

CERTIFICATION

St. Columba Landfill, Chester, NY

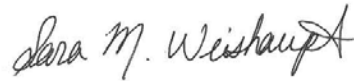
I, Sara M Weishaupt, certify that all activities detailed in this Field Activity Summary Report were conducted as described and in full accordance with the approved work plan and any NYSDEC approved modifications, unless otherwise noted herein.

Sara M. Weishaupt

Regional Coordinator

06/18/2020

Date



Signature

Reviewed/Accepted By:

Ella Cattabiani

NYSDEC Division of Materials

Management

06/18/2020

Date



Signature

New York State Department of Environmental Conservation
Division of Materials Management
Inactive Landfill Initiative
Field Activities Summary

Landfill Name: St. Columba Landfill

Region: 3

Database ID: 3235

Date of Field Activities: 12/17/19

Summary of Field Activities

Three pre-existing monitoring wells and two seep locations were sampled at the St. Columba Landfill. All work was performed in accordance with the Field Activities Plan (FAP) with no deviations. Approximate locations of monitoring wells and seeps are shown on Figure 1. Groundwater flow direction is shown on Figure 2.

Monitoring Wells Sampled

Monitoring Well ID	Date	Sample Collected (yes/no)	Comments
MW-1	12/17/19	Yes	Sampled with a Peristaltic Pump @ 175 mL/min. GW parameters stabilized, with the exception of turbidity, which began rising steeply after 50 minutes of purging. Turbidity was >50 NTU when Horiba was disconnected. Field Sample ID: 3-ORA-011-001-03
MW-5	12/17/19	Yes	Sampled with a Peristaltic Pump @ 175 mL/min. GW parameters stabilized. Field Sample ID: 3-ORA-011-001-04
MW-6	12/17/19	Yes	Sampled with a Peristaltic Pump @ 225 mL/min. GW parameters stabilized. Field Sample ID: 3-ORA-011-001-06

Other Samples

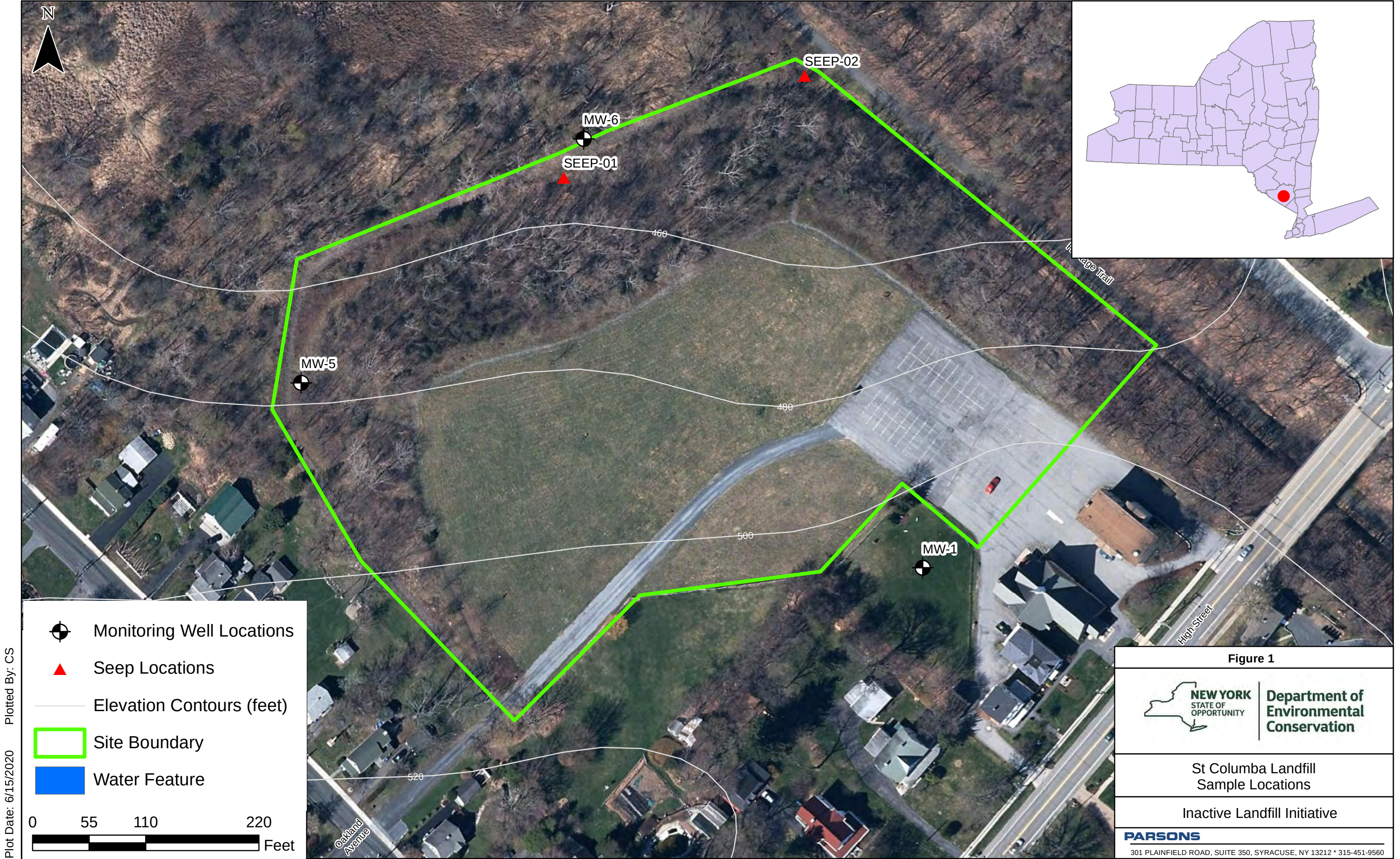
Sample Location	Sample Type	Date	Comments
SEEP-01	Seep	12/17/19	Located 20 ft east of MW-6 within swale; sampled from the southern swale that drains into the larger swale directing flow NW into the wetlands. Field Sample ID: 3-ORA-011-001-05
SEEP-02	Seep	12/17/19	Located 20 ft west of MW-7 within small puddle. Field Sample ID: 3-ORA-011-001-07
N/A	Field Blank	12/17/19	Field QC Sample
N/A	Equipment Blank	12/17/19	Field QC Sample

Figures

Figure 1	Sample Locations
Figure 2	Groundwater Flow Direction and Emergent Contaminants Results Summary

Attachments

Attachment 1	Work Plan [N/A]
Attachment 2	Soil Boring/Well Installation Logs [N/A]
Attachment 3	Sampling Logs
Attachment 4	Analytical Laboratory Level II Data Deliverable



Plot Date: 6/15/2020 Plotted By: CS



Monitoring Well Locations



Seep Locations



Elevation Contours (feet)



Site Boundary



Water Feature

055110220

Feet

Figure 1



NEW YORK
STATE OF
OPPORTUNITY

Department of
Environmental
Conservation

St Columba Landfill
Sample Locations

Inactive Landfill Initiative

PARSONS

301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560



Plot Date: 6/15/2020 Plotted By: CS

ATTACHMENT 1

WORK PLAN (NOT APPLICABLE)

ATTACHMENT 2

SOIL BORING/WELL INSTALLATION LOGS

(NOT APPLICABLE)

ATTACHMENT 3

SAMPLING LOGS

Low Flow Ground Water Sampling Log

Kristen Brooks, Matt

Date	12/17/19	Personnel	Colbert	Weather	29°F, sleet
Site Name	St. Columba LF	Evacuation Method	Peristaltic Pump	Well #	MW-1
Site Location	Chester, NY	Sampling Method	Low Flow	Project #	450619.04000

Well information:

Depth of Well 23.00 ft.

Depth to Water 1.26 ft.

$$H_{wc} \quad \underline{21.74 \text{ ft.}}$$

Depth to Intake	22.00 ft.
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*Measurements taken from:

X	Top of Well Casing
---	--------------------

Top of Protective Casing

(Other, Specify)

Start Purge Time: 0840

[illegible]

End Purge Time: 0955

Water Sample

Time Collected:

Total volume of purged water removed: (gallons)

Physical appearance at start:

Physical appearance at end:

Color yellow/clear

Color yellow

Odor none

Odor none

Sheen/Free Product none

Sheen/Free Product none

Samples:	Normal
----------	--------

Sample	Container Type	# Collected	Field Filtered	Preservative	Container pH
PFAS	Plastic 250 mL	2	No	None	
1,4-Dioxane	Amber 1L	2	No	None	
VOCs	Voa Vial 40 mL	3	No	HCl	
TOC	Voa Vial 40 mL	2	No	HCl	
PAHs	Amber 250 mL	2	No	None	
Alkalinity	Plastic 125 mL	1	No	None	
Ammonia/COD	Plastic 250 mL	1	No	H2SO4	
Chl/BrO/SO4	Plastic 60 mL	1	No	None	
Mod. Bsln	Plastic 250 mL	1	No	HNO3	
Hardness	Plastic 250 mL	1	No	HNO3	
TDS	Plastic 500 mL	1	No	None	

Low Flow Ground Water Sampling Log

Kristen Brooks, Matt

Date	12/17/19	Personnel	Colbert	Weather	29°F, freezing rain
Site Name	St. Columba LF	Evacuation Method	Peristaltic Pump	Well #	MW-5
Site Location	Chester, NY	Sampling Method	Low Flow	Project #	450619.04000

Well information:

Depth of Well 21.58 ft.

Depth to Water	5.09 ft.
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$$\underline{H_{wc} \quad 16.49 \text{ ft.}}$$

Depth to Intake	20.58 ft.
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*Measurements taken from:

X	Top of Well Casing
---	--------------------

Top of Protective Casing

	(Other, Specify)
--	------------------

Start Purge Time: 1120

[illegible]

End Purge Time: 1200

Water Sample

Time Collected:

Total volume of purged water removed: (gallons)

Physical appearance at start:

Physical appearance at end:

Color yellow

Color yellow

Odor none

Odor none

Sheen/Free Product none

Sheen/Free Product none

Samples:	Normal
----------	--------

Sample	Container Type	# Collected	Field Filtered	Preservative	Container pH
PFAS	Plastic 250 mL	2	No	None	
1,4-Dioxane	Amber 1L	2	No	None	
VOCs	Voa Vial 40 mL	3	No	HCl	
TOC	Voa Vial 40 mL	2	No	HCl	
PAHs	Amber 250 mL	2	No	None	
Alkalinity	Plastic 125 mL	1	No	None	
Ammonia/COD	Plastic 250 mL	1	No	H2SO4	
Chl/BrO/SO4	Plastic 60 mL	1	No	None	
Mod. Bsln	Plastic 250 mL	1	No	HNO3	
Hardness	Plastic 250 mL	1	No	HNO3	
TDS	Plastic 500 mL	1	No	None	

Low Flow Ground Water Sampling Log

Kristen Brooks, Matt

Date	12/17/19	Personnel	Colbert	Weather	29°F, freezing rain
Site Name	St. Columba LF	Evacuation Method	Peristaltic Pump	Well #	MW-6
Site Location	Chester, NY	Sampling Method	Low Flow	Project #	450619.04000

Well information:

Depth of Well 18.62 ft.

Depth to Water	4.08 ft.
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H _{wc}	<u>14.54 ft.</u>
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Depth to Intake	17.62 ft.
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*Measurements taken from:

X	Top of Well Casing
---	--------------------

Top of Protective Casing

(Other, Specify)

Start Purge Time: 1332

[illegible]

End Purge Time: 1412

Water Sample

Time Collected: 1440

Total volume of purged water removed: (gallons)

Physical appearance at start:

Physical appearance at end:

Color yellow

Color yellow

Odor none

Odor none

Sheen/Free Product none

Sheen/Free Product none

Samples:	Normal
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Sample	Container Type	# Collected	Field Filtered	Preservative	Container pH
PFAS	Plastic 250 mL	2	No	None	
1,4-Dioxane	Amber 1L	2	No	None	
VOCs	Voa Vial 40 mL	3	No	HCl	
TOC	Voa Vial 40 mL	2	No	HCl	
PAHs	Amber 250 mL	2	No	None	
Alkalinity	Plastic 125 mL	1	No	None	
Ammonia/COD	Plastic 250 mL	1	No	H2SO4	
Chl/BrO/SO4	Plastic 60 mL	1	No	None	
Mod. Bsln	Plastic 250 mL	1	No	HNO3	
Hardness	Plastic 250 mL	1	No	HNO3	
TDS	Plastic 500 mL	1	No	None	

PARSONS

SURFACE WATER/SEEP SAMPLING RECORD

SITE NAME: St. Columba Landfill

PROJECT NUMBER: 450619.04000

SAMPLING DATE / TIME: 12/17/2019 ; 1345

WEATHER: 29°F, freezing rain

SAMPLERS: K. Brooks of Parsons
M. Colbert of Parsons

SAMPLE ID: 3-ORA-011-001-05

SAMPLING METHOD: Dipping using sample container

DEPTH OF SAMPLE: less than 3 inches

DESCRIPTION OF SAMPLING POINT

LOCATION: 20 ft east of MW-6 within swale; sampled from the southern swale that drains into the larger swale directing flow northwest into the wetlands

PHYSICAL APPEARANCE: Slightly orange water with iron floc, lots of dead organic matter

DEPTH TO BOTTOM: less than 3 inches

DRAINAGE DIRECTION: Northeast

UPSTREAM FROM: MW-6

DOWNSTREAM FROM: MW-5

SAMPLE DESCRIPTION

COLOR: Slightly orange

ODOR: None

SUSPENDED MATTER: Yes, organic & iron floc

OTHER: No sheen

FIELD TESTS

FIELD TESTS LABEL: N/A

TEMPERATURE: N/A

REDUX: N/A

pH: N/A

DISSOLVED O2: N/A

CONDUCTIVITY: N/A

OTHER: N/A

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFAS, VOCs, PAHs, 1,4-Dioxane, Metals/Hg, Hardness, Ammonia/COD, TOC, SO4/CHL/BRO, TDS, Alkalinity

QA/QC SAMPLE ID: N/A

ANALYZE QA/QC SAMPLES FOR: N/A

DATE/TIME REFRIGERATED: Samples iced following collection

CHAIN OF CUSTODY NUMBER: 3-ORA-011-001

SHIPPED VIA: FedEx. Dropped off at FedEx in Newburyport

LABORATORY: Test America

COMMENTS / MISCELLANEOUS



PARSONS

SURFACE WATER/SEEP SAMPLING RECORD

SITE NAME: St. Columba Landfill

PROJECT NUMBER: 450619.04000

SAMPLING DATE / TIME: 12/17/2019 ; 1600

WEATHER: 29°F, freezing rain

SAMPLERS: K. Brooks of Parsons
M. Colbert of Parsons

SAMPLE ID: 3-ORA-011-001-07

SAMPLING METHOD: Dipping using sample container

DEPTH OF SAMPLE: less than 3 inches

DESCRIPTION OF SAMPLING POINT

LOCATION: 20 ft west of MW-7 within small puddle

PHYSICAL APPEARANCE: Slightly orange water with iron floc, lots of dead organic matter

DEPTH TO BOTTOM: less than 3 inches

DRAINAGE DIRECTION: West

UPSTREAM FROM: Wetlands area

DOWNSTREAM FROM: MW-7

SAMPLE DESCRIPTION

COLOR: Slightly orange

ODOR: Slight

SUSPENDED MATTER: Yes, organic & iron floc

OTHER: Slight sheen

FIELD TESTS

FIELD TESTS LABEL: N/A

TEMPERATURE: N/A **REDOX:** N/A

pH: N/A **DISSOLVED O2:** N/A

CONDUCTIVITY: N/A **OTHER:** N/A

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFAS, VOCs, PAHs, 1,4-Dioxane, Metals/Hg, Hardness, Ammonia/COD, TOC, SO4/CHL/BRO, TDS, Alkalinity

QA/QC SAMPLE ID: N/A

ANALYZE QA/QC SAMPLES FOR: N/A

DATE/TIME REFRIGERATED: Samples iced following collection

CHAIN OF CUSTODY NUMBER: 3-ORA-011-001

SHIPPED VIA: FedEx, Newburgh, NY

LABORATORY: Test America

COMMENTS / MISCELLANEOUS



ATTACHMENT 4

ANALYTICAL LABORATORY LEVEL II DATA DELIVERABLE

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-164381-1

Client Project/Site: 3-ORA-011 St Columba LF

For:

Parsons Corporation
301 Plainfield Road
Suite 350
Syracuse, New York 13212

Attn: Sara Weishaupt



Authorized for release by:

1/13/2020 10:32:14 AM

Alexander Gilbert, Project Management Assistant I
alexander.gilbert@testamericainc.com

Designee for

Brian Fischer, Manager of Project Management
(716)504-9835
brian.fischer@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 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.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	6
Client Sample Results	11
Surrogate Summary	33
Isotope Dilution Summary	34
QC Sample Results	36
QC Association Summary	52
Lab Chronicle	57
Certification Summary	61
Method Summary	62
Sample Summary	63
Chain of Custody	64
Receipt Checklists	66



Definitions/Glossary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Case Narrative

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Job ID: 480-164381-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-164381-1

Comments

No additional comments.

Receipt

The samples were received on 12/18/2019 10:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

GC/MS VOA

Method 8260C: Surrogate recovery for the following sample was outside the upper control limit: 3-ORA-011-001-08 (480-164381-8). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8260C: The laboratory control sample (LCS) for analytical batch 480-510722 recovered outside control limits for the following analyte: Chloroethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-510722 recovered above the upper control limit for Chlorobromomethane and Trichlorofluoromethane. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data have been reported. The following sample is impacted: 3-ORA-011-001-08 (480-164381-8).

Method 8260C: The surrogate recovery for Dibromofluoromethane (Surr) was outside the 20%D limits on the continuing calibration verification (CCVIS 480-510722/9) but was within laboratory limits. The following samples are impacted: 3-ORA-011-001-08 (480-164381-8).

Method 8260C: The following samples were collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The samples were analyzed within the 7-day holding time specified for unpreserved samples: 3-ORA-011-001-05 (480-164381-5) and 3-ORA-011-001-06 (480-164381-6). 480-164381-5, 480-164498-1, MS/MSD pH is 7 and 480-164381-6, 480-164505-1 pH is 54.

Method 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: 3-ORA-011-001-05 (480-164381-5) and 3-ORA-011-001-06 (480-164381-6). 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.

GC/MS Semi VOA

Method 8270D SIM ID: The following samples were diluted to bring the concentration of target analytes within the calibration range: 3-ORA-011-001-05 (480-164381-5) and 3-ORA-011-001-06 (480-164381-6). Elevated reporting limits (RLs) are provided.

