluorotetradecanoic acid	376-06-7
Perfluorotridecanoic acid	72629-94-8
Perfluoroundecanoic acid	2058-94-8

Reporting limits are evaluated annually and are subject to change.

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INTERNAL CHAIN OF CUSTODY RECORD

COMPANY NAME / EEA CLIENT CODE:	PROJECT CODE:

SAMPLES REC'D DAY OF COLLECTION? ☐

SAMPLE TEMP. RECEIVED:

IR Gun ID = 461A (Observation= 4.1 °C) (Corr.Factor -0.3 °C) (Final = 3.8 °C)

TYPE OF ICE: Real ✓ Synthetic ____ No Ice ____ CONDITION OF ICE: Frozen ____ Partially Frozen ✓ Thawed ____ N/A ____

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: ____

Compliance Acceptance Criteria:

1) Chemistry: >0, ≤6°C, not frozen (NELAP) (if received after 24 hrs of sample collection)

2) Microbiology, Distribution: < 10°C, not frozen (can be ≥10°C if received on ice the same day as sample collection, within 8 hours)

3) Microbiology, Surface Water: < 10°C (if received after 2 hours of sample collection)

If out of temperature range for both Chemistry and Microbiology samples and temperature does not confirm, then measure the temperature of each quadrant and record each temperature of the quadrants

1 = (Observation= ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)	2 = (Observation= ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)
3 = (Observation= ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)	4 = (Observation= ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)

4) UCMR3: (non-GLEC) 524.3: (Observation= ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)

522: (Observation= ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)

≤10°C if received within 48 hours of sample collection (not the same business day); ≤ 6°C if received after 48 hours of sample collection. Measure temperature for each method above.

5) LT2: Giardia / Cryptosporidium: <20 °C, not frozen (received after 8 hours of sample collection)

E. Coli: < 10°C, not frozen (if received after 2 hours of sample collection)

Giardia/Crypto: (Observation= ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)

E.Coli: (Observation= ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)

6) Dioxin (1613 or 2,3,7,8-TCDD): must be between 0-4 °C, not frozen (if received after 24 hrs of sample collection)

TRK# 0201 5035 4242 5306

Note: If samples are out of temperature range, let the ASMs know. ASMs will determine whether to proceed with analysis or not.

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RECEIVED BY:	[signature]	Jo Sep	Eurofins Eaton Analytical	10/21/16	1137

Page ____ of ____

QA FO 0083.3 (QA FO-FRM3504) (03/30/16) Ver 4

eurofins | Eaton Analytical

Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Comments
Report: 618473

Eurofins Lancaster Laboratories
Kathy Binkley
2425 New Holland Pike
Lancaster, PA 17601

Folder Comments

Moved sample from folder #: 618199 to be logged under correct client ID. IVC 102416.

Flags Legend:

ID - CCV Internal Standard recovery was below laboratory and method limits.

The Comments Report may be blank if there are no comments for this report.

eurofins | Eaton Analytical

Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Hits
Report: 618473

Eurofins Lancaster Laboratories
Kathy Binkley
2425 New Holland Pike
Lancaster, PA 17601

Samples Received on:
10/21/2016 16:09

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	201610210309	**V915 Grab Wastewater**				
11/03/2016 08:13	Perfluorodecanoic acid		0.029		ug/L	0.003
11/03/2016 08:13	Perfluoroheptanoic acid		0.072		ug/L	0.003
11/03/2016 08:13	Perfluorohexanoic acid		0.032		ug/L	0.003
11/03/2016 07:08	Perfluorononanoic acid		4.7		ug/L	0.3
11/03/2016 08:13	Perfluorooctanesulfonic acid		0.0044		ug/L	0.003
11/03/2016 07:51	Perfluorooctanoic acid		0.65		ug/L	0.03
11/03/2016 07:51	Perfluoroundecanoic acid		0.059		ug/L	0.03