Method 8270D SIM ID: The 1,4-Dioxane result reported for samples 3-ORA-011-001-05 (480-164381-5) and 3-ORA-011-001-06 (480-164381-6) have an E flag qualifier indicating the results are over the calibration range on the raw data. The actual amounts are within the calibration range; however, the E flag is generated based upon the bias corrected concentration. The LIMS system calculates a bias correction based on the recovery of the 1,4-Dioxane-d8 isotope.

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

HPLC/IC

Method 300.0: The following sample was reported with elevated reporting limits for all analytes: 3-ORA-011-001-03 (480-164381-3). The sample was analyzed at a dilution based on screening results.

Method 300.0: The following samples were diluted to bring the concentration of target analytes within the calibration range: 3-ORA-011-001-04 (480-164381-4), 3-ORA-011-001-05 (480-164381-5), 3-ORA-011-001-06 (480-164381-6) and 3-ORA-011-001-07 (480-164381-7). Elevated reporting limits (RLs) are provided.

Case Narrative

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Job ID: 480-164381-1 (Continued)

Laboratory: Eurofins TestAmerica, Buffalo (Continued)

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

Metals

Method 6010C: The continuing calibration blank (CCB 480-511351/36) for analytical batch 480-511351 contained Total Boron above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of sample 3-ORA-011-001-06 (480-164381-6) was not performed.

Method 6010C: The low level continuing calibration verification (CCVL 480-511351/37) associated with batch 480-511351 recovered above the upper control limit for Total Boron. The sample associated with this CCV, 3-ORA-011-001-06 (480-164381-6), was non-detect for the affected analyte; 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.

LCMS

Method 537 (modified): M2-6:2 FTS and M2-8:2 FTS Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following sample: 3-ORA-011-001-05 (480-164381-5). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): 13C2 PFDA, 13C2 PFUnA, 13C2 PFDaA, 13C5 PFNA, d3-NMeFOSAA and d5-NEtFOSAA The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: 3-ORA-011-001-07 (480-164381-7). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s). All detection limits are below the lower calibration.

Method 537 (modified): The Ion Ratio associated with Perfluorooctanesulfonic acid (PFOS) in sample 3-ORA-011-001-01 (480-164381-1) and 3-ORA-011-001-03 (480-164381-3) fails our in-house defined limits, however the result is being reported because the peaks observed for both mass transitions are within the expected retention time windows for the branched chain isomers in our calibration mix. Since many of these isomers are at very low levels in our mixed calibration source (many are less than 5% of the solution), it's difficult to project how the different isomer's responses differ at higher levels, so we do not reject the detect based solely upon the ratio failure.

Method 537 (modified): Results for samples 3-ORA-011-001-05 (480-164381-5) and 3-ORA-011-001-06 (480-164381-6) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

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

General Chemistry

Method 9060A: The reference method requires samples to be preserved to a pH below 2. The following samples were received with insufficient preservation at a pH above 2: 3-ORA-011-001-05 (480-164381-5) and 3-ORA-011-001-06 (480-164381-6). The samples were preserved to the appropriate pH in the laboratory.

Method SM 2540C: Due to the matrix, the initial volume(s) used for the following samples deviated from the standard procedure: 3-ORA-011-001-04 (480-164381-4), 3-ORA-011-001-05 (480-164381-5) and 3-ORA-011-001-06 (480-164381-6). The reporting limits (RLs) have been adjusted proportionately.

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

Organic Prep

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

Detection Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-01

Lab Sample ID: 480-164381-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	3.8	I	1.7	0.53	ng/L	1		537 (modified)	Total/NA

Client Sample ID: 3-ORA-011-001-02

Lab Sample ID: 480-164381-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.1	J	1.8	0.68	ng/L	1		537 (modified)	Total/NA

Client Sample ID: 3-ORA-011-001-03

Lab Sample ID: 480-164381-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	3.7		1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	1.5	J	1.8	0.90	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4	J	1.8	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.1	J	1.8	0.68	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.8	I	1.8	0.55	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	2.7		1.8	0.73	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.59	J	1.8	0.57	ng/L	1		537 (modified)	Total/NA
Aluminum	5.1		0.20	0.060	mg/L	1		6010C	Total/NA
Barium	0.053		0.0020	0.00070	mg/L	1		6010C	Total/NA
Beryllium	0.00041	J	0.0020	0.00030	mg/L	1		6010C	Total/NA
Boron	0.028	B	0.020	0.0040	mg/L	1		6010C	Total/NA
Cadmium	0.00056	J	0.0020	0.00050	mg/L	1		6010C	Total/NA
Calcium	36.2		0.50	0.10	mg/L	1		6010C	Total/NA
Chromium	0.0063		0.0040	0.0010	mg/L	1		6010C	Total/NA
Cobalt	0.0012	J	0.0040	0.00063	mg/L	1		6010C	Total/NA
Copper	0.0064	J	0.010	0.0016	mg/L	1		6010C	Total/NA
Iron	3.8		0.050	0.019	mg/L	1		6010C	Total/NA
Lead	0.0060	J	0.010	0.0030	mg/L	1		6010C	Total/NA
Magnesium	9.1		0.20	0.043	mg/L	1		6010C	Total/NA
Manganese	0.50		0.0030	0.00040	mg/L	1		6010C	Total/NA
Nickel	0.0036	J	0.010	0.0013	mg/L	1		6010C	Total/NA
Potassium	2.8		0.50	0.10	mg/L	1		6010C	Total/NA
Sodium	25.8		1.0	0.32	mg/L	1		6010C	Total/NA
Vanadium	0.0090		0.0050	0.0015	mg/L	1		6010C	Total/NA
Zinc	0.014		0.010	0.0015	mg/L	1		6010C	Total/NA
Chloride	59.5		1.0	0.56	mg/L	2		300.0	Total/NA
Sulfate	21.4		4.0	0.70	mg/L	2		300.0	Total/NA
Ammonia	0.013	J	0.020	0.0090	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	15.8		10.0	5.0	mg/L	1		410.4	Total/NA
Total Organic Carbon	2.9		1.0	0.43	mg/L	1		9060A	Total/NA
Alkalinity, Total	92.3	B	5.0	0.79	mg/L	1		SM 2320B	Total/NA
Total hardness as CaCO3	148		4.0	1.1	mg/L	1		SM 2340C	Total/NA
Total Dissolved Solids	250		10.0	4.0	mg/L	1		SM 2540C	Total/NA

Client Sample ID: 3-ORA-011-001-04

Lab Sample ID: 480-164381-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	3.6		1.9	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	8.4		1.9	0.96	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	3.0		1.9	0.74	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	1.8	J	1.9	0.91	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	19		1.9	0.88	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Detection Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-04 (Continued)

Lab Sample ID: 480-164381-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	17		1.9	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	20		1.9	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	4.3		1.9	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	84		1.9	0.59	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	48		1.9	0.78	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	17		1.9	0.61	ng/L	1		537 (modified)	Total/NA
Barium	0.033		0.0020	0.00070	mg/L	1		6010C	Total/NA
Boron	0.32	B	0.020	0.0040	mg/L	1		6010C	Total/NA
Cadmium	0.00050	J	0.0020	0.00050	mg/L	1		6010C	Total/NA
Calcium	359		0.50	0.10	mg/L	1		6010C	Total/NA
Copper	0.015		0.010	0.0016	mg/L	1		6010C	Total/NA
Iron	0.11		0.050	0.019	mg/L	1		6010C	Total/NA
Lead	0.0033	J	0.010	0.0030	mg/L	1		6010C	Total/NA
Magnesium	27.0		0.20	0.043	mg/L	1		6010C	Total/NA
Manganese	0.36		0.0030	0.00040	mg/L	1		6010C	Total/NA
Nickel	0.0081	J	0.010	0.0013	mg/L	1		6010C	Total/NA
Potassium	3.9		0.50	0.10	mg/L	1		6010C	Total/NA
Sodium	16.7		1.0	0.32	mg/L	1		6010C	Total/NA
Zinc	0.37		0.010	0.0015	mg/L	1		6010C	Total/NA
Chloride	25.0		5.0	2.8	mg/L	10		300.0	Total/NA
Sulfate	661		20.0	3.5	mg/L	10		300.0	Total/NA
Chemical Oxygen Demand	26.8		10.0	5.0	mg/L	1		410.4	Total/NA
Total Organic Carbon	8.9		1.0	0.43	mg/L	1		9060A	Total/NA
Alkalinity, Total	418	B	5.0	0.79	mg/L	1		SM 2320B	Total/NA
Total hardness as CaCO3	1110		10.0	2.6	mg/L	1		SM 2340C	Total/NA
Total Dissolved Solids	1400		20.0	8.0	mg/L	1		SM 2540C	Total/NA

Client Sample ID: 3-ORA-011-001-05

Lab Sample ID: 480-164381-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	3.4	J	4.0	1.8	ug/L	4		8260C	Total/NA
1,4-Dioxane	12	E	1.0	0.50	ug/L	5		8270D SIM ID	Total/NA
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	11	J	18	5.0	ng/L	1		537 (modified)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	18		18	1.4	ng/L	1		537 (modified)	Total/NA
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	7.3	J	18	1.6	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	12		1.8	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	96		1.8	0.92	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	6.0		1.8	0.70	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	4.2		1.8	0.87	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	86		1.8	0.83	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	140		1.8	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	160		1.8	0.70	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	13		1.8	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	210		1.8	0.56	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	57		1.8	0.58	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.6	J	1.8	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	1900		18	7.4	ng/L	10		537 (modified)	Total/NA
Barium	0.44		0.0020	0.00070	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Detection Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-05 (Continued)

Lab Sample ID: 480-164381-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2.6	B	0.020	0.0040	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00050	mg/L	1		6010C	Total/NA
Calcium	256		0.50	0.10	mg/L	1		6010C	Total/NA
Chromium	0.0016	J	0.0040	0.0010	mg/L	1		6010C	Total/NA
Cobalt	0.0018	J	0.0040	0.00063	mg/L	1		6010C	Total/NA
Copper	0.014		0.010	0.0016	mg/L	1		6010C	Total/NA
Iron	1.0		0.050	0.019	mg/L	1		6010C	Total/NA
Lead	0.0096	J	0.010	0.0030	mg/L	1		6010C	Total/NA
Magnesium	93.0		0.20	0.043	mg/L	1		6010C	Total/NA
Manganese	3.1		0.0030	0.00040	mg/L	1		6010C	Total/NA
Nickel	0.010		0.010	0.0013	mg/L	1		6010C	Total/NA
Potassium	28.7		0.50	0.10	mg/L	1		6010C	Total/NA
Sodium	83.9		1.0	0.32	mg/L	1		6010C	Total/NA
Zinc	0.22		0.010	0.0015	mg/L	1		6010C	Total/NA
Bromide	0.76	J	2.0	0.73	mg/L	10		300.0	Total/NA
Chloride	71.3		5.0	2.8	mg/L	10		300.0	Total/NA
Sulfate	142		20.0	3.5	mg/L	10		300.0	Total/NA
Ammonia	7.3		0.10	0.045	mg/L	5		350.1	Total/NA
Chemical Oxygen Demand	107		10.0	5.0	mg/L	1		410.4	Total/NA
Total Organic Carbon	30.4		1.0	0.43	mg/L	1		9060A	Total/NA
Alkalinity, Total	1040	B	5.0	0.79	mg/L	1		SM 2320B	Total/NA
Total hardness as CaCO3	1110		10.0	2.6	mg/L	1		SM 2340C	Total/NA
Total Dissolved Solids	1080		20.0	8.0	mg/L	1		SM 2540C	Total/NA

Client Sample ID: 3-ORA-011-001-06

Lab Sample ID: 480-164381-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	7.9	E	1.0	0.50	ug/L	5		8270D SIM ID	Total/NA
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	7.1	J	19	5.3	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.1		1.9	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	140		1.9	0.96	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	3.4		1.9	0.74	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	3.0		1.9	0.91	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	57		1.9	0.87	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	75		1.9	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	83		1.9	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	9.5		1.9	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	120		1.9	0.58	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	52		1.9	0.60	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	1500		19	7.8	ng/L	10		537 (modified)	Total/NA
Barium	0.22		0.0020	0.00070	mg/L	1		6010C	Total/NA
Boron	2.0	^	0.020	0.0040	mg/L	1		6010C	Total/NA
Cadmium	0.00051	J	0.0020	0.00050	mg/L	1		6010C	Total/NA
Calcium	226		0.50	0.10	mg/L	1		6010C	Total/NA
Copper	0.0052	J	0.010	0.0016	mg/L	1		6010C	Total/NA
Iron	3.9		0.050	0.019	mg/L	1		6010C	Total/NA
Lead	0.0041	J	0.010	0.0030	mg/L	1		6010C	Total/NA
Magnesium	80.6		0.20	0.043	mg/L	1		6010C	Total/NA
Manganese	1.3		0.0030	0.00040	mg/L	1		6010C	Total/NA
Nickel	0.0023	J	0.010	0.0013	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Detection Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-06 (Continued)

Lab Sample ID: 480-164381-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	20.9		0.50	0.10	mg/L	1		6010C	Total/NA
Sodium	64.2		1.0	0.32	mg/L	1		6010C	Total/NA
Zinc	0.0028	J	0.010	0.0015	mg/L	1		6010C	Total/NA
Chloride	50.4		5.0	2.8	mg/L	10		300.0	Total/NA
Sulfate	132		20.0	3.5	mg/L	10		300.0	Total/NA
Ammonia	1.4		0.020	0.0090	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	75.3		10.0	5.0	mg/L	1		410.4	Total/NA
Total Organic Carbon	22.0		1.0	0.43	mg/L	1		9060A	Total/NA
Alkalinity, Total	887	B	5.0	0.79	mg/L	1		SM 2320B	Total/NA
Total hardness as CaCO3	990		10.0	2.6	mg/L	1		SM 2340C	Total/NA
Total Dissolved Solids	1090		20.0	8.0	mg/L	1		SM 2540C	Total/NA

Client Sample ID: 3-ORA-011-001-07

Lab Sample ID: 480-164381-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	0.40	J	0.50	0.30	ug/L	1		8270D_LL_PAH	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	30		20	1.5	ng/L	1		537 (modified)	Total/NA
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	12	J	20	1.7	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.9		2.0	0.48	ng/L	1		537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	16		2.0	0.98	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	5.9		2.0	0.75	ng/L	1		537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.85	J	2.0	0.58	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	2.0		2.0	0.93	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	10		2.0	0.89	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	15		2.0	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	12		2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	8.9		2.0	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	170		2.0	0.60	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	54		2.0	0.79	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	11		2.0	0.61	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.2	J	2.0	0.76	ng/L	1		537 (modified)	Total/NA
Barium	0.18		0.0020	0.00070	mg/L	1		6010C	Total/NA
Boron	0.16	B	0.020	0.0040	mg/L	1		6010C	Total/NA
Calcium	169		0.50	0.10	mg/L	1		6010C	Total/NA
Copper	0.0019	J	0.010	0.0016	mg/L	1		6010C	Total/NA
Iron	7.6		0.050	0.019	mg/L	1		6010C	Total/NA
Lead	0.0045	J	0.010	0.0030	mg/L	1		6010C	Total/NA
Magnesium	17.1		0.20	0.043	mg/L	1		6010C	Total/NA
Manganese	1.0		0.0030	0.00040	mg/L	1		6010C	Total/NA
Potassium	3.3		0.50	0.10	mg/L	1		6010C	Total/NA
Sodium	28.9		1.0	0.32	mg/L	1		6010C	Total/NA
Zinc	0.011		0.010	0.0015	mg/L	1		6010C	Total/NA
Chloride	34.9		2.5	1.4	mg/L	5		300.0	Total/NA
Sulfate	157		10.0	1.7	mg/L	5		300.0	Total/NA
Ammonia	0.21		0.020	0.0090	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	20.4		10.0	5.0	mg/L	1		410.4	Total/NA
Total Organic Carbon	5.6		1.0	0.43	mg/L	1		9060A	Total/NA
Alkalinity, Total	413	B	5.0	0.79	mg/L	1		SM 2320B	Total/NA
Total hardness as CaCO3	570		10.0	2.6	mg/L	1		SM 2340C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Detection Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-07 (Continued)

Lab Sample ID: 480-164381-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	723		10.0	4.0	mg/L	1		SM 2540C	Total/NA

Client Sample ID: 3-ORA-011-001-08

Lab Sample ID: 480-164381-8

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-01

Lab Sample ID: 480-164381-1

Date Collected: 12/17/19 09:00

Matrix: Water

Date Received: 12/18/19 10:30

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	2.5	ng/L		12/23/19 10:56	12/26/19 21:25	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	4.8	ng/L		12/23/19 10:56	12/26/19 21:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	1.3	ng/L		12/23/19 10:56	12/26/19 21:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	1.5	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.43	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorobutanoic acid (PFBA)	ND		1.7	0.87	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.79	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.67	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.52	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.83	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.79	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.70	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.66	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.24	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorooctanesulfonamide (PFOSA)	ND		8.7	8.7	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorooctanesulfonic acid (PFOS)	3.8	I	1.7	0.53	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.71	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluoropentanoic acid (PFPeA)	ND		1.7	0.55	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.80	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.52	ng/L		12/23/19 10:56	12/26/19 21:25	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.68	ng/L		12/23/19 10:56	12/26/19 21:25	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	80		50 - 150	12/23/19 10:56	12/26/19 21:25	1
13C2 PFDoA	69		50 - 150	12/23/19 10:56	12/26/19 21:25	1
13C2 PFHxA	104		50 - 150	12/23/19 10:56	12/26/19 21:25	1
13C2 PFUnA	92		50 - 150	12/23/19 10:56	12/26/19 21:25	1
13C2 PFTeDA	76		50 - 150	12/23/19 10:56	12/26/19 21:25	1
13C4 PFBA	90		25 - 150	12/23/19 10:56	12/26/19 21:25	1
13C4 PFOA	92		50 - 150	12/23/19 10:56	12/26/19 21:25	1
13C4 PFOS	98		50 - 150	12/23/19 10:56	12/26/19 21:25	1
13C4 PFHpA	103		50 - 150	12/23/19 10:56	12/26/19 21:25	1
13C5 PFNA	84		50 - 150	12/23/19 10:56	12/26/19 21:25	1
13C5 PFPeA	106		25 - 150	12/23/19 10:56	12/26/19 21:25	1
13C8 FOSA	68		25 - 150	12/23/19 10:56	12/26/19 21:25	1
18O2 PFHxS	95		50 - 150	12/23/19 10:56	12/26/19 21:25	1
d3-NMeFOSAA	71		50 - 150	12/23/19 10:56	12/26/19 21:25	1
d5-NEtFOSAA	89		50 - 150	12/23/19 10:56	12/26/19 21:25	1
M2-6:2 FTS	83		25 - 150	12/23/19 10:56	12/26/19 21:25	1
M2-8:2 FTS	84		25 - 150	12/23/19 10:56	12/26/19 21:25	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-02

Lab Sample ID: 480-164381-2

Date Collected: 12/17/19 09:05

Matrix: Water

Date Received: 12/18/19 10:30

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		18	2.6	ng/L		12/23/19 10:56	12/26/19 21:33	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		18	4.9	ng/L		12/23/19 10:56	12/26/19 21:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	1.3	ng/L		12/23/19 10:56	12/26/19 21:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	1.5	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.44	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorobutanoic acid (PFBA)	ND		1.8	0.89	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.80	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.69	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.53	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.85	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.81	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.71	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorohexanoic acid (PFHxA)	1.1	J	1.8	0.68	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorooctanesulfonamide (PFOSA)	ND		8.9	8.9	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.54	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.72	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluoropentanoic acid (PFPeA)	ND		1.8	0.56	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.82	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	0.54	ng/L		12/23/19 10:56	12/26/19 21:33	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.70	ng/L		12/23/19 10:56	12/26/19 21:33	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFDA	98		50 - 150				12/23/19 10:56	12/26/19 21:33	1
13C2 PFDoA	72		50 - 150				12/23/19 10:56	12/26/19 21:33	1
13C2 PFHxA	112		50 - 150				12/23/19 10:56	12/26/19 21:33	1
13C2 PFUnA	88		50 - 150				12/23/19 10:56	12/26/19 21:33	1
13C2 PFTeDA	71		50 - 150				12/23/19 10:56	12/26/19 21:33	1
13C4 PFBA	105		25 - 150				12/23/19 10:56	12/26/19 21:33	1
13C4 PFOA	100		50 - 150				12/23/19 10:56	12/26/19 21:33	1
13C4 PFOS	104		50 - 150				12/23/19 10:56	12/26/19 21:33	1
13C4 PFHpA	111		50 - 150				12/23/19 10:56	12/26/19 21:33	1
13C5 PFNA	96		50 - 150				12/23/19 10:56	12/26/19 21:33	1
13C5 PFPeA	108		25 - 150				12/23/19 10:56	12/26/19 21:33	1
13C8 FOSA	72		25 - 150				12/23/19 10:56	12/26/19 21:33	1
18O2 PFHxS	103		50 - 150				12/23/19 10:56	12/26/19 21:33	1
d3-NMeFOSAA	78		50 - 150				12/23/19 10:56	12/26/19 21:33	1
d5-NEtFOSAA	78		50 - 150				12/23/19 10:56	12/26/19 21:33	1
M2-6:2 FTS	91		25 - 150				12/23/19 10:56	12/26/19 21:33	1
M2-8:2 FTS	91		25 - 150				12/23/19 10:56	12/26/19 21:33	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-03

Lab Sample ID: 480-164381-3

Date Collected: 12/17/19 09:15

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.35	ug/L			12/22/19 13:10	1
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			12/22/19 13:10	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			12/22/19 13:10	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			12/22/19 13:10	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/22/19 13:10	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			12/22/19 13:10	1
1,2,3-Trichloropropane	ND		1.0	0.89	ug/L			12/22/19 13:10	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			12/22/19 13:10	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			12/22/19 13:10	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			12/22/19 13:10	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/22/19 13:10	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			12/22/19 13:10	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			12/22/19 13:10	1
2-Butanone (MEK)	ND		10	1.3	ug/L			12/22/19 13:10	1
2-Hexanone	ND		5.0	1.2	ug/L			12/22/19 13:10	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			12/22/19 13:10	1
Acetone	ND		10	3.0	ug/L			12/22/19 13:10	1
Acrylonitrile	ND		5.0	0.83	ug/L			12/22/19 13:10	1
Benzene	ND		1.0	0.41	ug/L			12/22/19 13:10	1
Bromodichloromethane	ND		1.0	0.39	ug/L			12/22/19 13:10	1
Bromoform	ND		1.0	0.26	ug/L			12/22/19 13:10	1
Bromomethane	ND		1.0	0.69	ug/L			12/22/19 13:10	1
Carbon disulfide	ND		1.0	0.19	ug/L			12/22/19 13:10	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			12/22/19 13:10	1
Chlorobenzene	ND		1.0	0.75	ug/L			12/22/19 13:10	1
Chlorobromomethane	ND		1.0	0.87	ug/L			12/22/19 13:10	1
Chloroethane	ND		1.0	0.32	ug/L			12/22/19 13:10	1
Chloroform	ND		1.0	0.34	ug/L			12/22/19 13:10	1
Chloromethane	ND		1.0	0.35	ug/L			12/22/19 13:10	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			12/22/19 13:10	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			12/22/19 13:10	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/22/19 13:10	1
Dibromomethane	ND		1.0	0.41	ug/L			12/22/19 13:10	1
Ethylbenzene	ND		1.0	0.74	ug/L			12/22/19 13:10	1
Iodomethane	ND		1.0	0.30	ug/L			12/22/19 13:10	1
m,p-Xylene	ND		2.0	0.66	ug/L			12/22/19 13:10	1
Methylene Chloride	ND		1.0	0.44	ug/L			12/22/19 13:10	1
o-Xylene	ND		1.0	0.76	ug/L			12/22/19 13:10	1
Styrene	ND		1.0	0.73	ug/L			12/22/19 13:10	1
Tetrachloroethene	ND		1.0	0.36	ug/L			12/22/19 13:10	1
Toluene	ND		1.0	0.51	ug/L			12/22/19 13:10	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			12/22/19 13:10	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			12/22/19 13:10	1
trans-1,4-Dichloro-2-butene	ND		1.0	0.22	ug/L			12/22/19 13:10	1
Trichloroethene	ND		1.0	0.46	ug/L			12/22/19 13:10	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			12/22/19 13:10	1
Vinyl acetate	ND		5.0	0.85	ug/L			12/22/19 13:10	1
Vinyl chloride	ND		1.0	0.90	ug/L			12/22/19 13:10	1
Xylenes, Total	ND		2.0	0.66	ug/L			12/22/19 13:10	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-03

Lab Sample ID: 480-164381-3

Date Collected: 12/17/19 09:15

Matrix: Water

Date Received: 12/18/19 10:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		77 - 120		12/22/19 13:10	1
4-Bromofluorobenzene (Surr)	107		73 - 120		12/22/19 13:10	1
Dibromofluoromethane (Surr)	111		75 - 123		12/22/19 13:10	1
Toluene-d8 (Surr)	100		80 - 120		12/22/19 13:10	1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		12/19/19 15:37	12/20/19 18:20	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	25		15 - 110				12/19/19 15:37	12/20/19 18:20	1

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.50	0.30	ug/L		12/23/19 15:43	12/24/19 17:33	1
Acenaphthylene	ND		0.50	0.34	ug/L		12/23/19 15:43	12/24/19 17:33	1
Anthracene	ND		0.50	0.39	ug/L		12/23/19 15:43	12/24/19 17:33	1
Benzo[a]anthracene	ND		0.50	0.40	ug/L		12/23/19 15:43	12/24/19 17:33	1
Benzo[a]pyrene	ND		0.50	0.33	ug/L		12/23/19 15:43	12/24/19 17:33	1
Benzo[b]fluoranthene	ND		0.50	0.30	ug/L		12/23/19 15:43	12/24/19 17:33	1
Benzo[g,h,i]perylene	ND		0.50	0.37	ug/L		12/23/19 15:43	12/24/19 17:33	1
Benzo[k]fluoranthene	ND		0.50	0.085	ug/L		12/23/19 15:43	12/24/19 17:33	1
Chrysene	ND		0.50	0.32	ug/L		12/23/19 15:43	12/24/19 17:33	1
Dibenz(a,h)anthracene	ND		0.50	0.33	ug/L		12/23/19 15:43	12/24/19 17:33	1
Fluoranthene	ND		0.50	0.36	ug/L		12/23/19 15:43	12/24/19 17:33	1
Fluorene	ND		0.50	0.37	ug/L		12/23/19 15:43	12/24/19 17:33	1
Indeno[1,2,3-cd]pyrene	ND		0.50	0.44	ug/L		12/23/19 15:43	12/24/19 17:33	1
Naphthalene	ND		0.50	0.42	ug/L		12/23/19 15:43	12/24/19 17:33	1
Phenanthrene	ND		0.50	0.38	ug/L		12/23/19 15:43	12/24/19 17:33	1
Pyrene	ND		0.50	0.36	ug/L		12/23/19 15:43	12/24/19 17:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	107		48 - 120				12/23/19 15:43	12/24/19 17:33	1
Nitrobenzene-d5	96		46 - 120				12/23/19 15:43	12/24/19 17:33	1
p-Terphenyl-d14	79		24 - 136				12/23/19 15:43	12/24/19 17:33	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		18	2.6	ng/L		12/23/19 10:56	12/26/19 21:41	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		18	4.9	ng/L		12/23/19 10:56	12/26/19 21:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	1.3	ng/L		12/23/19 10:56	12/26/19 21:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	1.5	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorobutanesulfonic acid (PFBS)	3.7		1.8	0.44	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorobutanoic acid (PFBA)	1.5 J		1.8	0.90	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.81	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.69	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.53	ng/L		12/23/19 10:56	12/26/19 21:41	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-03

Lab Sample ID: 480-164381-3

Date Collected: 12/17/19 09:15

Matrix: Water

Date Received: 12/18/19 10:30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.85	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.82	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorohexanesulfonic acid (PFHxS)	1.4	J	1.8	0.72	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorohexanoic acid (PFHxA)	1.1	J	1.8	0.68	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorooctanesulfonamide (PFOSA)	ND		9.0	9.0	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorooctanesulfonic acid (PFOS)	3.8	I	1.8	0.55	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorooctanoic acid (PFOA)	2.7		1.8	0.73	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluoropentanoic acid (PFPeA)	0.59	J	1.8	0.57	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.83	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluorotridecanoic acid (PFTrIA)	ND		1.8	0.54	ng/L		12/23/19 10:56	12/26/19 21:41	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.70	ng/L		12/23/19 10:56	12/26/19 21:41	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFDA	96		50 - 150				12/23/19 10:56	12/26/19 21:41	1
13C2 PFDaA	73		50 - 150				12/23/19 10:56	12/26/19 21:41	1
13C2 PFHxA	99		50 - 150				12/23/19 10:56	12/26/19 21:41	1
13C2 PFUnA	94		50 - 150				12/23/19 10:56	12/26/19 21:41	1
13C2 PFTeDA	70		50 - 150				12/23/19 10:56	12/26/19 21:41	1
13C4 PFBA	93		25 - 150				12/23/19 10:56	12/26/19 21:41	1
13C4 PFOA	101		50 - 150				12/23/19 10:56	12/26/19 21:41	1
13C4 PFOS	103		50 - 150				12/23/19 10:56	12/26/19 21:41	1
13C4 PFHpA	102		50 - 150				12/23/19 10:56	12/26/19 21:41	1
13C5 PFNA	93		50 - 150				12/23/19 10:56	12/26/19 21:41	1
13C5 PFPeA	100		25 - 150				12/23/19 10:56	12/26/19 21:41	1
13C8 FOSA	88		25 - 150				12/23/19 10:56	12/26/19 21:41	1
18O2 PFHxS	101		50 - 150				12/23/19 10:56	12/26/19 21:41	1
d3-NMeFOSAA	81		50 - 150				12/23/19 10:56	12/26/19 21:41	1
d5-NEtFOSAA	85		50 - 150				12/23/19 10:56	12/26/19 21:41	1
M2-6:2 FTS	87		25 - 150				12/23/19 10:56	12/26/19 21:41	1
M2-8:2 FTS	79		25 - 150				12/23/19 10:56	12/26/19 21:41	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	5.1		0.20	0.060	mg/L		12/20/19 06:10	12/20/19 17:06	1
Antimony	ND		0.020	0.0068	mg/L		12/20/19 06:10	12/21/19 10:31	1
Arsenic	ND		0.015	0.0056	mg/L		12/20/19 06:10	12/20/19 17:06	1
Barium	0.053		0.0020	0.00070	mg/L		12/20/19 06:10	12/20/19 17:06	1
Beryllium	0.00041	J	0.0020	0.00030	mg/L		12/20/19 06:10	12/20/19 17:06	1
Boron	0.028	B	0.020	0.0040	mg/L		12/20/19 06:10	12/20/19 17:06	1
Cadmium	0.00056	J	0.0020	0.00050	mg/L		12/20/19 06:10	12/20/19 17:06	1
Calcium	36.2		0.50	0.10	mg/L		12/20/19 06:10	12/20/19 17:06	1
Chromium	0.0063		0.0040	0.0010	mg/L		12/20/19 06:10	12/20/19 17:06	1
Cobalt	0.0012	J	0.0040	0.00063	mg/L		12/20/19 06:10	12/20/19 17:06	1
Copper	0.0064	J	0.010	0.0016	mg/L		12/20/19 06:10	12/20/19 17:06	1
Iron	3.8		0.050	0.019	mg/L		12/20/19 06:10	12/20/19 17:06	1
Lead	0.0060	J	0.010	0.0030	mg/L		12/20/19 06:10	12/20/19 17:06	1
Magnesium	9.1		0.20	0.043	mg/L		12/20/19 06:10	12/20/19 17:06	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-03

Lab Sample ID: 480-164381-3

Date Collected: 12/17/19 09:15

Matrix: Water

Date Received: 12/18/19 10:30

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.50		0.0030	0.00040	mg/L		12/20/19 06:10	12/20/19 17:06	1
Nickel	0.0036	J	0.010	0.0013	mg/L		12/20/19 06:10	12/20/19 17:06	1
Potassium	2.8		0.50	0.10	mg/L		12/20/19 06:10	12/20/19 17:06	1
Selenium	ND		0.025	0.0087	mg/L		12/20/19 06:10	12/20/19 17:06	1
Silver	ND		0.0060	0.0017	mg/L		12/20/19 06:10	12/20/19 17:06	1
Sodium	25.8		1.0	0.32	mg/L		12/20/19 06:10	12/20/19 17:06	1
Thallium	ND		0.020	0.010	mg/L		12/20/19 06:10	12/20/19 17:06	1
Vanadium	0.0090		0.0050	0.0015	mg/L		12/20/19 06:10	12/20/19 17:06	1
Zinc	0.014		0.010	0.0015	mg/L		12/20/19 06:10	12/20/19 17:06	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/27/19 11:41	12/27/19 15:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.40	0.15	mg/L			12/24/19 19:58	2
Chloride	59.5		1.0	0.56	mg/L			12/24/19 19:58	2
Sulfate	21.4		4.0	0.70	mg/L			12/24/19 19:58	2
Ammonia	0.013	J	0.020	0.0090	mg/L			12/20/19 08:02	1
Chemical Oxygen Demand	15.8		10.0	5.0	mg/L			12/19/19 19:01	1
Total Organic Carbon	2.9		1.0	0.43	mg/L			12/21/19 16:07	1
Alkalinity, Total	92.3	B	5.0	0.79	mg/L			12/24/19 17:23	1
Total hardness as CaCO3	148		4.0	1.1	mg/L			12/19/19 15:40	1
Total Dissolved Solids	250		10.0	4.0	mg/L			12/19/19 14:21	1

Client Sample ID: 3-ORA-011-001-04

Lab Sample ID: 480-164381-4

Date Collected: 12/17/19 12:15

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.35	ug/L			12/22/19 13:33	1
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			12/22/19 13:33	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			12/22/19 13:33	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			12/22/19 13:33	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/22/19 13:33	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			12/22/19 13:33	1
1,2,3-Trichloropropane	ND		1.0	0.89	ug/L			12/22/19 13:33	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			12/22/19 13:33	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			12/22/19 13:33	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			12/22/19 13:33	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/22/19 13:33	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			12/22/19 13:33	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			12/22/19 13:33	1
2-Butanone (MEK)	ND		10	1.3	ug/L			12/22/19 13:33	1
2-Hexanone	ND		5.0	1.2	ug/L			12/22/19 13:33	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			12/22/19 13:33	1
Acetone	ND		10	3.0	ug/L			12/22/19 13:33	1
Acrylonitrile	ND		5.0	0.83	ug/L			12/22/19 13:33	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-04

Lab Sample ID: 480-164381-4

Date Collected: 12/17/19 12:15

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			12/22/19 13:33	1
Bromodichloromethane	ND		1.0	0.39	ug/L			12/22/19 13:33	1
Bromoform	ND		1.0	0.26	ug/L			12/22/19 13:33	1
Bromomethane	ND		1.0	0.69	ug/L			12/22/19 13:33	1
Carbon disulfide	ND		1.0	0.19	ug/L			12/22/19 13:33	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			12/22/19 13:33	1
Chlorobenzene	ND		1.0	0.75	ug/L			12/22/19 13:33	1
Chlorobromomethane	ND		1.0	0.87	ug/L			12/22/19 13:33	1
Chloroethane	ND		1.0	0.32	ug/L			12/22/19 13:33	1
Chloroform	ND		1.0	0.34	ug/L			12/22/19 13:33	1
Chloromethane	ND		1.0	0.35	ug/L			12/22/19 13:33	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			12/22/19 13:33	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			12/22/19 13:33	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/22/19 13:33	1
Dibromomethane	ND		1.0	0.41	ug/L			12/22/19 13:33	1
Ethylbenzene	ND		1.0	0.74	ug/L			12/22/19 13:33	1
Iodomethane	ND		1.0	0.30	ug/L			12/22/19 13:33	1
m,p-Xylene	ND		2.0	0.66	ug/L			12/22/19 13:33	1
Methylene Chloride	ND		1.0	0.44	ug/L			12/22/19 13:33	1
o-Xylene	ND		1.0	0.76	ug/L			12/22/19 13:33	1
Styrene	ND		1.0	0.73	ug/L			12/22/19 13:33	1
Tetrachloroethene	ND		1.0	0.36	ug/L			12/22/19 13:33	1
Toluene	ND		1.0	0.51	ug/L			12/22/19 13:33	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			12/22/19 13:33	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			12/22/19 13:33	1
trans-1,4-Dichloro-2-butene	ND		1.0	0.22	ug/L			12/22/19 13:33	1
Trichloroethene	ND		1.0	0.46	ug/L			12/22/19 13:33	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			12/22/19 13:33	1
Vinyl acetate	ND		5.0	0.85	ug/L			12/22/19 13:33	1
Vinyl chloride	ND		1.0	0.90	ug/L			12/22/19 13:33	1
Xylenes, Total	ND		2.0	0.66	ug/L			12/22/19 13:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		77 - 120		12/22/19 13:33	1
4-Bromofluorobenzene (Surr)	105		73 - 120		12/22/19 13:33	1
Dibromofluoromethane (Surr)	109		75 - 123		12/22/19 13:33	1
Toluene-d8 (Surr)	100		80 - 120		12/22/19 13:33	1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		12/19/19 15:37	12/20/19 18:43	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	28		15 - 110				12/19/19 15:37	12/20/19 18:43	1