SUMMARY OF POSITIVE DATA ONLY

eurofins | Eaton Analytical

Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Data
Report: 618473

Eurofins Lancaster Laboratories
Kathy Binkley
2425 New Holland Pike
Lancaster, PA 17601

Samples Received on:
10/21/2016 16:09

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
V915 Grab Wastewater (201610210309)						**Sampled on 10/12/2016 1530**			
Variable ID: 8644953									
EPA 537 - Perfluorinated Alkyl Acids									
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorobutanesulfonic acid	ND	ug/L	0.003	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorodecanoic acid	0.029	ug/L	0.003	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorododecanoic acid	ND	ug/L	0.003	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluoroheptanoic acid	0.072	ug/L	0.003	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorohexanesulfonic acid	ND	ug/L	0.003	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorohexanoic acid	0.032	ug/L	0.003	1
10/26/16	11/03/16 07:08	944833	946420	(EPA 537)	Perfluorononanoic acid	4.7	ug/L	0.3	100
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorooctanesulfonic acid	0.0044	ug/L	0.003	1
10/26/16	11/03/16 07:51	944833	946420	(EPA 537)	Perfluorooctanoic acid	0.65	ug/L	0.03	10
10/26/16	11/05/16 06:59	944833	947261	(EPA 537)	Perfluorotetradecanoic acid	ND	ug/L	0.0025	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorotridecanoic acid	ND	ug/L	0.003	1
10/26/16	11/03/16 07:51	944833	946420	(EPA 537)	Perfluoroundecanoic acid	0.059	ug/L	0.03	10
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	13C-PFDA	123	%		1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	13C-PFHxA	113	%		1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	13C-PFOA	70	%		1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	13C-PFOS	56 (ID)	%		1
Field Blank Grab Water (201610210310)						**Sampled on 10/12/2016 1530**			
Variable ID: 8644954									
EPA 537 - Perfluorinated Alkyl Acids									
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorobutanesulfonic acid	ND	ug/L	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorodecanoic acid	ND	ug/L	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorododecanoic acid	ND	ug/L	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluoroheptanoic acid	ND	ug/L	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorohexanesulfonic acid	ND	ug/L	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorohexanoic acid	ND	ug/L	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorononanoic acid	ND	ug/L	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorooctanesulfonic acid	ND	ug/L	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorooctanoic acid	ND	ug/L	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorotetradecanoic acid	ND	ug/L	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorotridecanoic acid	ND	ug/L	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluoroundecanoic acid	ND	ug/L	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	13C-PFDA	127	%		1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	13C-PFHxA	92	%		1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	13C-PFOA	106	%		1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	13C-PFOS	104	%		1

Rounding on totals after summation.
(c) - indicates calculated results

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Laboratory Data
Report: 618473

Eurofins Lancaster Laboratories
Kathy Binkley
2425 New Holland Pike
Lancaster, PA 17601

Samples Received on:
10/21/2016 16:09

V915 Grab Wastewater (201610210309) **Sampled on 10/12/2016 1530**

Variable ID: 8644953

EPA 537 - Perfluorinated Alkyl Acids

Prepared	Analyzed	Prep Batch	Analyzed Batch	Method	Analyte	Result	Units	MDL	MRL	Dilution
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorobutanesulfonic acid	0.0014J	ug/L	0.00073	0.0030	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorodecanoic acid	0.029	ug/L	0.00028	0.0030	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorododecanoic acid	ND	ug/L	0.00064	0.0030	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluoroheptanoic acid	0.072	ug/L	0.00036	0.0030	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorohexanesulfonic acid	0.0020J	ug/L	0.00046	0.0030	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorohexanoic acid	0.032	ug/L	0.00039	0.0030	1
10/26/16	11/03/16 07:08	944833	946420	(EPA 537)	Perfluorononanoic acid	4.7	ug/L	0.035	0.30	100
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorooctanesulfonic acid	0.0044	ug/L	0.00020	0.0030	1
10/26/16	11/03/16 07:51	944833	946420	(EPA 537)	Perfluorooctanoic acid	0.65	ug/L	0.0023	0.030	10
10/26/16	11/05/16 06:59	944833	947261	(EPA 537)	Perfluorotetradecanoic acid	ND	ug/L	0.0014	0.0025	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	Perfluorotridecanoic acid	ND	ug/L	0.00083	0.0030	1
10/26/16	11/03/16 07:51	944833	946420	(EPA 537)	Perfluoroundecanoic acid	0.059	ug/L	0.0044	0.030	10
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	13C-PFDA	123	%		130	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	13C-PFHxA	113	%		130	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	13C-PFOA	70	%		150	1
10/26/16	11/03/16 08:13	944833	946420	(EPA 537)	13C-PFOS	56 (ID)	%		150	1