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.50	0.30	ug/L		12/23/19 15:43	12/24/19 18:02	1
Acenaphthylene	ND		0.50	0.34	ug/L		12/23/19 15:43	12/24/19 18:02	1
Anthracene	ND		0.50	0.39	ug/L		12/23/19 15:43	12/24/19 18:02	1
Benzo[a]anthracene	ND		0.50	0.40	ug/L		12/23/19 15:43	12/24/19 18:02	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-04

Lab Sample ID: 480-164381-4

Date Collected: 12/17/19 12:15

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		0.50	0.33	ug/L		12/23/19 15:43	12/24/19 18:02	1
Benzo[b]fluoranthene	ND		0.50	0.30	ug/L		12/23/19 15:43	12/24/19 18:02	1
Benzo[g,h,i]perylene	ND		0.50	0.37	ug/L		12/23/19 15:43	12/24/19 18:02	1
Benzo[k]fluoranthene	ND		0.50	0.085	ug/L		12/23/19 15:43	12/24/19 18:02	1
Chrysene	ND		0.50	0.32	ug/L		12/23/19 15:43	12/24/19 18:02	1
Dibenz(a,h)anthracene	ND		0.50	0.33	ug/L		12/23/19 15:43	12/24/19 18:02	1
Fluoranthene	ND		0.50	0.36	ug/L		12/23/19 15:43	12/24/19 18:02	1
Fluorene	ND		0.50	0.37	ug/L		12/23/19 15:43	12/24/19 18:02	1
Indeno[1,2,3-cd]pyrene	ND		0.50	0.44	ug/L		12/23/19 15:43	12/24/19 18:02	1
Naphthalene	ND		0.50	0.42	ug/L		12/23/19 15:43	12/24/19 18:02	1
Phenanthrene	ND		0.50	0.38	ug/L		12/23/19 15:43	12/24/19 18:02	1
Pyrene	ND		0.50	0.36	ug/L		12/23/19 15:43	12/24/19 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	104		48 - 120	12/23/19 15:43	12/24/19 18:02	1
Nitrobenzene-d5	89		46 - 120	12/23/19 15:43	12/24/19 18:02	1
p-Terphenyl-d14	76		24 - 136	12/23/19 15:43	12/24/19 18:02	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		19	2.8	ng/L		12/23/19 10:56	12/26/19 21:49	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		19	5.3	ng/L		12/23/19 10:56	12/26/19 21:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19	1.4	ng/L		12/23/19 10:56	12/26/19 21:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	1.6	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorobutanesulfonic acid (PFBS)	3.6		1.9	0.47	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorobutanoic acid (PFBA)	8.4		1.9	0.96	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.87	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorodecanoic acid (PFDA)	3.0		1.9	0.74	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.57	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.8	J	1.9	0.91	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluoroheptanoic acid (PFHpA)	19		1.9	0.88	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorohexanesulfonic acid (PFHxS)	17		1.9	0.77	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorohexanoic acid (PFHxA)	20		1.9	0.73	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorononanoic acid (PFNA)	4.3		1.9	0.26	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorooctanesulfonamide (PFOSA)	ND		9.6	9.6	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorooctanesulfonic acid (PFOS)	84		1.9	0.59	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorooctanoic acid (PFOA)	48		1.9	0.78	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluoropentanoic acid (PFPeA)	17		1.9	0.61	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.88	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	0.58	ng/L		12/23/19 10:56	12/26/19 21:49	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.75	ng/L		12/23/19 10:56	12/26/19 21:49	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
¹³ C2 PFDA	86		50 - 150	12/23/19 10:56	12/26/19 21:49	1
¹³ C2 PFDoA	80		50 - 150	12/23/19 10:56	12/26/19 21:49	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-04

Lab Sample ID: 480-164381-4

Date Collected: 12/17/19 12:15

Matrix: Water

Date Received: 12/18/19 10:30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	105		50 - 150	12/23/19 10:56	12/26/19 21:49	1
13C2 PFUnA	91		50 - 150	12/23/19 10:56	12/26/19 21:49	1
13C2 PFTeDA	87		50 - 150	12/23/19 10:56	12/26/19 21:49	1
13C4 PFBA	70		25 - 150	12/23/19 10:56	12/26/19 21:49	1
13C4 PFOA	99		50 - 150	12/23/19 10:56	12/26/19 21:49	1
13C4 PFOS	103		50 - 150	12/23/19 10:56	12/26/19 21:49	1
13C4 PFHpA	107		50 - 150	12/23/19 10:56	12/26/19 21:49	1
13C5 PFNA	100		50 - 150	12/23/19 10:56	12/26/19 21:49	1
13C5 PFPeA	96		25 - 150	12/23/19 10:56	12/26/19 21:49	1
13C8 FOSA	88		25 - 150	12/23/19 10:56	12/26/19 21:49	1
18O2 PFHxS	104		50 - 150	12/23/19 10:56	12/26/19 21:49	1
d3-NMeFOSAA	86		50 - 150	12/23/19 10:56	12/26/19 21:49	1
d5-NEtFOSAA	85		50 - 150	12/23/19 10:56	12/26/19 21:49	1
M2-6:2 FTS	98		25 - 150	12/23/19 10:56	12/26/19 21:49	1
M2-8:2 FTS	100		25 - 150	12/23/19 10:56	12/26/19 21:49	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		12/20/19 06:10	12/20/19 17:10	1
Antimony	ND		0.020	0.0068	mg/L		12/20/19 06:10	12/21/19 10:35	1
Arsenic	ND		0.015	0.0056	mg/L		12/20/19 06:10	12/20/19 17:10	1
Barium	0.033		0.0020	0.00070	mg/L		12/20/19 06:10	12/20/19 17:10	1
Beryllium	ND		0.0020	0.00030	mg/L		12/20/19 06:10	12/20/19 17:10	1
Boron	0.32	B	0.020	0.0040	mg/L		12/20/19 06:10	12/20/19 17:10	1
Cadmium	0.00050	J	0.0020	0.00050	mg/L		12/20/19 06:10	12/20/19 17:10	1
Calcium	359		0.50	0.10	mg/L		12/20/19 06:10	12/20/19 17:10	1
Chromium	ND		0.0040	0.0010	mg/L		12/20/19 06:10	12/20/19 17:10	1
Cobalt	ND		0.0040	0.00063	mg/L		12/20/19 06:10	12/20/19 17:10	1
Copper	0.015		0.010	0.0016	mg/L		12/20/19 06:10	12/20/19 17:10	1
Iron	0.11		0.050	0.019	mg/L		12/20/19 06:10	12/20/19 17:10	1
Lead	0.0033	J	0.010	0.0030	mg/L		12/20/19 06:10	12/20/19 17:10	1
Magnesium	27.0		0.20	0.043	mg/L		12/20/19 06:10	12/20/19 17:10	1
Manganese	0.36		0.0030	0.00040	mg/L		12/20/19 06:10	12/20/19 17:10	1
Nickel	0.0081	J	0.010	0.0013	mg/L		12/20/19 06:10	12/20/19 17:10	1
Potassium	3.9		0.50	0.10	mg/L		12/20/19 06:10	12/20/19 17:10	1
Selenium	ND		0.025	0.0087	mg/L		12/20/19 06:10	12/20/19 17:10	1
Silver	ND		0.0060	0.0017	mg/L		12/20/19 06:10	12/20/19 17:10	1
Sodium	16.7		1.0	0.32	mg/L		12/20/19 06:10	12/20/19 17:10	1
Thallium	ND		0.020	0.010	mg/L		12/20/19 06:10	12/20/19 17:10	1
Vanadium	ND		0.0050	0.0015	mg/L		12/20/19 06:10	12/20/19 17:10	1
Zinc	0.37		0.010	0.0015	mg/L		12/20/19 06:10	12/20/19 17:10	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/27/19 11:41	12/27/19 15:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		2.0	0.73	mg/L			12/24/19 20:12	10
Chloride	25.0		5.0	2.8	mg/L			12/24/19 20:12	10

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-04

Lab Sample ID: 480-164381-4

Date Collected: 12/17/19 12:15

Matrix: Water

Date Received: 12/18/19 10:30

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	661		20.0	3.5	mg/L			12/24/19 20:12	10
Ammonia	ND		0.020	0.0090	mg/L			12/20/19 08:02	1
Chemical Oxygen Demand	26.8		10.0	5.0	mg/L			12/19/19 19:01	1
Total Organic Carbon	8.9		1.0	0.43	mg/L			12/21/19 16:34	1
Alkalinity, Total	418	B	5.0	0.79	mg/L			12/24/19 17:30	1
Total hardness as CaCO3	1110		10.0	2.6	mg/L			12/19/19 15:40	1
Total Dissolved Solids	1400		20.0	8.0	mg/L			12/19/19 14:21	1

Client Sample ID: 3-ORA-011-001-05

Lab Sample ID: 480-164381-5

Date Collected: 12/17/19 13:45

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		4.0	1.4	ug/L			12/22/19 13:56	4
1,1,1-Trichloroethane	ND		4.0	3.3	ug/L			12/22/19 13:56	4
1,1,2,2-Tetrachloroethane	ND		4.0	0.84	ug/L			12/22/19 13:56	4
1,1,2-Trichloroethane	ND		4.0	0.92	ug/L			12/22/19 13:56	4
1,1-Dichloroethane	ND		4.0	1.5	ug/L			12/22/19 13:56	4
1,1-Dichloroethene	ND		4.0	1.2	ug/L			12/22/19 13:56	4
1,2,3-Trichloropropane	ND		4.0	3.6	ug/L			12/22/19 13:56	4
1,2-Dibromo-3-Chloropropane	ND		4.0	1.6	ug/L			12/22/19 13:56	4
1,2-Dibromoethane	ND		4.0	2.9	ug/L			12/22/19 13:56	4
1,2-Dichlorobenzene	ND		4.0	3.2	ug/L			12/22/19 13:56	4
1,2-Dichloroethane	ND		4.0	0.84	ug/L			12/22/19 13:56	4
1,2-Dichloropropane	ND		4.0	2.9	ug/L			12/22/19 13:56	4
1,4-Dichlorobenzene	ND		4.0	3.4	ug/L			12/22/19 13:56	4
2-Butanone (MEK)	ND		40	5.3	ug/L			12/22/19 13:56	4
2-Hexanone	ND		20	5.0	ug/L			12/22/19 13:56	4
4-Methyl-2-pentanone (MIBK)	ND		20	8.4	ug/L			12/22/19 13:56	4
Acetone	ND		40	12	ug/L			12/22/19 13:56	4
Acrylonitrile	ND		20	3.3	ug/L			12/22/19 13:56	4
Benzene	ND		4.0	1.6	ug/L			12/22/19 13:56	4
Bromodichloromethane	ND		4.0	1.6	ug/L			12/22/19 13:56	4
Bromoform	ND		4.0	1.0	ug/L			12/22/19 13:56	4
Bromomethane	ND		4.0	2.8	ug/L			12/22/19 13:56	4
Carbon disulfide	ND		4.0	0.76	ug/L			12/22/19 13:56	4
Carbon tetrachloride	ND		4.0	1.1	ug/L			12/22/19 13:56	4
Chlorobenzene	ND		4.0	3.0	ug/L			12/22/19 13:56	4
Chlorobromomethane	ND		4.0	3.5	ug/L			12/22/19 13:56	4
Chloroethane	ND		4.0	1.3	ug/L			12/22/19 13:56	4
Chloroform	ND		4.0	1.4	ug/L			12/22/19 13:56	4
Chloromethane	ND		4.0	1.4	ug/L			12/22/19 13:56	4
cis-1,2-Dichloroethene	ND		4.0	3.2	ug/L			12/22/19 13:56	4
cis-1,3-Dichloropropene	ND		4.0	1.4	ug/L			12/22/19 13:56	4
Dibromochloromethane	ND		4.0	1.3	ug/L			12/22/19 13:56	4
Dibromomethane	ND		4.0	1.6	ug/L			12/22/19 13:56	4
Ethylbenzene	ND		4.0	3.0	ug/L			12/22/19 13:56	4
Iodomethane	ND		4.0	1.2	ug/L			12/22/19 13:56	4
m,p-Xylene	ND		8.0	2.6	ug/L			12/22/19 13:56	4

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-05

Lab Sample ID: 480-164381-5

Date Collected: 12/17/19 13:45

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	3.4	J	4.0	1.8	ug/L			12/22/19 13:56	4
o-Xylene	ND		4.0	3.0	ug/L			12/22/19 13:56	4
Styrene	ND		4.0	2.9	ug/L			12/22/19 13:56	4
Tetrachloroethene	ND		4.0	1.4	ug/L			12/22/19 13:56	4
Toluene	ND		4.0	2.0	ug/L			12/22/19 13:56	4
trans-1,2-Dichloroethene	ND		4.0	3.6	ug/L			12/22/19 13:56	4
trans-1,3-Dichloropropene	ND		4.0	1.5	ug/L			12/22/19 13:56	4
trans-1,4-Dichloro-2-butene	ND		4.0	0.88	ug/L			12/22/19 13:56	4
Trichloroethene	ND		4.0	1.8	ug/L			12/22/19 13:56	4
Trichlorofluoromethane	ND		4.0	3.5	ug/L			12/22/19 13:56	4
Vinyl acetate	ND		20	3.4	ug/L			12/22/19 13:56	4
Vinyl chloride	ND		4.0	3.6	ug/L			12/22/19 13:56	4
Xylenes, Total	ND		8.0	2.6	ug/L			12/22/19 13:56	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		77 - 120		12/22/19 13:56	4
4-Bromofluorobenzene (Surr)	105		73 - 120		12/22/19 13:56	4
Dibromofluoromethane (Surr)	111		75 - 123		12/22/19 13:56	4
Toluene-d8 (Surr)	101		80 - 120		12/22/19 13:56	4

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	12	E	1.0	0.50	ug/L		12/19/19 15:37	12/23/19 17:57	5
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	40		15 - 110				12/19/19 15:37	12/23/19 17:57	5

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.50	0.30	ug/L		12/23/19 15:43	12/24/19 18:30	1
Acenaphthylene	ND		0.50	0.34	ug/L		12/23/19 15:43	12/24/19 18:30	1
Anthracene	ND		0.50	0.39	ug/L		12/23/19 15:43	12/24/19 18:30	1
Benzo[a]anthracene	ND		0.50	0.40	ug/L		12/23/19 15:43	12/24/19 18:30	1
Benzo[a]pyrene	ND		0.50	0.33	ug/L		12/23/19 15:43	12/24/19 18:30	1
Benzo[b]fluoranthene	ND		0.50	0.30	ug/L		12/23/19 15:43	12/24/19 18:30	1
Benzo[g,h,i]perylene	ND		0.50	0.37	ug/L		12/23/19 15:43	12/24/19 18:30	1
Benzo[k]fluoranthene	ND		0.50	0.085	ug/L		12/23/19 15:43	12/24/19 18:30	1
Chrysene	ND		0.50	0.32	ug/L		12/23/19 15:43	12/24/19 18:30	1
Dibenz(a,h)anthracene	ND		0.50	0.33	ug/L		12/23/19 15:43	12/24/19 18:30	1
Fluoranthene	ND		0.50	0.36	ug/L		12/23/19 15:43	12/24/19 18:30	1
Fluorene	ND		0.50	0.37	ug/L		12/23/19 15:43	12/24/19 18:30	1
Indeno[1,2,3-cd]pyrene	ND		0.50	0.44	ug/L		12/23/19 15:43	12/24/19 18:30	1
Naphthalene	ND		0.50	0.42	ug/L		12/23/19 15:43	12/24/19 18:30	1
Phenanthrene	ND		0.50	0.38	ug/L		12/23/19 15:43	12/24/19 18:30	1
Pyrene	ND		0.50	0.36	ug/L		12/23/19 15:43	12/24/19 18:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	92		48 - 120				12/23/19 15:43	12/24/19 18:30	1
Nitrobenzene-d5	82		46 - 120				12/23/19 15:43	12/24/19 18:30	1
p-Terphenyl-d14	56		24 - 136				12/23/19 15:43	12/24/19 18:30	1

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Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-05

Lab Sample ID: 480-164381-5

Date Collected: 12/17/19 13:45

Matrix: Water

Date Received: 12/18/19 10:30

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		18	2.7	ng/L		12/23/19 10:56	12/26/19 21:57	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	11	J	18	5.0	ng/L		12/23/19 10:56	12/26/19 21:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	18		18	1.4	ng/L		12/23/19 10:56	12/26/19 21:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	7.3	J	18	1.6	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluorobutanesulfonic acid (PFBS)	12		1.8	0.45	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluorobutanoic acid (PFBA)	96		1.8	0.92	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.82	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluorodecanoic acid (PFDA)	6.0		1.8	0.70	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.54	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	4.2		1.8	0.87	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluoroheptanoic acid (PFHpA)	86		1.8	0.83	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluorohexanesulfonic acid (PFHxS)	140		1.8	0.73	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluorohexanoic acid (PFHxA)	160		1.8	0.70	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluorononanoic acid (PFNA)	13		1.8	0.25	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluorooctanesulfonamide (PFOSA)	ND		9.2	9.2	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluorooctanesulfonic acid (PFOS)	210		1.8	0.56	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluoropentanoic acid (PFPeA)	57		1.8	0.58	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.84	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluorotridecanoic acid (PFTrIA)	ND		1.8	0.55	ng/L		12/23/19 10:56	12/26/19 21:57	1
Perfluoroundecanoic acid (PFUnA)	1.6	J	1.8	0.71	ng/L		12/23/19 10:56	12/26/19 21:57	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	110		50 - 150	12/23/19 10:56	12/26/19 21:57	1
13C2 PFDoA	100		50 - 150	12/23/19 10:56	12/26/19 21:57	1
13C2 PFHxA	76		50 - 150	12/23/19 10:56	12/26/19 21:57	1
13C2 PFUnA	115		50 - 150	12/23/19 10:56	12/26/19 21:57	1
13C2 PFTeDA	98		50 - 150	12/23/19 10:56	12/26/19 21:57	1
13C4 PFBA	42		25 - 150	12/23/19 10:56	12/26/19 21:57	1
13C4 PFOS	100		50 - 150	12/23/19 10:56	12/26/19 21:57	1
13C4 PFHpA	92		50 - 150	12/23/19 10:56	12/26/19 21:57	1
13C5 PFNA	102		50 - 150	12/23/19 10:56	12/26/19 21:57	1
13C5 PFPeA	67		25 - 150	12/23/19 10:56	12/26/19 21:57	1
13C8 FOSA	82		25 - 150	12/23/19 10:56	12/26/19 21:57	1
18O2 PFHxS	98		50 - 150	12/23/19 10:56	12/26/19 21:57	1
d3-NMeFOSAA	112		50 - 150	12/23/19 10:56	12/26/19 21:57	1
d5-NEtFOSAA	121		50 - 150	12/23/19 10:56	12/26/19 21:57	1
M2-6:2 FTS	166	*	25 - 150	12/23/19 10:56	12/26/19 21:57	1
M2-8:2 FTS	165	*	25 - 150	12/23/19 10:56	12/26/19 21:57	1