Rounding on totals after summation.
(c) - Indicates calculated results.
ND - Analyte was not detected at the calculated MDL.
J - The analyte was either detected at or greater than the MDL and less than the MRL, or did not meet any one of the required QC criteria.

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Laboratory Data
Report: 618473

Eurofins Lancaster Laboratories
Kathy Binkley
2425 New Holland Pike
Lancaster, PA 17601

Samples Received on:
10/21/2016 16:09

Field Blank Grab Water (201610210310) **Sampled on 10/12/2016 1530**

Variable ID: 8644954

EPA 537 - Perfluorinated Alkyl Acids

Prepared	Analyzed	Prep Batch	Analyzed Batch	Method	Analyte	Result	Units	MDL	MRL	Dilution
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorobutanesulfonic acid	ND	ug/L	0.00073	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorodecanoic acid	ND	ug/L	0.00028	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorododecanoic acid	ND	ug/L	0.00064	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluoroheptanoic acid	ND	ug/L	0.00036	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorohexanesulfonic acid	ND	ug/L	0.00046	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorohexanoic acid	ND	ug/L	0.00039	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorononanoic acid	ND	ug/L	0.00035	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorooctanesulfonic acid	ND	ug/L	0.00020	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorooctanoic acid	0.00028J	ug/L	0.00023	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorotetradecanoic acid	ND	ug/L	0.0014	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluorotridecanoic acid	ND	ug/L	0.00083	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	Perfluoroundecanoic acid	ND	ug/L	0.00044	0.0025	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	13C-PFDA	130	%		130	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	13C-PFHxA	92	%		130	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	13C-PFOA	106	%		150	1
10/24/16	10/25/16 23:56	944665	945173	(EPA 537)	13C-PFOS	104	%		150	1

Rounding on totals after summation.
(c) - Indicates calculated results.
ND - Analyte was not detected at the calculated MDL.
J - The analyte was either detected at or greater than the MDL and less than the MRL, or did not meet any one of the required QC criteria.

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Perfluorinated Alkyl Acids

Prep Batch: 944665 Analytical Batch: 945173 **Analysis Date: 10/25/2016**

201610210310	Field Blank Grab Water	Analyzed by: ARH

Perfluorinated Alkyl Acids

Prep Batch: 944833 Analytical Batch: 946420 **Analysis Date: 11/03/2016**

201610210309	V915 Grab Wastewater	Analyzed by: ARH

Perfluorinated Alkyl Acids

Prep Batch: 944833 Analytical Batch: 947261 **Analysis Date: 11/05/2016**

201610210309	V915 Grab Wastewater	Analyzed by: ARH

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Laboratory QC
Report: 618473

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
Perfluorinated Alkyl Acids by EPA 537									
Prep Batch: 944665 Analytical Batch: 945173							**Analysis Date: 10/25/2016**		
LCS1	13C-PFDA (S)			88.3	%	88	(70-130)		
LCS2	13C-PFDA (S)			80.8	%	81	(70-130)		
MBLK	13C-PFDA (S)			88.1	%	88	(70-130)		
MRL_CHK	13C-PFDA (S)			86.2	%	86	(70-130)		
MS_201610190533	13C-PFDA (S)			84.0	%	84	(70-130)		
MSD_201610190533	13C-PFDA (S)			84.1	%	84	(70-130)		
LCS1	13C-PFHxA (S)			91.3	%	91	(70-130)		
LCS2	13C-PFHxA (S)			90.8	%	91	(70-130)		
MBLK	13C-PFHxA (S)			93.6	%	94	(70-130)		
MRL_CHK	13C-PFHxA (S)			92.0	%	92	(70-130)		
MS_201610190533	13C-PFHxA (S)			86.8	%	87	(70-130)		
MSD_201610190533	13C-PFHxA (S)			93.4	%	93	(70-130)		
LCS1	13C-PFOA (I)			101	%	101	(50-150)		
LCS2	13C-PFOA (I)			105	%	105	(50-150)		
MBLK	13C-PFOA (I)			105	%	105	(50-150)		
MRL_CHK	13C-PFOA (I)			105	%	105	(50-150)		
MS_201610190533	13C-PFOA (I)			104	%	104	(50-150)		
MSD_201610190533	13C-PFOA (I)			101	%	101	(50-150)		
LCS1	13C-PFOS (I)			99.6	%	100	(50-150)		
LCS2	13C-PFOS (I)			102	%	102	(50-150)		
MBLK	13C-PFOS (I)			103	%	103	(50-150)		
MRL_CHK	13C-PFOS (I)			101	%	101	(50-150)		
MS_201610190533	13C-PFOS (I)			102	%	102	(50-150)		
MSD_201610190533	13C-PFOS (I)			103	%	103	(50-150)		
LCS1	Perfluorobutanesulfonic acid		0.022	0.0216	ug/L	97	(70-130)		
LCS2	Perfluorobutanesulfonic acid		0.022	0.0225	ug/L	102	(70-130)	30	4.1
MBLK	Perfluorobutanesulfonic acid			<0.00074	ug/L				
MRL_CHK	Perfluorobutanesulfonic acid		0.0022	0.00232	ug/L	105	(50-150)		
MS_201610190533	Perfluorobutanesulfonic acid		0.0022	0.00545	ug/L	**246**	(50-150)		
MSD_201610190533	Perfluorobutanesulfonic acid		0.0022	0.00521	ug/L	**235**	(50-150)	50	3.6
LCS1	Perfluorodecanoic acid		0.025	0.0231	ug/L	93	(70-130)		
LCS2	Perfluorodecanoic acid		0.025	0.0240	ug/L	96	(70-130)	30	3.8
MBLK	Perfluorodecanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorodecanoic acid		0.0025	0.00224	ug/L	90	(50-150)		
MS_201610190533	Perfluorodecanoic acid		0.0025	0.00725	ug/L	**290**	(50-150)		