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1900		18	7.4	ng/L		12/23/19 10:56	12/27/19 15:40	10

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-05

Lab Sample ID: 480-164381-5

Date Collected: 12/17/19 13:45

Matrix: Water

Date Received: 12/18/19 10:30

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	97		50 - 150	12/23/19 10:56	12/27/19 15:40	10

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		12/20/19 06:10	12/20/19 17:28	1
Antimony	ND		0.020	0.0068	mg/L		12/20/19 06:10	12/21/19 10:54	1
Arsenic	ND		0.015	0.0056	mg/L		12/20/19 06:10	12/20/19 17:28	1
Barium	0.44		0.0020	0.00070	mg/L		12/20/19 06:10	12/20/19 17:28	1
Beryllium	ND		0.0020	0.00030	mg/L		12/20/19 06:10	12/20/19 17:28	1
Boron	2.6	B	0.020	0.0040	mg/L		12/20/19 06:10	12/20/19 17:28	1
Cadmium	0.0011	J	0.0020	0.00050	mg/L		12/20/19 06:10	12/20/19 17:28	1
Calcium	256		0.50	0.10	mg/L		12/20/19 06:10	12/20/19 17:28	1
Chromium	0.0016	J	0.0040	0.0010	mg/L		12/20/19 06:10	12/20/19 17:28	1
Cobalt	0.0018	J	0.0040	0.00063	mg/L		12/20/19 06:10	12/20/19 17:28	1
Copper	0.014		0.010	0.0016	mg/L		12/20/19 06:10	12/20/19 17:28	1
Iron	1.0		0.050	0.019	mg/L		12/20/19 06:10	12/20/19 17:28	1
Lead	0.0096	J	0.010	0.0030	mg/L		12/20/19 06:10	12/20/19 17:28	1
Magnesium	93.0		0.20	0.043	mg/L		12/20/19 06:10	12/20/19 17:28	1
Manganese	3.1		0.0030	0.00040	mg/L		12/20/19 06:10	12/20/19 17:28	1
Nickel	0.010		0.010	0.0013	mg/L		12/20/19 06:10	12/20/19 17:28	1
Potassium	28.7		0.50	0.10	mg/L		12/20/19 06:10	12/20/19 17:28	1
Selenium	ND		0.025	0.0087	mg/L		12/20/19 06:10	12/20/19 17:28	1
Silver	ND		0.0060	0.0017	mg/L		12/20/19 06:10	12/20/19 17:28	1
Sodium	83.9		1.0	0.32	mg/L		12/20/19 06:10	12/20/19 17:28	1
Thallium	ND		0.020	0.010	mg/L		12/20/19 06:10	12/20/19 17:28	1
Vanadium	ND		0.0050	0.0015	mg/L		12/20/19 06:10	12/20/19 17:28	1
Zinc	0.22		0.010	0.0015	mg/L		12/20/19 06:10	12/20/19 17:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/27/19 11:41	12/27/19 15:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.76	J	2.0	0.73	mg/L			12/24/19 20:26	10
Chloride	71.3		5.0	2.8	mg/L			12/24/19 20:26	10
Sulfate	142		20.0	3.5	mg/L			12/24/19 20:26	10
Ammonia	7.3		0.10	0.045	mg/L			12/20/19 08:53	5
Chemical Oxygen Demand	107		10.0	5.0	mg/L			12/19/19 19:01	1
Total Organic Carbon	30.4		1.0	0.43	mg/L			12/21/19 17:01	1
Alkalinity, Total	1040	B	5.0	0.79	mg/L			12/27/19 16:58	1
Total hardness as CaCO3	1110		10.0	2.6	mg/L			12/19/19 15:40	1
Total Dissolved Solids	1080		20.0	8.0	mg/L			12/19/19 14:21	1

Client Sample ID: 3-ORA-011-001-06

Lab Sample ID: 480-164381-6

Date Collected: 12/17/19 14:30

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		2.0	0.70	ug/L			12/22/19 14:19	2
1,1,1-Trichloroethane	ND		2.0	1.6	ug/L			12/22/19 14:19	2

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-06

Lab Sample ID: 480-164381-6

Date Collected: 12/17/19 14:30

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		2.0	0.42	ug/L			12/22/19 14:19	2
1,1,2-Trichloroethane	ND		2.0	0.46	ug/L			12/22/19 14:19	2
1,1-Dichloroethane	ND		2.0	0.76	ug/L			12/22/19 14:19	2
1,1-Dichloroethene	ND		2.0	0.58	ug/L			12/22/19 14:19	2
1,2,3-Trichloropropane	ND		2.0	1.8	ug/L			12/22/19 14:19	2
1,2-Dibromo-3-Chloropropane	ND		2.0	0.78	ug/L			12/22/19 14:19	2
1,2-Dibromoethane	ND		2.0	1.5	ug/L			12/22/19 14:19	2
1,2-Dichlorobenzene	ND		2.0	1.6	ug/L			12/22/19 14:19	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			12/22/19 14:19	2
1,2-Dichloropropane	ND		2.0	1.4	ug/L			12/22/19 14:19	2
1,4-Dichlorobenzene	ND		2.0	1.7	ug/L			12/22/19 14:19	2
2-Butanone (MEK)	ND		20	2.6	ug/L			12/22/19 14:19	2
2-Hexanone	ND		10	2.5	ug/L			12/22/19 14:19	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.2	ug/L			12/22/19 14:19	2
Acetone	ND		20	6.0	ug/L			12/22/19 14:19	2
Acrylonitrile	ND		10	1.7	ug/L			12/22/19 14:19	2
Benzene	ND		2.0	0.82	ug/L			12/22/19 14:19	2
Bromodichloromethane	ND		2.0	0.78	ug/L			12/22/19 14:19	2
Bromoform	ND		2.0	0.52	ug/L			12/22/19 14:19	2
Bromomethane	ND		2.0	1.4	ug/L			12/22/19 14:19	2
Carbon disulfide	ND		2.0	0.38	ug/L			12/22/19 14:19	2
Carbon tetrachloride	ND		2.0	0.54	ug/L			12/22/19 14:19	2
Chlorobenzene	ND		2.0	1.5	ug/L			12/22/19 14:19	2
Chlorobromomethane	ND		2.0	1.7	ug/L			12/22/19 14:19	2
Chloroethane	ND		2.0	0.64	ug/L			12/22/19 14:19	2
Chloroform	ND		2.0	0.68	ug/L			12/22/19 14:19	2
Chloromethane	ND		2.0	0.70	ug/L			12/22/19 14:19	2
cis-1,2-Dichloroethene	ND		2.0	1.6	ug/L			12/22/19 14:19	2
cis-1,3-Dichloropropene	ND		2.0	0.72	ug/L			12/22/19 14:19	2
Dibromochloromethane	ND		2.0	0.64	ug/L			12/22/19 14:19	2
Dibromomethane	ND		2.0	0.82	ug/L			12/22/19 14:19	2
Ethylbenzene	ND		2.0	1.5	ug/L			12/22/19 14:19	2
Iodomethane	ND		2.0	0.60	ug/L			12/22/19 14:19	2
m,p-Xylene	ND		4.0	1.3	ug/L			12/22/19 14:19	2
Methylene Chloride	ND		2.0	0.88	ug/L			12/22/19 14:19	2
o-Xylene	ND		2.0	1.5	ug/L			12/22/19 14:19	2
Styrene	ND		2.0	1.5	ug/L			12/22/19 14:19	2
Tetrachloroethene	ND		2.0	0.72	ug/L			12/22/19 14:19	2
Toluene	ND		2.0	1.0	ug/L			12/22/19 14:19	2
trans-1,2-Dichloroethene	ND		2.0	1.8	ug/L			12/22/19 14:19	2
trans-1,3-Dichloropropene	ND		2.0	0.74	ug/L			12/22/19 14:19	2
trans-1,4-Dichloro-2-butene	ND		2.0	0.44	ug/L			12/22/19 14:19	2
Trichloroethene	ND		2.0	0.92	ug/L			12/22/19 14:19	2
Trichlorofluoromethane	ND		2.0	1.8	ug/L			12/22/19 14:19	2
Vinyl acetate	ND		10	1.7	ug/L			12/22/19 14:19	2
Vinyl chloride	ND		2.0	1.8	ug/L			12/22/19 14:19	2
Xylenes, Total	ND		4.0	1.3	ug/L			12/22/19 14:19	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		77 - 120		12/22/19 14:19	2

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-06

Lab Sample ID: 480-164381-6

Date Collected: 12/17/19 14:30

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		73 - 120		12/22/19 14:19	2
Dibromofluoromethane (Surr)	112		75 - 123		12/22/19 14:19	2
Toluene-d8 (Surr)	101		80 - 120		12/22/19 14:19	2

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	7.9	E	1.0	0.50	ug/L		12/19/19 15:37	12/23/19 18:20	5
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	35		15 - 110				12/19/19 15:37	12/23/19 18:20	5

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.50	0.30	ug/L		12/23/19 15:43	12/24/19 18:59	1
Acenaphthylene	ND		0.50	0.34	ug/L		12/23/19 15:43	12/24/19 18:59	1
Anthracene	ND		0.50	0.39	ug/L		12/23/19 15:43	12/24/19 18:59	1
Benzo[a]anthracene	ND		0.50	0.40	ug/L		12/23/19 15:43	12/24/19 18:59	1
Benzo[a]pyrene	ND		0.50	0.33	ug/L		12/23/19 15:43	12/24/19 18:59	1
Benzo[b]fluoranthene	ND		0.50	0.30	ug/L		12/23/19 15:43	12/24/19 18:59	1
Benzo[g,h,i]perylene	ND		0.50	0.37	ug/L		12/23/19 15:43	12/24/19 18:59	1
Benzo[k]fluoranthene	ND		0.50	0.085	ug/L		12/23/19 15:43	12/24/19 18:59	1
Chrysene	ND		0.50	0.32	ug/L		12/23/19 15:43	12/24/19 18:59	1
Dibenz(a,h)anthracene	ND		0.50	0.33	ug/L		12/23/19 15:43	12/24/19 18:59	1
Fluoranthene	ND		0.50	0.36	ug/L		12/23/19 15:43	12/24/19 18:59	1
Fluorene	ND		0.50	0.37	ug/L		12/23/19 15:43	12/24/19 18:59	1
Indeno[1,2,3-cd]pyrene	ND		0.50	0.44	ug/L		12/23/19 15:43	12/24/19 18:59	1
Naphthalene	ND		0.50	0.42	ug/L		12/23/19 15:43	12/24/19 18:59	1
Phenanthrene	ND		0.50	0.38	ug/L		12/23/19 15:43	12/24/19 18:59	1
Pyrene	ND		0.50	0.36	ug/L		12/23/19 15:43	12/24/19 18:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	96		48 - 120				12/23/19 15:43	12/24/19 18:59	1
Nitrobenzene-d5	88		46 - 120				12/23/19 15:43	12/24/19 18:59	1
p-Terphenyl-d14	61		24 - 136				12/23/19 15:43	12/24/19 18:59	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		19	2.8	ng/L		12/23/19 10:56	12/26/19 22:06	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	7.1	J	19	5.3	ng/L		12/23/19 10:56	12/26/19 22:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19	1.4	ng/L		12/23/19 10:56	12/26/19 22:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	1.6	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluorobutanesulfonic acid (PFBS)	6.1		1.9	0.47	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluorobutanoic acid (PFBA)	140		1.9	0.96	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.86	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluorodecanoic acid (PFDA)	3.4		1.9	0.74	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		12/23/19 10:56	12/26/19 22:06	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-06

Lab Sample ID: 480-164381-6

Date Collected: 12/17/19 14:30

Matrix: Water

Date Received: 12/18/19 10:30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic Acid (PFHpS)	3.0		1.9	0.91	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluoroheptanoic acid (PFHpA)	57		1.9	0.87	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluorohexanesulfonic acid (PFHxS)	75		1.9	0.77	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluorohexanoic acid (PFHxA)	83		1.9	0.73	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluorononanoic acid (PFNA)	9.5		1.9	0.26	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluorooctanesulfonamide (PFOSA)	ND		9.6	9.6	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluorooctanesulfonic acid (PFOS)	120		1.9	0.58	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluoropentanoic acid (PFPeA)	52		1.9	0.60	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.88	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluorotridecanoic acid (PFTrIA)	ND		1.9	0.57	ng/L		12/23/19 10:56	12/26/19 22:06	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.75	ng/L		12/23/19 10:56	12/26/19 22:06	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	105		50 - 150	12/23/19 10:56	12/26/19 22:06	1
13C2 PFDoA	95		50 - 150	12/23/19 10:56	12/26/19 22:06	1
13C2 PFHxA	85		50 - 150	12/23/19 10:56	12/26/19 22:06	1
13C2 PFUnA	95		50 - 150	12/23/19 10:56	12/26/19 22:06	1
13C2 PFTeDA	97		50 - 150	12/23/19 10:56	12/26/19 22:06	1
13C4 PFBA	48		25 - 150	12/23/19 10:56	12/26/19 22:06	1
13C4 PFOS	109		50 - 150	12/23/19 10:56	12/26/19 22:06	1
13C4 PFHpA	101		50 - 150	12/23/19 10:56	12/26/19 22:06	1
13C5 PFNA	109		50 - 150	12/23/19 10:56	12/26/19 22:06	1
13C5 PFPeA	73		25 - 150	12/23/19 10:56	12/26/19 22:06	1
13C8 FOSA	76		25 - 150	12/23/19 10:56	12/26/19 22:06	1
18O2 PFHxS	102		50 - 150	12/23/19 10:56	12/26/19 22:06	1
d3-NMeFOSAA	102		50 - 150	12/23/19 10:56	12/26/19 22:06	1
d5-NEtFOSAA	88		50 - 150	12/23/19 10:56	12/26/19 22:06	1
M2-6:2 FTS	136		25 - 150	12/23/19 10:56	12/26/19 22:06	1
M2-8:2 FTS	118		25 - 150	12/23/19 10:56	12/26/19 22:06	1

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1500		19	7.8	ng/L		12/23/19 10:56	12/27/19 15:48	10
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	107		50 - 150				12/23/19 10:56	12/27/19 15:48	10

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		12/20/19 06:10	12/20/19 17:43	1
Antimony	ND		0.020	0.0068	mg/L		12/20/19 06:10	12/20/19 17:43	1
Arsenic	ND		0.015	0.0056	mg/L		12/20/19 06:10	12/20/19 17:43	1
Barium	0.22		0.0020	0.00070	mg/L		12/20/19 06:10	12/20/19 17:43	1
Beryllium	ND		0.0020	0.00030	mg/L		12/20/19 06:10	12/20/19 17:43	1
Boron	2.0	^	0.020	0.0040	mg/L		12/20/19 06:10	12/21/19 11:08	1
Cadmium	0.00051	J	0.0020	0.00050	mg/L		12/20/19 06:10	12/20/19 17:43	1
Calcium	226		0.50	0.10	mg/L		12/20/19 06:10	12/20/19 17:43	1
Chromium	ND		0.0040	0.0010	mg/L		12/20/19 06:10	12/20/19 17:43	1
Cobalt	ND		0.0040	0.00063	mg/L		12/20/19 06:10	12/20/19 17:43	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-06

Lab Sample ID: 480-164381-6

Date Collected: 12/17/19 14:30

Matrix: Water

Date Received: 12/18/19 10:30

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.0052	J	0.010	0.0016	mg/L		12/20/19 06:10	12/20/19 17:43	1
Iron	3.9		0.050	0.019	mg/L		12/20/19 06:10	12/20/19 17:43	1
Lead	0.0041	J	0.010	0.0030	mg/L		12/20/19 06:10	12/20/19 17:43	1
Magnesium	80.6		0.20	0.043	mg/L		12/20/19 06:10	12/20/19 17:43	1
Manganese	1.3		0.0030	0.00040	mg/L		12/20/19 06:10	12/20/19 17:43	1
Nickel	0.0023	J	0.010	0.0013	mg/L		12/20/19 06:10	12/20/19 17:43	1
Potassium	20.9		0.50	0.10	mg/L		12/20/19 06:10	12/20/19 17:43	1
Selenium	ND		0.025	0.0087	mg/L		12/20/19 06:10	12/20/19 17:43	1
Silver	ND		0.0060	0.0017	mg/L		12/20/19 06:10	12/20/19 17:43	1
Sodium	64.2		1.0	0.32	mg/L		12/20/19 06:10	12/20/19 17:43	1
Thallium	ND		0.020	0.010	mg/L		12/20/19 06:10	12/20/19 17:43	1
Vanadium	ND		0.0050	0.0015	mg/L		12/20/19 06:10	12/20/19 17:43	1
Zinc	0.0028	J	0.010	0.0015	mg/L		12/20/19 06:10	12/20/19 17:43	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/27/19 11:41	12/27/19 16:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		2.0	0.73	mg/L			12/24/19 20:41	10
Chloride	50.4		5.0	2.8	mg/L			12/24/19 20:41	10
Sulfate	132		20.0	3.5	mg/L			12/24/19 20:41	10
Ammonia	1.4		0.020	0.0090	mg/L			12/20/19 08:08	1
Chemical Oxygen Demand	75.3		10.0	5.0	mg/L			12/19/19 19:01	1
Total Organic Carbon	22.0		1.0	0.43	mg/L			12/21/19 19:20	1
Alkalinity, Total	887	B	5.0	0.79	mg/L			12/27/19 17:08	1
Total hardness as CaCO3	990		10.0	2.6	mg/L			12/19/19 15:40	1
Total Dissolved Solids	1090		20.0	8.0	mg/L			12/19/19 14:21	1

Client Sample ID: 3-ORA-011-001-07

Lab Sample ID: 480-164381-7

Date Collected: 12/17/19 16:00

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.35	ug/L			12/22/19 14:42	1
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			12/22/19 14:42	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			12/22/19 14:42	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			12/22/19 14:42	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/22/19 14:42	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			12/22/19 14:42	1
1,2,3-Trichloropropane	ND		1.0	0.89	ug/L			12/22/19 14:42	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			12/22/19 14:42	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			12/22/19 14:42	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			12/22/19 14:42	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/22/19 14:42	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			12/22/19 14:42	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			12/22/19 14:42	1
2-Butanone (MEK)	ND		10	1.3	ug/L			12/22/19 14:42	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-07