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MSD_201610190533	Perfluorodecanoic acid		0.0025	0.00692	ug/L	**277**	(50-150)	50	4.0
LCS1	Perfluorododecanoic acid		0.025	0.0220	ug/L	88	(70-130)		
LCS2	Perfluorododecanoic acid		0.025	0.0210	ug/L	84	(70-130)	30	4.2
MBLK	Perfluorododecanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorododecanoic acid		0.0025	0.00233	ug/L	93	(50-150)		
MS_201610190533	Perfluorododecanoic acid		0.0025	0.00237	ug/L	95	(50-150)		
MSD_201610190533	Perfluorododecanoic acid		0.0025	0.00227	ug/L	91	(50-150)	50	**200**
LCS1	Perfluoroheptanoic acid		0.025	0.0248	ug/L	99	(70-130)		
LCS2	Perfluoroheptanoic acid		0.025	0.0248	ug/L	99	(70-130)	30	0.0
MBLK	Perfluoroheptanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluoroheptanoic acid		0.0025	0.00260	ug/L	104	(50-150)		
MS_201610190533	Perfluoroheptanoic acid		0.0025	0.00663	ug/L	**265**	(50-150)		
MSD_201610190533	Perfluoroheptanoic acid		0.0025	0.00683	ug/L	**273**	(50-150)	50	3.4
LCS1	Perfluorohexanesulfonic acid		0.024	0.0240	ug/L	101	(70-130)		
LCS2	Perfluorohexanesulfonic acid		0.024	0.0237	ug/L	100	(70-130)	30	1.3
MBLK	Perfluorohexanesulfonic acid			<0.00079	ug/L				
MRL_CHK	Perfluorohexanesulfonic acid		0.0024	0.00243	ug/L	103	(50-150)		
MS_201610190533	Perfluorohexanesulfonic acid		0.0024	0.00314	ug/L	132	(50-150)		
MSD_201610190533	Perfluorohexanesulfonic acid		0.0024	0.00302	ug/L	127	(50-150)	50	2.6
LCS1	Perfluorohexanoic acid		0.025	0.0243	ug/L	97	(70-130)		
LCS2	Perfluorohexanoic acid		0.025	0.0238	ug/L	95	(70-130)	30	2.1
MBLK	Perfluorohexanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorohexanoic acid		0.0025	0.00247	ug/L	99	(50-150)		
MS_201610190533	Perfluorohexanoic acid		0.0025	0.0311	ug/L	**1240**	(50-150)		
MSD_201610190533	Perfluorohexanoic acid		0.0025	0.0334	ug/L	**1340**	(50-150)	50	7.5
LCS1	Perfluorononanoic acid		0.025	0.0249	ug/L	100	(70-130)		
LCS2	Perfluorononanoic acid		0.025	0.0245	ug/L	98	(70-130)	30	1.6
MBLK	Perfluorononanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorononanoic acid		0.0025	0.00264	ug/L	106	(50-150)		
MS_201610190533	Perfluorononanoic acid		0.0025	0.00385	ug/L	**154**	(50-150)		
MSD_201610190533	Perfluorononanoic acid		0.0025	0.00404	ug/L	**161**	(50-150)	50	6.1
LCS1	Perfluorooctanesulfonic acid		0.024	0.0237	ug/L	99	(70-130)		
LCS2	Perfluorooctanesulfonic acid		0.024	0.0239	ug/L	100	(70-130)	30	0.84
MBLK	Perfluorooctanesulfonic acid			<0.0008	ug/L				
MRL_CHK	Perfluorooctanesulfonic acid		0.0024	0.00240	ug/L	100	(50-150)		
MS_201610190533	Perfluorooctanesulfonic acid	0.0026	0.0024	0.00455	ug/L	81	(50-150)		
MSD_201610190533	Perfluorooctanesulfonic acid	0.0026	0.0024	0.00444	ug/L	76	(50-150)	50	3.5
LCS1	Perfluorooctanoic acid		0.025	0.0241	ug/L	97	(70-130)		

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Perfluorooctanoic acid		0.025	0.0240	ug/L	96	(70-130)	30	0.42
MBLK	Perfluorooctanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorooctanoic acid		0.0025	0.00255	ug/L	102	(50-150)		
MS_201610190533	Perfluorooctanoic acid	0.026	0.0025	0.0287	ug/L	101	(50-150)		
MSD_201610190533	Perfluorooctanoic acid	0.026	0.0025	0.0290	ug/L	112	(50-150)	50	1.0
LCS1	Perfluorotetradecanoic acid		0.025	0.0230	ug/L	92	(70-130)		
LCS2	Perfluorotetradecanoic acid		0.025	0.0217	ug/L	87	(70-130)	30	5.8
MBLK	Perfluorotetradecanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorotetradecanoic acid		0.0025	0.00249	ug/L	100	(50-150)		
MS_201610190533	Perfluorotetradecanoic acid		0.0025	0.00196	ug/L	78	(50-150)		
MSD_201610190533	Perfluorotetradecanoic acid		0.0025	0.00162	ug/L	65	(50-150)	50	**200**
LCS1	Perfluorotridecanoic acid		0.025	0.0217	ug/L	87	(70-130)		
LCS2	Perfluorotridecanoic acid		0.025	0.0209	ug/L	84	(70-130)	30	3.8
MBLK	Perfluorotridecanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorotridecanoic acid		0.0025	0.00223	ug/L	89	(50-150)		
MS_201610190533	Perfluorotridecanoic acid		0.0025	0.00203	ug/L	81	(50-150)		
MSD_201610190533	Perfluorotridecanoic acid		0.0025	0.00202	ug/L	81	(50-150)	50	0.49
LCS1	Perfluoroundecanoic acid		0.025	0.0242	ug/L	97	(70-130)		
LCS2	Perfluoroundecanoic acid		0.025	0.0232	ug/L	93	(70-130)	30	4.2
MBLK	Perfluoroundecanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluoroundecanoic acid		0.0025	0.00252	ug/L	101	(50-150)		
MS_201610190533	Perfluoroundecanoic acid		0.0025	0.00231	ug/L	93	(50-150)		
MSD_201610190533	Perfluoroundecanoic acid		0.0025	0.00239	ug/L	96	(50-150)	50	3.4