Lab Sample ID: 480-164381-7

Date Collected: 12/17/19 16:00

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	ND		5.0	1.2	ug/L			12/22/19 14:42	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			12/22/19 14:42	1
Acetone	ND		10	3.0	ug/L			12/22/19 14:42	1
Acrylonitrile	ND		5.0	0.83	ug/L			12/22/19 14:42	1
Benzene	ND		1.0	0.41	ug/L			12/22/19 14:42	1
Bromodichloromethane	ND		1.0	0.39	ug/L			12/22/19 14:42	1
Bromoform	ND		1.0	0.26	ug/L			12/22/19 14:42	1
Bromomethane	ND		1.0	0.69	ug/L			12/22/19 14:42	1
Carbon disulfide	ND		1.0	0.19	ug/L			12/22/19 14:42	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			12/22/19 14:42	1
Chlorobenzene	ND		1.0	0.75	ug/L			12/22/19 14:42	1
Chlorobromomethane	ND		1.0	0.87	ug/L			12/22/19 14:42	1
Chloroethane	ND		1.0	0.32	ug/L			12/22/19 14:42	1
Chloroform	ND		1.0	0.34	ug/L			12/22/19 14:42	1
Chloromethane	ND		1.0	0.35	ug/L			12/22/19 14:42	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			12/22/19 14:42	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			12/22/19 14:42	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/22/19 14:42	1
Dibromomethane	ND		1.0	0.41	ug/L			12/22/19 14:42	1
Ethylbenzene	ND		1.0	0.74	ug/L			12/22/19 14:42	1
Iodomethane	ND		1.0	0.30	ug/L			12/22/19 14:42	1
m,p-Xylene	ND		2.0	0.66	ug/L			12/22/19 14:42	1
Methylene Chloride	ND		1.0	0.44	ug/L			12/22/19 14:42	1
o-Xylene	ND		1.0	0.76	ug/L			12/22/19 14:42	1
Styrene	ND		1.0	0.73	ug/L			12/22/19 14:42	1
Tetrachloroethene	ND		1.0	0.36	ug/L			12/22/19 14:42	1
Toluene	ND		1.0	0.51	ug/L			12/22/19 14:42	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			12/22/19 14:42	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			12/22/19 14:42	1
trans-1,4-Dichloro-2-butene	ND		1.0	0.22	ug/L			12/22/19 14:42	1
Trichloroethene	ND		1.0	0.46	ug/L			12/22/19 14:42	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			12/22/19 14:42	1
Vinyl acetate	ND		5.0	0.85	ug/L			12/22/19 14:42	1
Vinyl chloride	ND		1.0	0.90	ug/L			12/22/19 14:42	1
Xylenes, Total	ND		2.0	0.66	ug/L			12/22/19 14:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		77 - 120		12/22/19 14:42	1
4-Bromofluorobenzene (Surr)	106		73 - 120		12/22/19 14:42	1
Dibromofluoromethane (Surr)	109		75 - 123		12/22/19 14:42	1
Toluene-d8 (Surr)	100		80 - 120		12/22/19 14:42	1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		12/19/19 15:37	12/20/19 19:53	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	25		15 - 110				12/19/19 15:37	12/20/19 19:53	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-07

Lab Sample ID: 480-164381-7

Date Collected: 12/17/19 16:00

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.40	J	0.50	0.30	ug/L		12/23/19 15:43	12/24/19 19:27	1
Acenaphthylene	ND		0.50	0.34	ug/L		12/23/19 15:43	12/24/19 19:27	1
Anthracene	ND		0.50	0.39	ug/L		12/23/19 15:43	12/24/19 19:27	1
Benzo[a]anthracene	ND		0.50	0.40	ug/L		12/23/19 15:43	12/24/19 19:27	1
Benzo[a]pyrene	ND		0.50	0.33	ug/L		12/23/19 15:43	12/24/19 19:27	1
Benzo[b]fluoranthene	ND		0.50	0.30	ug/L		12/23/19 15:43	12/24/19 19:27	1
Benzo[g,h,i]perylene	ND		0.50	0.37	ug/L		12/23/19 15:43	12/24/19 19:27	1
Benzo[k]fluoranthene	ND		0.50	0.085	ug/L		12/23/19 15:43	12/24/19 19:27	1
Chrysene	ND		0.50	0.32	ug/L		12/23/19 15:43	12/24/19 19:27	1
Dibenz(a,h)anthracene	ND		0.50	0.33	ug/L		12/23/19 15:43	12/24/19 19:27	1
Fluoranthene	ND		0.50	0.36	ug/L		12/23/19 15:43	12/24/19 19:27	1
Fluorene	ND		0.50	0.37	ug/L		12/23/19 15:43	12/24/19 19:27	1
Indeno[1,2,3-cd]pyrene	ND		0.50	0.44	ug/L		12/23/19 15:43	12/24/19 19:27	1
Naphthalene	ND		0.50	0.42	ug/L		12/23/19 15:43	12/24/19 19:27	1
Phenanthrene	ND		0.50	0.38	ug/L		12/23/19 15:43	12/24/19 19:27	1
Pyrene	ND		0.50	0.36	ug/L		12/23/19 15:43	12/24/19 19:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	103		48 - 120				12/23/19 15:43	12/24/19 19:27	1
Nitrobenzene-d5	90		46 - 120				12/23/19 15:43	12/24/19 19:27	1
p-Terphenyl-d14	69		24 - 136				12/23/19 15:43	12/24/19 19:27	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		20	2.8	ng/L		12/23/19 10:56	12/26/19 22:14	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		20	5.4	ng/L		12/23/19 10:56	12/26/19 22:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	30		20	1.5	ng/L		12/23/19 10:56	12/26/19 22:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	12	J	20	1.7	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluorobutanesulfonic acid (PFBS)	2.9		2.0	0.48	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluorobutanoic acid (PFBA)	16		2.0	0.98	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.88	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluorodecanoic acid (PFDA)	5.9		2.0	0.75	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluorododecanoic acid (PFDoA)	0.85	J	2.0	0.58	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.0		2.0	0.93	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluoroheptanoic acid (PFHpA)	10		2.0	0.89	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluorohexanesulfonic acid (PFHxS)	15		2.0	0.78	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluorohexanoic acid (PFHxA)	12		2.0	0.74	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluorononanoic acid (PFNA)	8.9		2.0	0.26	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluorooctanesulfonamide (PFOSA)	ND		9.8	9.8	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluorooctanesulfonic acid (PFOS)	170		2.0	0.60	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluorooctanoic acid (PFOA)	54		2.0	0.79	ng/L		12/23/19 10:56	12/27/19 15:32	1
Perfluoropentanoic acid (PFPeA)	11		2.0	0.61	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.90	ng/L		12/23/19 10:56	12/26/19 22:14	1

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Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-07

Lab Sample ID: 480-164381-7

Date Collected: 12/17/19 16:00

Matrix: Water

Date Received: 12/18/19 10:30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotridecanoic acid (PFTriA)	ND		2.0	0.59	ng/L		12/23/19 10:56	12/26/19 22:14	1
Perfluoroundecanoic acid (PFUnA)	1.2	J	2.0	0.76	ng/L		12/23/19 10:56	12/26/19 22:14	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFDA	44	*	50 - 150				12/23/19 10:56	12/26/19 22:14	1
13C2 PFDoA	44	*	50 - 150				12/23/19 10:56	12/26/19 22:14	1
13C2 PFHxA	79		50 - 150				12/23/19 10:56	12/26/19 22:14	1
13C2 PFUnA	46	*	50 - 150				12/23/19 10:56	12/26/19 22:14	1
13C2 PFTeDA	56		50 - 150				12/23/19 10:56	12/26/19 22:14	1
13C4 PFBA	63		25 - 150				12/23/19 10:56	12/26/19 22:14	1
13C4 PFOA	71		50 - 150				12/23/19 10:56	12/27/19 15:32	1
13C4 PFOS	50		50 - 150				12/23/19 10:56	12/26/19 22:14	1
13C4 PFHpA	81		50 - 150				12/23/19 10:56	12/26/19 22:14	1
13C5 PFNA	49	*	50 - 150				12/23/19 10:56	12/26/19 22:14	1
13C5 PFPeA	78		25 - 150				12/23/19 10:56	12/26/19 22:14	1
13C8 FOSA	41		25 - 150				12/23/19 10:56	12/26/19 22:14	1
18O2 PFHxS	70		50 - 150				12/23/19 10:56	12/26/19 22:14	1
d3-NMeFOSAA	36	*	50 - 150				12/23/19 10:56	12/26/19 22:14	1
d5-NEtFOSAA	41	*	50 - 150				12/23/19 10:56	12/26/19 22:14	1
M2-6:2 FTS	65		25 - 150				12/23/19 10:56	12/26/19 22:14	1
M2-8:2 FTS	44		25 - 150				12/23/19 10:56	12/26/19 22:14	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		12/20/19 06:10	12/20/19 17:46	1
Antimony	ND		0.020	0.0068	mg/L		12/20/19 06:10	12/20/19 17:46	1
Arsenic	ND		0.015	0.0056	mg/L		12/20/19 06:10	12/20/19 17:46	1
Barium	0.18		0.0020	0.00070	mg/L		12/20/19 06:10	12/20/19 17:46	1
Beryllium	ND		0.0020	0.00030	mg/L		12/20/19 06:10	12/20/19 17:46	1
Boron	0.16	B	0.020	0.0040	mg/L		12/20/19 06:10	12/23/19 16:56	1
Cadmium	ND		0.0020	0.00050	mg/L		12/20/19 06:10	12/20/19 17:46	1
Calcium	169		0.50	0.10	mg/L		12/20/19 06:10	12/20/19 17:46	1
Chromium	ND		0.0040	0.0010	mg/L		12/20/19 06:10	12/20/19 17:46	1
Cobalt	ND		0.0040	0.00063	mg/L		12/20/19 06:10	12/20/19 17:46	1
Copper	0.0019	J	0.010	0.0016	mg/L		12/20/19 06:10	12/20/19 17:46	1
Iron	7.6		0.050	0.019	mg/L		12/20/19 06:10	12/20/19 17:46	1
Lead	0.0045	J	0.010	0.0030	mg/L		12/20/19 06:10	12/20/19 17:46	1
Magnesium	17.1		0.20	0.043	mg/L		12/20/19 06:10	12/20/19 17:46	1
Manganese	1.0		0.0030	0.00040	mg/L		12/20/19 06:10	12/20/19 17:46	1
Nickel	ND		0.010	0.0013	mg/L		12/20/19 06:10	12/20/19 17:46	1
Potassium	3.3		0.50	0.10	mg/L		12/20/19 06:10	12/20/19 17:46	1
Selenium	ND		0.025	0.0087	mg/L		12/20/19 06:10	12/20/19 17:46	1
Silver	ND		0.0060	0.0017	mg/L		12/20/19 06:10	12/20/19 17:46	1
Sodium	28.9		1.0	0.32	mg/L		12/20/19 06:10	12/20/19 17:46	1
Thallium	ND		0.020	0.010	mg/L		12/20/19 06:10	12/20/19 17:46	1
Vanadium	ND		0.0050	0.0015	mg/L		12/20/19 06:10	12/20/19 17:46	1
Zinc	0.011		0.010	0.0015	mg/L		12/20/19 06:10	12/20/19 17:46	1

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Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-07

Lab Sample ID: 480-164381-7

Date Collected: 12/17/19 16:00

Matrix: Water

Date Received: 12/18/19 10:30

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/27/19 11:41	12/27/19 16:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		1.0	0.37	mg/L			12/24/19 20:55	5
Chloride	34.9		2.5	1.4	mg/L			12/24/19 20:55	5
Sulfate	157		10.0	1.7	mg/L			12/24/19 20:55	5
Ammonia	0.21		0.020	0.0090	mg/L			12/20/19 08:08	1
Chemical Oxygen Demand	20.4		10.0	5.0	mg/L			12/19/19 19:01	1
Total Organic Carbon	5.6		1.0	0.43	mg/L			12/21/19 19:47	1
Alkalinity, Total	413	B	5.0	0.79	mg/L			12/27/19 17:15	1
Total hardness as CaCO3	570		10.0	2.6	mg/L			12/19/19 15:40	1
Total Dissolved Solids	723		10.0	4.0	mg/L			12/19/19 14:21	1

Client Sample ID: 3-ORA-011-001-08

Lab Sample ID: 480-164381-8

Date Collected: 12/17/19 17:30

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.35	ug/L			12/19/19 16:19	1
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			12/19/19 16:19	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			12/19/19 16:19	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			12/19/19 16:19	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/19/19 16:19	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			12/19/19 16:19	1
1,2,3-Trichloropropane	ND		1.0	0.89	ug/L			12/19/19 16:19	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			12/19/19 16:19	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			12/19/19 16:19	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			12/19/19 16:19	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/19/19 16:19	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			12/19/19 16:19	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			12/19/19 16:19	1
2-Butanone (MEK)	ND		10	1.3	ug/L			12/19/19 16:19	1
2-Hexanone	ND		5.0	1.2	ug/L			12/19/19 16:19	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			12/19/19 16:19	1
Acetone	ND		10	3.0	ug/L			12/19/19 16:19	1
Acrylonitrile	ND		5.0	0.83	ug/L			12/19/19 16:19	1
Benzene	ND		1.0	0.41	ug/L			12/19/19 16:19	1
Bromodichloromethane	ND		1.0	0.39	ug/L			12/19/19 16:19	1
Bromoform	ND		1.0	0.26	ug/L			12/19/19 16:19	1
Bromomethane	ND		1.0	0.69	ug/L			12/19/19 16:19	1
Carbon disulfide	ND		1.0	0.19	ug/L			12/19/19 16:19	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			12/19/19 16:19	1
Chlorobenzene	ND		1.0	0.75	ug/L			12/19/19 16:19	1
Chlorobromomethane	ND		1.0	0.87	ug/L			12/19/19 16:19	1
Chloroethane	ND *		1.0	0.32	ug/L			12/19/19 16:19	1
Chloroform	ND		1.0	0.34	ug/L			12/19/19 16:19	1
Chloromethane	ND		1.0	0.35	ug/L			12/19/19 16:19	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			12/19/19 16:19	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-08

Lab Sample ID: 480-164381-8

Date Collected: 12/17/19 17:30

Matrix: Water

Date Received: 12/18/19 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			12/19/19 16:19	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/19/19 16:19	1
Dibromomethane	ND		1.0	0.41	ug/L			12/19/19 16:19	1
Ethylbenzene	ND		1.0	0.74	ug/L			12/19/19 16:19	1
Iodomethane	ND		1.0	0.30	ug/L			12/19/19 16:19	1
m,p-Xylene	ND		2.0	0.66	ug/L			12/19/19 16:19	1
Methylene Chloride	ND		1.0	0.44	ug/L			12/19/19 16:19	1
o-Xylene	ND		1.0	0.76	ug/L			12/19/19 16:19	1
Styrene	ND		1.0	0.73	ug/L			12/19/19 16:19	1
Tetrachloroethene	ND		1.0	0.36	ug/L			12/19/19 16:19	1
Toluene	ND		1.0	0.51	ug/L			12/19/19 16:19	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			12/19/19 16:19	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			12/19/19 16:19	1
trans-1,4-Dichloro-2-butene	ND		1.0	0.22	ug/L			12/19/19 16:19	1
Trichloroethene	ND		1.0	0.46	ug/L			12/19/19 16:19	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			12/19/19 16:19	1
Vinyl acetate	ND		5.0	0.85	ug/L			12/19/19 16:19	1
Vinyl chloride	ND		1.0	0.90	ug/L			12/19/19 16:19	1
Xylenes, Total	ND		2.0	0.66	ug/L			12/19/19 16:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121	X	77 - 120		12/19/19 16:19	1
4-Bromofluorobenzene (Surr)	112		73 - 120		12/19/19 16:19	1
Dibromofluoromethane (Surr)	120		75 - 123		12/19/19 16:19	1
Toluene-d8 (Surr)	121	X	80 - 120		12/19/19 16:19	1

Surrogate Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (77-120)	BFB (73-120)	DBFM (75-123)	TOL (80-120)
480-164381-3	3-ORA-011-001-03	112	107	111	100
480-164381-4	3-ORA-011-001-04	113	105	109	100
480-164381-5	3-ORA-011-001-05	115	105	111	101
480-164381-6	3-ORA-011-001-06	115	107	112	101
480-164381-7	3-ORA-011-001-07	113	106	109	100
480-164381-8	3-ORA-011-001-08	121 X	112	120	121 X
LCS 480-510722/5	Lab Control Sample	115	114	119	97
LCS 480-511284/5	Lab Control Sample	111	105	108	103
MB 480-510722/7	Method Blank	113	112	122	97
MB 480-511284/7	Method Blank	112	107	107	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	FBP (48-120)	NBZ (46-120)	TPHd14 (24-136)
480-164381-3	3-ORA-011-001-03	107	96	79
480-164381-4	3-ORA-011-001-04	104	89	76
480-164381-5	3-ORA-011-001-05	92	82	56
480-164381-6	3-ORA-011-001-06	96	88	61
480-164381-7	3-ORA-011-001-07	103	90	69
LCS 480-511504/2-A	Lab Control Sample	102	99	94
MB 480-511504/1-A	Method Blank	107	91	93

Surrogate Legend

FBP = 2-Fluorobiphenyl
NBZ = Nitrobenzene-d5
TPHd14 = p-Terphenyl-d14

Isotope Dilution Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	DXE (15-110)
480-164381-3	3-ORA-011-001-03	25
480-164381-4	3-ORA-011-001-04	28
480-164381-5	3-ORA-011-001-05	40
480-164381-6	3-ORA-011-001-06	35
480-164381-7	3-ORA-011-001-07	25
LCS 480-510931/2-A	Lab Control Sample	30
MB 480-510931/1-A	Method Blank	28
Surrogate Legend		
DXE = 1,4-Dioxane-d8		

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	PFDA (50-150)	PFDoA (50-150)	PFHxA (50-150)	PFUnA (50-150)	PFTDA (50-150)	PFBA (25-150)	PFOA (50-150)	PFOS (50-150)
480-164381-1	3-ORA-011-001-01	80	69	104	92	76	90	92	98
480-164381-2	3-ORA-011-001-02	98	72	112	88	71	105	100	104
480-164381-3	3-ORA-011-001-03	96	73	99	94	70	93	101	103
480-164381-4	3-ORA-011-001-04	86	80	105	91	87	70	99	103
480-164381-5	3-ORA-011-001-05	110	100	76	115	98	42		100
480-164381-5 - DL	3-ORA-011-001-05							97	
480-164381-6	3-ORA-011-001-06	105	95	85	95	97	48		109
480-164381-6 - DL	3-ORA-011-001-06							107	
480-164381-7	3-ORA-011-001-07	44 *	44 *	79	46 *	56	63		50
480-164381-7	3-ORA-011-001-07							71	
LCS 200-150973/2-A	Lab Control Sample	89	72	106	87	75	107	99	105
MB 200-150973/1-A	Method Blank	93	72	109	90	66	103	98	113