Perfluorinated Alkyl Acids by EPA 537

Prep Batch: 944833 Analytical Batch: 946420 **Analysis Date: 11/02/2016**

LCS1	13C-PFDA (S)	91.6	%	92	(70-130)
LCS2	13C-PFDA (S)	99.0	%	99	(70-130)
MBLK	13C-PFDA (S)	89.4	%	89	(70-130)
MRL_CHK	13C-PFDA (S)	94.1	%	94	(70-130)
MS1_201610270029	13C-PFDA (S)	96.2	%	96	(70-130)
MSD1_201610270029	13C-PFDA (S)	95.8	%	96	(70-130)
LCS1	13C-PFHxA (S)	95.2	%	95	(70-130)
LCS2	13C-PFHxA (S)	101	%	101	(70-130)
MBLK	13C-PFHxA (S)	97.0	%	97	(70-130)
MRL_CHK	13C-PFHxA (S)	99.6	%	100	(70-130)
MS1_201610270029	13C-PFHxA (S)	99.9	%	100	(70-130)
MSD1_201610270029	13C-PFHxA (S)	94.9	%	95	(70-130)

Spike recovery is already corrected for native results.
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RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	13C-PFOA (I)			103	%	103	(50-150)		
LCS2	13C-PFOA (I)			100	%	100	(50-150)		
MBLK	13C-PFOA (I)			101	%	101	(50-150)		
MRL_CHK	13C-PFOA (I)			102	%	102	(50-150)		
MS1_201610270029	13C-PFOA (I)			98.2	%	98	(50-150)		
MSD1_201610270029	13C-PFOA (I)			95.3	%	95	(50-150)		
LCS1	13C-PFOS (I)			103	%	103	(50-150)		
LCS2	13C-PFOS (I)			104	%	104	(50-150)		
MBLK	13C-PFOS (I)			104	%	104	(50-150)		
MRL_CHK	13C-PFOS (I)			104	%	104	(50-150)		
MS1_201610270029	13C-PFOS (I)			102	%	102	(50-150)		
MSD1_201610270029	13C-PFOS (I)			99.8	%	100	(50-150)		
LCS1	Perfluorobutanesulfonic acid		0.022	0.0238	ug/L	107	(70-130)		
LCS2	Perfluorobutanesulfonic acid		0.022	0.0231	ug/L	104	(70-130)	30	3.0
MBLK	Perfluorobutanesulfonic acid			<0.00074	ug/L				
MRL_CHK	Perfluorobutanesulfonic acid		0.0022	0.00250	ug/L	113	(50-150)		
MS1_201610270029	Perfluorobutanesulfonic acid	ND	0.022	0.0234	ug/L	103	(70-130)		
MSD1_201610270029	Perfluorobutanesulfonic acid	ND	0.022	0.0242	ug/L	106	(70-130)	30	3.4
LCS1	Perfluorodecanoic acid		0.025	0.0229	ug/L	92	(70-130)		
LCS2	Perfluorodecanoic acid		0.025	0.0252	ug/L	101	(70-130)	30	9.6
MBLK	Perfluorodecanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorodecanoic acid		0.0025	0.00254	ug/L	102	(50-150)		
MS1_201610270029	Perfluorodecanoic acid	ND	0.025	0.0245	ug/L	98	(70-130)		
MSD1_201610270029	Perfluorodecanoic acid	ND	0.025	0.0252	ug/L	100	(70-130)	30	2.8
LCS1	Perfluorododecanoic acid		0.025	0.0220	ug/L	88	(70-130)		
LCS2	Perfluorododecanoic acid		0.025	0.0267	ug/L	107	(70-130)	30	19
MBLK	Perfluorododecanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorododecanoic acid		0.0025	0.00253	ug/L	101	(50-150)		
MS1_201610270029	Perfluorododecanoic acid	ND	0.025	0.0248	ug/L	99	(70-130)		
MSD1_201610270029	Perfluorododecanoic acid	ND	0.025	0.0254	ug/L	101	(70-130)	30	2.4
LCS1	Perfluoroheptanoic acid		0.025	0.0264	ug/L	105	(70-130)		
LCS2	Perfluoroheptanoic acid		0.025	0.0272	ug/L	109	(70-130)	30	3.0
MBLK	Perfluoroheptanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluoroheptanoic acid		0.0025	0.00270	ug/L	108	(50-150)		
MS1_201610270029	Perfluoroheptanoic acid	ND	0.025	0.0269	ug/L	106	(70-130)		
MSD1_201610270029	Perfluoroheptanoic acid	ND	0.025	0.0267	ug/L	105	(70-130)	30	0.75
LCS1	Perfluorohexanesulfonic acid		0.024	0.0258	ug/L	109	(70-130)		
LCS2	Perfluorohexanesulfonic acid		0.024	0.0254	ug/L	107	(70-130)	30	1.6