Percent Isotope Dilution Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	PFHpA (50-150)	PFNA (50-150)	PFPeA (25-150)	PFOSA (25-150)	PFHxS (50-150)	-NMeFOS/ (50-150)	-NEtFOS/ (50-150)	M262FTS (25-150)
480-164381-1	3-ORA-011-001-01	103	84	106	68	95	71	89	83
480-164381-2	3-ORA-011-001-02	111	96	108	72	103	78	78	91
480-164381-3	3-ORA-011-001-03	102	93	100	88	101	81	85	87
480-164381-4	3-ORA-011-001-04	107	100	96	88	104	86	85	98
480-164381-5	3-ORA-011-001-05	92	102	67	82	98	112	121	166 *
480-164381-5 - DL	3-ORA-011-001-05								
480-164381-6	3-ORA-011-001-06	101	109	73	76	102	102	88	136
480-164381-6 - DL	3-ORA-011-001-06								
480-164381-7	3-ORA-011-001-07	81	49 *	78	41	70	36 *	41 *	65
480-164381-7	3-ORA-011-001-07								
LCS 200-150973/2-A	Lab Control Sample	111	95	113	68	106	84	88	79
MB 200-150973/1-A	Method Blank	109	104	112	65	102	81	82	74

Percent Isotope Dilution Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	M282FTS (25-150)
480-164381-1	3-ORA-011-001-01	84
480-164381-2	3-ORA-011-001-02	91
480-164381-3	3-ORA-011-001-03	79

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Isotope Dilution Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M282FTS (25-150)
480-164381-4	3-ORA-011-001-04	100
480-164381-5	3-ORA-011-001-05	165 *
480-164381-5 - DL	3-ORA-011-001-05	
480-164381-6	3-ORA-011-001-06	118
480-164381-6 - DL	3-ORA-011-001-06	
480-164381-7	3-ORA-011-001-07	44
480-164381-7	3-ORA-011-001-07	
LCS 200-150973/2-A	Lab Control Sample	89
MB 200-150973/1-A	Method Blank	95

Surrogate Legend

PFDA = 13C2 PFDA
PFDaA = 13C2 PFDaA
PFHxA = 13C2 PFHxA
PFUnA = 13C2 PFUnA
PFTDA = 13C2 PFTeDA
PFBA = 13C4 PFBA
PFOA = 13C4 PFOA
PFOS = 13C4 PFOS
PFHpA = 13C4 PFHpA
PFNA = 13C5 PFNA
PFPeA = 13C5 PFPeA
PFOSA = 13C8 FOSA
PFHxS = 18O2 PFHxS
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-510722/7

Matrix: Water

Analysis Batch: 510722

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.35	ug/L			12/19/19 13:20	1
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			12/19/19 13:20	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			12/19/19 13:20	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			12/19/19 13:20	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/19/19 13:20	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			12/19/19 13:20	1
1,2,3-Trichloropropane	ND		1.0	0.89	ug/L			12/19/19 13:20	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			12/19/19 13:20	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			12/19/19 13:20	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			12/19/19 13:20	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/19/19 13:20	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			12/19/19 13:20	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			12/19/19 13:20	1
2-Butanone (MEK)	ND		10	1.3	ug/L			12/19/19 13:20	1
2-Hexanone	ND		5.0	1.2	ug/L			12/19/19 13:20	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			12/19/19 13:20	1
Acetone	ND		10	3.0	ug/L			12/19/19 13:20	1
Acrylonitrile	ND		5.0	0.83	ug/L			12/19/19 13:20	1
Benzene	ND		1.0	0.41	ug/L			12/19/19 13:20	1
Bromodichloromethane	ND		1.0	0.39	ug/L			12/19/19 13:20	1
Bromoform	ND		1.0	0.26	ug/L			12/19/19 13:20	1
Bromomethane	ND		1.0	0.69	ug/L			12/19/19 13:20	1
Carbon disulfide	ND		1.0	0.19	ug/L			12/19/19 13:20	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			12/19/19 13:20	1
Chlorobenzene	ND		1.0	0.75	ug/L			12/19/19 13:20	1
Chlorobromomethane	ND		1.0	0.87	ug/L			12/19/19 13:20	1
Chloroethane	ND		1.0	0.32	ug/L			12/19/19 13:20	1
Chloroform	ND		1.0	0.34	ug/L			12/19/19 13:20	1
Chloromethane	ND		1.0	0.35	ug/L			12/19/19 13:20	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			12/19/19 13:20	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			12/19/19 13:20	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/19/19 13:20	1
Dibromomethane	ND		1.0	0.41	ug/L			12/19/19 13:20	1
Ethylbenzene	ND		1.0	0.74	ug/L			12/19/19 13:20	1
Iodomethane	ND		1.0	0.30	ug/L			12/19/19 13:20	1
m,p-Xylene	ND		2.0	0.66	ug/L			12/19/19 13:20	1
Methylene Chloride	ND		1.0	0.44	ug/L			12/19/19 13:20	1
o-Xylene	ND		1.0	0.76	ug/L			12/19/19 13:20	1
Styrene	ND		1.0	0.73	ug/L			12/19/19 13:20	1
Tetrachloroethene	ND		1.0	0.36	ug/L			12/19/19 13:20	1
Toluene	ND		1.0	0.51	ug/L			12/19/19 13:20	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			12/19/19 13:20	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			12/19/19 13:20	1
trans-1,4-Dichloro-2-butene	ND		1.0	0.22	ug/L			12/19/19 13:20	1
Trichloroethene	ND		1.0	0.46	ug/L			12/19/19 13:20	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			12/19/19 13:20	1
Vinyl acetate	ND		5.0	0.85	ug/L			12/19/19 13:20	1
Vinyl chloride	ND		1.0	0.90	ug/L			12/19/19 13:20	1

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-510722/7

Matrix: Water

Analysis Batch: 510722

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		2.0	0.66	ug/L			12/19/19 13:20	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		77 - 120					12/19/19 13:20	1
4-Bromofluorobenzene (Surr)	112		73 - 120					12/19/19 13:20	1
Dibromofluoromethane (Surr)	122		75 - 123					12/19/19 13:20	1
Toluene-d8 (Surr)	97		80 - 120					12/19/19 13:20	1

Lab Sample ID: LCS 480-510722/5

Matrix: Water

Analysis Batch: 510722

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	25.0	25.4		ug/L		102	80 - 120
1,1,1-Trichloroethane	25.0	27.7		ug/L		111	73 - 126
1,1,2,2-Tetrachloroethane	25.0	21.8		ug/L		87	76 - 120
1,1,2-Trichloroethane	25.0	25.0		ug/L		100	76 - 122
1,1-Dichloroethane	25.0	26.4		ug/L		106	77 - 120
1,1-Dichloroethene	25.0	29.0		ug/L		116	66 - 127
1,2,3-Trichloropropane	25.0	23.6		ug/L		94	68 - 122
1,2-Dibromo-3-Chloropropane	25.0	20.2		ug/L		81	56 - 134
1,2-Dibromoethane	25.0	24.7		ug/L		99	77 - 120
1,2-Dichlorobenzene	25.0	24.0		ug/L		96	80 - 124
1,2-Dichloroethane	25.0	28.2		ug/L		113	75 - 120
1,2-Dichloropropane	25.0	27.4		ug/L		110	76 - 120
1,4-Dichlorobenzene	25.0	23.7		ug/L		95	80 - 120
2-Butanone (MEK)	125	143		ug/L		114	57 - 140
2-Hexanone	125	119		ug/L		95	65 - 127
4-Methyl-2-pentanone (MIBK)	125	120		ug/L		96	71 - 125
Acetone	125	163		ug/L		130	56 - 142
Acrylonitrile	250	281		ug/L		112	63 - 125
Benzene	25.0	26.6		ug/L		106	71 - 124
Bromodichloromethane	25.0	28.2		ug/L		113	80 - 122
Bromoform	25.0	31.3		ug/L		125	61 - 132
Bromomethane	25.0	32.3		ug/L		129	55 - 144
Carbon disulfide	25.0	27.2		ug/L		109	59 - 134
Carbon tetrachloride	25.0	28.6		ug/L		114	72 - 134
Chlorobenzene	25.0	24.5		ug/L		98	80 - 120
Chlorobromomethane	25.0	30.5		ug/L		122	72 - 130
Chloroethane	25.0	38.0	*	ug/L		152	69 - 136
Chloroform	25.0	25.6		ug/L		102	73 - 127
Chloromethane	25.0	27.1		ug/L		108	68 - 124
cis-1,2-Dichloroethene	25.0	26.7		ug/L		107	74 - 124
cis-1,3-Dichloropropene	25.0	27.3		ug/L		109	74 - 124
Dibromochloromethane	25.0	27.5		ug/L		110	75 - 125
Dibromomethane	25.0	28.4		ug/L		114	76 - 127
Ethylbenzene	25.0	24.7		ug/L		99	77 - 123
Iodomethane	25.0	29.4		ug/L		118	78 - 123

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-510722/5

Matrix: Water

Analysis Batch: 510722

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
m,p-Xylene	25.0	25.3		ug/L		101	76 - 122
Methylene Chloride	25.0	30.6		ug/L		122	75 - 124
o-Xylene	25.0	25.6		ug/L		102	76 - 122
Styrene	25.0	25.3		ug/L		101	80 - 120
Tetrachloroethene	25.0	27.1		ug/L		108	74 - 122
Toluene	25.0	24.1		ug/L		96	80 - 122
trans-1,2-Dichloroethene	25.0	28.1		ug/L		112	73 - 127
trans-1,3-Dichloropropene	25.0	23.2		ug/L		93	80 - 120
trans-1,4-Dichloro-2-butene	25.0	16.1		ug/L		65	41 - 131
Trichloroethene	25.0	29.0		ug/L		116	74 - 123
Trichlorofluoromethane	25.0	33.9		ug/L		135	62 - 150
Vinyl acetate	50.0	50.9		ug/L		102	50 - 144
Vinyl chloride	25.0	27.2		ug/L		109	65 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	115		77 - 120
4-Bromofluorobenzene (Surr)	114		73 - 120
Dibromofluoromethane (Surr)	119		75 - 123
Toluene-d8 (Surr)	97		80 - 120

Lab Sample ID: MB 480-511284/7

Matrix: Water

Analysis Batch: 511284

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.35	ug/L			12/22/19 10:19	1
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			12/22/19 10:19	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			12/22/19 10:19	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			12/22/19 10:19	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/22/19 10:19	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			12/22/19 10:19	1
1,2,3-Trichloropropane	ND		1.0	0.89	ug/L			12/22/19 10:19	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			12/22/19 10:19	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			12/22/19 10:19	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			12/22/19 10:19	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/22/19 10:19	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			12/22/19 10:19	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			12/22/19 10:19	1
2-Butanone (MEK)	ND		10	1.3	ug/L			12/22/19 10:19	1
2-Hexanone	ND		5.0	1.2	ug/L			12/22/19 10:19	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			12/22/19 10:19	1
Acetone	ND		10	3.0	ug/L			12/22/19 10:19	1
Acrylonitrile	ND		5.0	0.83	ug/L			12/22/19 10:19	1
Benzene	ND		1.0	0.41	ug/L			12/22/19 10:19	1
Bromodichloromethane	ND		1.0	0.39	ug/L			12/22/19 10:19	1
Bromoform	ND		1.0	0.26	ug/L			12/22/19 10:19	1
Bromomethane	ND		1.0	0.69	ug/L			12/22/19 10:19	1
Carbon disulfide	ND		1.0	0.19	ug/L			12/22/19 10:19	1

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-511284/7

Matrix: Water

Analysis Batch: 511284

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		1.0	0.27	ug/L			12/22/19 10:19	1
Chlorobenzene	ND		1.0	0.75	ug/L			12/22/19 10:19	1
Chlorobromomethane	ND		1.0	0.87	ug/L			12/22/19 10:19	1
Chloroethane	ND		1.0	0.32	ug/L			12/22/19 10:19	1
Chloroform	ND		1.0	0.34	ug/L			12/22/19 10:19	1
Chloromethane	ND		1.0	0.35	ug/L			12/22/19 10:19	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			12/22/19 10:19	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			12/22/19 10:19	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/22/19 10:19	1
Dibromomethane	ND		1.0	0.41	ug/L			12/22/19 10:19	1
Ethylbenzene	ND		1.0	0.74	ug/L			12/22/19 10:19	1
Iodomethane	ND		1.0	0.30	ug/L			12/22/19 10:19	1
m,p-Xylene	ND		2.0	0.66	ug/L			12/22/19 10:19	1
Methylene Chloride	ND		1.0	0.44	ug/L			12/22/19 10:19	1
o-Xylene	ND		1.0	0.76	ug/L			12/22/19 10:19	1
Styrene	ND		1.0	0.73	ug/L			12/22/19 10:19	1
Tetrachloroethene	ND		1.0	0.36	ug/L			12/22/19 10:19	1
Toluene	ND		1.0	0.51	ug/L			12/22/19 10:19	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			12/22/19 10:19	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			12/22/19 10:19	1
trans-1,4-Dichloro-2-butene	ND		1.0	0.22	ug/L			12/22/19 10:19	1
Trichloroethene	ND		1.0	0.46	ug/L			12/22/19 10:19	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			12/22/19 10:19	1
Vinyl acetate	ND		5.0	0.85	ug/L			12/22/19 10:19	1
Vinyl chloride	ND		1.0	0.90	ug/L			12/22/19 10:19	1
Xylenes, Total	ND		2.0	0.66	ug/L			12/22/19 10:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		77 - 120		12/22/19 10:19	1
4-Bromofluorobenzene (Surr)	107		73 - 120		12/22/19 10:19	1
Dibromofluoromethane (Surr)	107		75 - 123		12/22/19 10:19	1
Toluene-d8 (Surr)	101		80 - 120		12/22/19 10:19	1

Lab Sample ID: LCS 480-511284/5

Matrix: Water

Analysis Batch: 511284

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	25.0	26.7		ug/L		107	80 - 120
1,1,1-Trichloroethane	25.0	27.1		ug/L		108	73 - 126
1,1,2,2-Tetrachloroethane	25.0	22.3		ug/L		89	76 - 120
1,1,2-Trichloroethane	25.0	23.2		ug/L		93	76 - 122
1,1-Dichloroethane	25.0	23.8		ug/L		95	77 - 120
1,1-Dichloroethene	25.0	23.0		ug/L		92	66 - 127
1,2,3-Trichloropropane	25.0	23.7		ug/L		95	68 - 122
1,2-Dibromo-3-Chloropropane	25.0	23.9		ug/L		95	56 - 134
1,2-Dibromoethane	25.0	24.4		ug/L		98	77 - 120
1,2-Dichlorobenzene	25.0	23.7		ug/L		95	80 - 124

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-511284/5

Matrix: Water

Analysis Batch: 511284

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	25.0	26.4		ug/L		106	75 - 120
1,2-Dichloropropane	25.0	23.2		ug/L		93	76 - 120
1,4-Dichlorobenzene	25.0	23.2		ug/L		93	80 - 120
2-Butanone (MEK)	125	116		ug/L		93	57 - 140
2-Hexanone	125	116		ug/L		93	65 - 127
4-Methyl-2-pentanone (MIBK)	125	113		ug/L		91	71 - 125
Acetone	125	114		ug/L		92	56 - 142
Acrylonitrile	250	228		ug/L		91	63 - 125
Benzene	25.0	22.7		ug/L		91	71 - 124
Bromodichloromethane	25.0	27.4		ug/L		110	80 - 122
Bromoform	25.0	24.5		ug/L		98	61 - 132
Bromomethane	25.0	25.0		ug/L		100	55 - 144
Carbon disulfide	25.0	22.5		ug/L		90	59 - 134
Carbon tetrachloride	25.0	28.3		ug/L		113	72 - 134
Chlorobenzene	25.0	23.5		ug/L		94	80 - 120
Chlorobromomethane	25.0	24.5		ug/L		98	72 - 130
Chloroethane	25.0	22.4		ug/L		89	69 - 136
Chloroform	25.0	24.6		ug/L		98	73 - 127
Chloromethane	25.0	20.9		ug/L		84	68 - 124
cis-1,2-Dichloroethene	25.0	23.5		ug/L		94	74 - 124
cis-1,3-Dichloropropene	25.0	24.8		ug/L		99	74 - 124
Dibromochloromethane	25.0	27.6		ug/L		110	75 - 125
Dibromomethane	25.0	24.8		ug/L		99	76 - 127
Ethylbenzene	25.0	23.1		ug/L		92	77 - 123
Iodomethane	25.0	25.0		ug/L		100	78 - 123
m,p-Xylene	25.0	23.1		ug/L		93	76 - 122
Methylene Chloride	25.0	21.3		ug/L		85	75 - 124
o-Xylene	25.0	23.4		ug/L		93	76 - 122
Styrene	25.0	23.1		ug/L		92	80 - 120
Tetrachloroethene	25.0	24.6		ug/L		99	74 - 122
Toluene	25.0	23.1		ug/L		92	80 - 122
trans-1,2-Dichloroethene	25.0	23.3		ug/L		93	73 - 127
trans-1,3-Dichloropropene	25.0	26.0		ug/L		104	80 - 120
trans-1,4-Dichloro-2-butene	25.0	22.3		ug/L		89	41 - 131
Trichloroethene	25.0	24.5		ug/L		98	74 - 123
Trichlorofluoromethane	25.0	27.6		ug/L		110	62 - 150
Vinyl acetate	50.0	47.2		ug/L		94	50 - 144
Vinyl chloride	25.0	21.9		ug/L		88	65 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		77 - 120
4-Bromofluorobenzene (Surr)	105		73 - 120
Dibromofluoromethane (Surr)	108		75 - 123
Toluene-d8 (Surr)	103		80 - 120

QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 480-510931/1-A

Matrix: Water

Analysis Batch: 511123

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 510931

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		12/19/19 15:37	12/20/19 16:25	1
Isotope Dilution	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	28		15 - 110				12/19/19 15:37	12/20/19 16:25	1

Lab Sample ID: LCS 480-510931/2-A

Matrix: Water

Analysis Batch: 511123

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 510931

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	1.00	1.16		ug/L		116	40 - 140
Isotope Dilution	%Recovery	LCS Qualifier	Limits				
1,4-Dioxane-d8	30		15 - 110				

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Lab Sample ID: MB 480-511504/1-A