Spike recovery is already corrected for native results.
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RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Perfluorohexanesulfonic acid			<0.00079	ug/L				
MRL_CHK	Perfluorohexanesulfonic acid		0.0024	0.00269	ug/L	114	(50-150)		
MS1_201610270029	Perfluorohexanesulfonic acid	ND	0.024	0.0258	ug/L	104	(70-130)		
MSD1_201610270029	Perfluorohexanesulfonic acid	ND	0.024	0.0259	ug/L	104	(70-130)	30	0.39
LCS1	Perfluorohexanoic acid		0.025	0.0239	ug/L	96	(70-130)		
LCS2	Perfluorohexanoic acid		0.025	0.0262	ug/L	105	(70-130)	30	9.2
MBLK	Perfluorohexanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorohexanoic acid		0.0025	0.00271	ug/L	109	(50-150)		
MS1_201610270029	Perfluorohexanoic acid	ND	0.025	0.0262	ug/L	98	(70-130)		
MSD1_201610270029	Perfluorohexanoic acid	ND	0.025	0.0270	ug/L	101	(70-130)	30	3.0
LCS1	Perfluorononanoic acid		0.025	0.0253	ug/L	101	(70-130)		
LCS2	Perfluorononanoic acid		0.025	0.0277	ug/L	111	(70-130)	30	9.1
MBLK	Perfluorononanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorononanoic acid		0.0025	0.00315	ug/L	126	(50-150)		
MS1_201610270029	Perfluorononanoic acid	ND	0.025	0.0267	ug/L	105	(70-130)		
MSD1_201610270029	Perfluorononanoic acid	ND	0.025	0.0274	ug/L	108	(70-130)	30	2.6
LCS1	Perfluorooctanesulfonic acid		0.024	0.0252	ug/L	105	(70-130)		
LCS2	Perfluorooctanesulfonic acid		0.024	0.0261	ug/L	109	(70-130)	30	3.5
MBLK	Perfluorooctanesulfonic acid			<0.0008	ug/L				
MRL_CHK	Perfluorooctanesulfonic acid		0.0024	0.00270	ug/L	112	(50-150)		
MS1_201610270029	Perfluorooctanesulfonic acid	ND	0.024	0.0266	ug/L	102	(70-130)		
MSD1_201610270029	Perfluorooctanesulfonic acid	ND	0.024	0.0273	ug/L	105	(70-130)	30	2.6
LCS1	Perfluorooctanoic acid		0.025	0.0262	ug/L	105	(70-130)		
LCS2	Perfluorooctanoic acid		0.025	0.0275	ug/L	110	(70-130)	30	4.8
MBLK	Perfluorooctanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorooctanoic acid		0.0025	0.00299	ug/L	120	(50-150)		
MS1_201610270029	Perfluorooctanoic acid	ND	0.025	0.0286	ug/L	108	(70-130)		
MSD1_201610270029	Perfluorooctanoic acid	ND	0.025	0.0279	ug/L	106	(70-130)	30	2.5
LCS1	Perfluorotridecanoic acid		0.025	0.0237	ug/L	95	(70-130)		
LCS2	Perfluorotridecanoic acid		0.025	0.0263	ug/L	105	(70-130)	30	10
MBLK	Perfluorotridecanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorotridecanoic acid		0.0025	0.00267	ug/L	107	(50-150)		
MS1_201610270029	Perfluorotridecanoic acid	ND	0.025	0.0247	ug/L	99	(70-130)		
MSD1_201610270029	Perfluorotridecanoic acid	ND	0.025	0.0268	ug/L	107	(70-130)	30	8.2
LCS1	Perfluoroundecanoic acid		0.025	0.0242	ug/L	97	(70-130)		
LCS2	Perfluoroundecanoic acid		0.025	0.0281	ug/L	112	(70-130)	30	15
MBLK	Perfluoroundecanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluoroundecanoic acid		0.0025	0.00290	ug/L	116	(50-150)		

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RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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Laboratory QC
Report: 618473

Eurofins Lancaster Laboratories

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS1_201610270029	Perfluoroundecanoic acid	ND	0.025	0.0263	ug/L	105	(70-130)		
MSD1_201610270029	Perfluoroundecanoic acid	ND	0.025	0.0268	ug/L	107	(70-130)	30	1.9

Perfluorinated Alkyl Acids by EPA 537

Analytical Batch: 947261 **Analysis Date: 11/05/2016**

LCS1	Perfluorotetradecanoic acid		0.025	0.0251	ug/L	100	(70-130)		
LCS2	Perfluorotetradecanoic acid		0.025	0.0223	ug/L	89	(70-130)	30	12
MBLK	Perfluorotetradecanoic acid			<0.00083	ug/L				
MRL_CHK	Perfluorotetradecanoic acid		0.0025	0.00194	ug/L	78	(50-150)		
MS1_201610270029	Perfluorotetradecanoic acid	ND	0.025	0.0225	ug/L	90	(70-130)		
MSD1_201610270029	Perfluorotetradecanoic acid	ND	0.025	0.0214	ug/L	86	(70-130)	30	5.0

Spike recovery is already corrected for native results.
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RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mg**	milligram(s)
C	degrees Celsius	**mL**	milliliter(s)
cfu	colony forming units	**MPN**	Most Probable Number
CP Units	cobalt-chloroplatinate units	**N.D.**	none detected
F	degrees Fahrenheit	**ng**	nanogram(s)
g	gram(s)	**NTU**	nephelometric turbidity units
IU	International Units	**pg/L**	picogram/liter
kg	kilogram(s)	**RL**	Reporting Limit
L	liter(s)	**TNTC**	Too Numerous To Count
lb.	pound(s)	**µg**	microgram(s)
m3	cubic meter(s)	**µL**	microliter(s)
meq	milliequivalents	**umhos/cm**	micromhos/cm

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…
W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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