Matrix: Water

Analysis Batch: 511678

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 511504

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.50	0.30	ug/L		12/23/19 15:43	12/24/19 15:10	1
Acenaphthylene	ND		0.50	0.34	ug/L		12/23/19 15:43	12/24/19 15:10	1
Anthracene	ND		0.50	0.39	ug/L		12/23/19 15:43	12/24/19 15:10	1
Benzo[a]anthracene	ND		0.50	0.40	ug/L		12/23/19 15:43	12/24/19 15:10	1
Benzo[a]pyrene	ND		0.50	0.33	ug/L		12/23/19 15:43	12/24/19 15:10	1
Benzo[b]fluoranthene	ND		0.50	0.30	ug/L		12/23/19 15:43	12/24/19 15:10	1
Benzo[g,h,i]perylene	ND		0.50	0.37	ug/L		12/23/19 15:43	12/24/19 15:10	1
Benzo[k]fluoranthene	ND		0.50	0.085	ug/L		12/23/19 15:43	12/24/19 15:10	1
Chrysene	ND		0.50	0.32	ug/L		12/23/19 15:43	12/24/19 15:10	1
Dibenz(a,h)anthracene	ND		0.50	0.33	ug/L		12/23/19 15:43	12/24/19 15:10	1
Fluoranthene	ND		0.50	0.36	ug/L		12/23/19 15:43	12/24/19 15:10	1
Fluorene	ND		0.50	0.37	ug/L		12/23/19 15:43	12/24/19 15:10	1
Indeno[1,2,3-cd]pyrene	ND		0.50	0.44	ug/L		12/23/19 15:43	12/24/19 15:10	1
Naphthalene	ND		0.50	0.42	ug/L		12/23/19 15:43	12/24/19 15:10	1
Phenanthrene	ND		0.50	0.38	ug/L		12/23/19 15:43	12/24/19 15:10	1
Pyrene	ND		0.50	0.36	ug/L		12/23/19 15:43	12/24/19 15:10	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	107		48 - 120				12/23/19 15:43	12/24/19 15:10	1
Nitrobenzene-d5	91		46 - 120				12/23/19 15:43	12/24/19 15:10	1
p-Terphenyl-d14	93		24 - 136				12/23/19 15:43	12/24/19 15:10	1

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QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH (Continued)

Lab Sample ID: LCS 480-511504/2-A

Matrix: Water

Analysis Batch: 511678

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 511504

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	32.8		ug/L		102	60 - 120
Acenaphthylene	32.0	33.7		ug/L		105	63 - 120
Anthracene	32.0	34.8		ug/L		109	69 - 131
Benzo[a]anthracene	32.0	32.1		ug/L		100	62 - 142
Benzo[a]pyrene	32.0	32.4		ug/L		101	46 - 156
Benzo[b]fluoranthene	32.0	31.4		ug/L		98	50 - 149
Benzo[g,h,i]perylene	32.0	35.2		ug/L		110	34 - 189
Benzo[k]fluoranthene	32.0	33.9		ug/L		106	47 - 147
Chrysene	32.0	32.2		ug/L		101	69 - 140
Dibenz(a,h)anthracene	32.0	36.2		ug/L		113	35 - 176
Fluoranthene	32.0	35.1		ug/L		110	67 - 133
Fluorene	32.0	33.5		ug/L		105	66 - 129
Indeno[1,2,3-cd]pyrene	32.0	34.9		ug/L		109	57 - 161
Naphthalene	32.0	29.6		ug/L		93	48 - 120
Phenanthrene	32.0	32.3		ug/L		101	67 - 130
Pyrene	32.0	32.2		ug/L		101	58 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	102		48 - 120
Nitrobenzene-d5	99		46 - 120
p-Terphenyl-d14	94		24 - 136

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 200-150973/1-A

Matrix: Water

Analysis Batch: 151052

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 150973

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		20	2.9	ng/L		12/23/19 10:56	12/26/19 21:08	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		20	5.5	ng/L		12/23/19 10:56	12/26/19 21:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.5	ng/L		12/23/19 10:56	12/26/19 21:08	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	1.7	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.49	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluorobutanoic acid (PFBA)	ND		2.0	1.0	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.90	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.77	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.59	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.95	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.91	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.80	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.76	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluorooctanesulfonamide (PFOSA)	ND		10	10	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.61	ng/L		12/23/19 10:56	12/26/19 21:08	1

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QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 200-150973/1-A

Matrix: Water

Analysis Batch: 151052

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 150973

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	ND		2.0	0.81	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.63	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.92	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluorotridecanoic acid (PFTrIA)	ND		2.0	0.60	ng/L		12/23/19 10:56	12/26/19 21:08	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.78	ng/L		12/23/19 10:56	12/26/19 21:08	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	93		50 - 150	12/23/19 10:56	12/26/19 21:08	1
13C2 PFDoA	72		50 - 150	12/23/19 10:56	12/26/19 21:08	1
13C2 PFHxA	109		50 - 150	12/23/19 10:56	12/26/19 21:08	1
13C2 PFUnA	90		50 - 150	12/23/19 10:56	12/26/19 21:08	1
13C2 PFTeDA	66		50 - 150	12/23/19 10:56	12/26/19 21:08	1
13C4 PFBA	103		25 - 150	12/23/19 10:56	12/26/19 21:08	1
13C4 PFOA	98		50 - 150	12/23/19 10:56	12/26/19 21:08	1
13C4 PFOS	113		50 - 150	12/23/19 10:56	12/26/19 21:08	1
13C4 PFHpA	109		50 - 150	12/23/19 10:56	12/26/19 21:08	1
13C5 PFNA	104		50 - 150	12/23/19 10:56	12/26/19 21:08	1
13C5 PFPeA	112		25 - 150	12/23/19 10:56	12/26/19 21:08	1
13C8 FOSA	65		25 - 150	12/23/19 10:56	12/26/19 21:08	1
18O2 PFHxS	102		50 - 150	12/23/19 10:56	12/26/19 21:08	1
d3-NMeFOSAA	81		50 - 150	12/23/19 10:56	12/26/19 21:08	1
d5-NEtFOSAA	82		50 - 150	12/23/19 10:56	12/26/19 21:08	1
M2-6:2 FTS	74		25 - 150	12/23/19 10:56	12/26/19 21:08	1
M2-8:2 FTS	95		25 - 150	12/23/19 10:56	12/26/19 21:08	1

Lab Sample ID: LCS 200-150973/2-A

Matrix: Water

Analysis Batch: 151052

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 150973

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	38.3	33.1		ng/L		86	50 - 150
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	37.9	37.4		ng/L		99	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	34.7		ng/L		87	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.6		ng/L		97	70 - 130
Perfluorobutanesulfonic acid (PFBS)	35.4	33.1		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	40.0	36.5		ng/L		91	50 - 150
Perfluorodecanesulfonic acid (PFDS)	38.6	35.7		ng/L		92	50 - 150
Perfluorodecanoic acid (PFDA)	40.0	39.5		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	40.0	40.7		ng/L		102	70 - 130
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	36.7		ng/L		96	50 - 150
Perfluoroheptanoic acid (PFHpA)	40.0	38.9		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.7		ng/L		95	70 - 130

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QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 200-150973/2-A

Matrix: Water

Analysis Batch: 151052

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 150973

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid (PFHxA)	40.0	38.5		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	40.0	42.2		ng/L		106	70 - 130
Perfluorooctanesulfonamide (PFOSA)	40.0	33.0		ng/L		82	50 - 150
Perfluorooctanesulfonic acid (PFOS)	37.1	36.2		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	40.0	38.3		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	36.5		ng/L		91	50 - 150
Perfluorotetradecanoic acid (PFTeA)	40.0	48.5		ng/L		121	70 - 130
Perfluorotridecanoic acid (PFTriA)	40.0	37.2		ng/L		93	70 - 130
Perfluoroundecanoic acid (PFUnA)	40.0	39.5		ng/L		99	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C2 PFDA	89		50 - 150
13C2 PFDoA	72		50 - 150
13C2 PFHxA	106		50 - 150
13C2 PFUnA	87		50 - 150
13C2 PFTeDA	75		50 - 150
13C4 PFBA	107		25 - 150
13C4 PFOA	99		50 - 150
13C4 PFOS	105		50 - 150
13C4 PFHpA	111		50 - 150
13C5 PFNA	95		50 - 150
13C5 PFPeA	113		25 - 150
13C8 FOSA	68		25 - 150
18O2 PFHxS	106		50 - 150
d3-NMeFOSAA	84		50 - 150
d5-NEtFOSAA	88		50 - 150
M2-6:2 FTS	79		25 - 150
M2-8:2 FTS	89		25 - 150

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-510833/1-A

Matrix: Water

Analysis Batch: 511250

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 510833

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		12/20/19 06:10	12/20/19 16:59	1
Arsenic	ND		0.015	0.0056	mg/L		12/20/19 06:10	12/20/19 16:59	1
Barium	ND		0.0020	0.00070	mg/L		12/20/19 06:10	12/20/19 16:59	1
Beryllium	ND		0.0020	0.00030	mg/L		12/20/19 06:10	12/20/19 16:59	1
Boron	0.00758	J	0.020	0.0040	mg/L		12/20/19 06:10	12/20/19 16:59	1
Cadmium	ND		0.0020	0.00050	mg/L		12/20/19 06:10	12/20/19 16:59	1
Calcium	ND		0.50	0.10	mg/L		12/20/19 06:10	12/20/19 16:59	1
Chromium	ND		0.0040	0.0010	mg/L		12/20/19 06:10	12/20/19 16:59	1
Cobalt	ND		0.0040	0.00063	mg/L		12/20/19 06:10	12/20/19 16:59	1

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 480-510833/1-A

Matrix: Water

Analysis Batch: 511250

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 510833

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		0.010	0.0016	mg/L		12/20/19 06:10	12/20/19 16:59	1
Iron	ND		0.050	0.019	mg/L		12/20/19 06:10	12/20/19 16:59	1
Lead	ND		0.010	0.0030	mg/L		12/20/19 06:10	12/20/19 16:59	1
Magnesium	ND		0.20	0.043	mg/L		12/20/19 06:10	12/20/19 16:59	1
Manganese	ND		0.0030	0.00040	mg/L		12/20/19 06:10	12/20/19 16:59	1
Nickel	ND		0.010	0.0013	mg/L		12/20/19 06:10	12/20/19 16:59	1
Potassium	ND		0.50	0.10	mg/L		12/20/19 06:10	12/20/19 16:59	1
Selenium	ND		0.025	0.0087	mg/L		12/20/19 06:10	12/20/19 16:59	1
Silver	ND		0.0060	0.0017	mg/L		12/20/19 06:10	12/20/19 16:59	1
Sodium	ND		1.0	0.32	mg/L		12/20/19 06:10	12/20/19 16:59	1
Thallium	ND		0.020	0.010	mg/L		12/20/19 06:10	12/20/19 16:59	1
Vanadium	ND		0.0050	0.0015	mg/L		12/20/19 06:10	12/20/19 16:59	1
Zinc	ND		0.010	0.0015	mg/L		12/20/19 06:10	12/20/19 16:59	1

Lab Sample ID: MB 480-510833/1-A

Matrix: Water

Analysis Batch: 511351

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 510833

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/20/19 06:10	12/21/19 10:24	1

Lab Sample ID: LCS 480-510833/2-A

Matrix: Water

Analysis Batch: 511250

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 510833

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10.0	8.83		mg/L		88	80 - 120
Arsenic	0.200	0.185		mg/L		93	80 - 120
Barium	0.200	0.196		mg/L		98	80 - 120
Beryllium	0.200	0.185		mg/L		93	80 - 120
Boron	0.200	0.196		mg/L		98	80 - 120
Cadmium	0.200	0.187		mg/L		93	80 - 120
Calcium	10.0	9.27		mg/L		93	80 - 120
Chromium	0.200	0.185		mg/L		92	80 - 120
Cobalt	0.200	0.177		mg/L		89	80 - 120
Copper	0.200	0.183		mg/L		92	80 - 120
Iron	10.0	9.13		mg/L		91	80 - 120
Lead	0.200	0.184		mg/L		92	80 - 120
Magnesium	10.0	9.16		mg/L		92	80 - 120
Manganese	0.200	0.184		mg/L		92	80 - 120
Nickel	0.200	0.181		mg/L		90	80 - 120
Potassium	10.0	9.36		mg/L		94	80 - 120
Selenium	0.200	0.175		mg/L		87	80 - 120
Silver	0.0500	0.0463		mg/L		93	80 - 120
Sodium	10.0	9.06		mg/L		90	80 - 120
Thallium	0.200	0.191		mg/L		96	80 - 120
Vanadium	0.200	0.185		mg/L		93	80 - 120
Zinc	0.200	0.189		mg/L		95	80 - 120

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QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-510833/2-A
Matrix: Water
Analysis Batch: 511351

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 510833
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.200	0.205		mg/L		103	80 - 120

Lab Sample ID: 480-164381-4 MS
Matrix: Water
Analysis Batch: 511250

Client Sample ID: 3-ORA-011-001-04
Prep Type: Total/NA
Prep Batch: 510833
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Aluminum	ND		10.0	8.95		mg/L		89	75 - 125
Arsenic	ND		0.200	0.199		mg/L		100	75 - 125
Barium	0.033		0.200	0.230		mg/L		99	75 - 125
Beryllium	ND		0.200	0.186		mg/L		93	75 - 125
Boron	0.32	B	0.200	0.526		mg/L		103	75 - 125
Cadmium	0.00050	J	0.200	0.197		mg/L		98	75 - 125
Calcium	359		10.0	365.3	4	mg/L		64	75 - 125
Chromium	ND		0.200	0.186		mg/L		93	75 - 125
Cobalt	ND		0.200	0.182		mg/L		91	75 - 125
Copper	0.015		0.200	0.203		mg/L		94	75 - 125
Iron	0.11		10.0	9.16		mg/L		91	75 - 125
Lead	0.0033	J	0.200	0.192		mg/L		95	75 - 125
Magnesium	27.0		10.0	36.12		mg/L		92	75 - 125
Manganese	0.36		0.200	0.536		mg/L		89	75 - 125
Nickel	0.0081	J	0.200	0.192		mg/L		92	75 - 125
Potassium	3.9		10.0	13.73		mg/L		98	75 - 125
Selenium	ND		0.200	0.194		mg/L		97	75 - 125
Silver	ND		0.0500	0.0486		mg/L		97	75 - 125
Sodium	16.7		10.0	26.25		mg/L		95	75 - 125
Thallium	ND		0.200	0.195		mg/L		97	75 - 125
Vanadium	ND		0.200	0.186		mg/L		93	75 - 125
Zinc	0.37		0.200	0.551		mg/L		89	75 - 125

Lab Sample ID: 480-164381-4 MS
Matrix: Water
Analysis Batch: 511351

Client Sample ID: 3-ORA-011-001-04
Prep Type: Total/NA
Prep Batch: 510833
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	ND		0.200	0.220		mg/L		110	75 - 125

Lab Sample ID: 480-164381-4 MSD
Matrix: Water
Analysis Batch: 511250

Client Sample ID: 3-ORA-011-001-04
Prep Type: Total/NA
Prep Batch: 510833
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Aluminum	ND		10.0	8.82		mg/L		88	75 - 125	1	20
Arsenic	ND		0.200	0.196		mg/L		98	75 - 125	1	20
Barium	0.033		0.200	0.224		mg/L		96	75 - 125	3	20
Beryllium	ND		0.200	0.184		mg/L		92	75 - 125	1	20
Boron	0.32	B	0.200	0.506		mg/L		92	75 - 125	4	20
Cadmium	0.00050	J	0.200	0.194		mg/L		97	75 - 125	1	20
Calcium	359		10.0	343.8	4	mg/L		-151	75 - 125	6	20

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 480-164381-4 MSD

Matrix: Water

Analysis Batch: 511250

Client Sample ID: 3-ORA-011-001-04

Prep Type: Total/NA

Prep Batch: 510833

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	ND		0.200	0.183		mg/L		92	75 - 125	1	20
Cobalt	ND		0.200	0.180		mg/L		90	75 - 125	1	20
Copper	0.015		0.200	0.200		mg/L		92	75 - 125	2	20
Iron	0.11		10.0	9.01		mg/L		89	75 - 125	2	20
Lead	0.0033	J	0.200	0.191		mg/L		94	75 - 125	1	20
Magnesium	27.0		10.0	34.42		mg/L		75	75 - 125	5	20
Manganese	0.36		0.200	0.509		mg/L		76	75 - 125	5	20
Nickel	0.0081	J	0.200	0.190		mg/L		91	75 - 125	1	20
Potassium	3.9		10.0	13.18		mg/L		93	75 - 125	4	20
Selenium	ND		0.200	0.190		mg/L		95	75 - 125	2	20
Silver	ND		0.0500	0.0459		mg/L		92	75 - 125	6	20
Sodium	16.7		10.0	25.06		mg/L		83	75 - 125	5	20
Thallium	ND		0.200	0.193		mg/L		96	75 - 125	1	20
Vanadium	ND		0.200	0.186		mg/L		93	75 - 125	0	20
Zinc	0.37		0.200	0.534		mg/L		81	75 - 125	3	20

Lab Sample ID: 480-164381-4 MSD

Matrix: Water

Analysis Batch: 511351

Client Sample ID: 3-ORA-011-001-04

Prep Type: Total/NA

Prep Batch: 510833

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		0.200	0.216		mg/L		108	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-511878/1-A

Matrix: Water

Analysis Batch: 512029

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 511878

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/27/19 11:41	12/27/19 15:50	1

Lab Sample ID: LCS 480-511878/2-A

Matrix: Water

Analysis Batch: 512029

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 511878

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00667	0.00697		mg/L		104	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 480-511616/28

Matrix: Water

Analysis Batch: 511616

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.20	0.073	mg/L			12/24/19 17:22	1
Chloride	ND		0.50	0.28	mg/L			12/24/19 17:22	1
Sulfate	ND		2.0	0.35	mg/L			12/24/19 17:22	1

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 480-511616/27

Matrix: Water

Analysis Batch: 511616

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	5.00	4.99		mg/L		100	90 - 110
Chloride	50.0	49.93		mg/L		100	90 - 110
Sulfate	50.0	53.38		mg/L		107	90 - 110

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 480-511048/3

Matrix: Water

Analysis Batch: 511048

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.020	0.0090	mg/L			12/20/19 07:55	1

Lab Sample ID: MB 480-511048/51

Matrix: Water

Analysis Batch: 511048

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.020	0.0090	mg/L			12/20/19 08:36	1

Lab Sample ID: LCS 480-511048/4

Matrix: Water

Analysis Batch: 511048

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.06		mg/L		106	90 - 110

Lab Sample ID: LCS 480-511048/52

Matrix: Water

Analysis Batch: 511048

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.05		mg/L		105	90 - 110

Method: 410.4 - COD

Lab Sample ID: MB 480-511102/28

Matrix: Water

Analysis Batch: 511102

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		10.0	5.0	mg/L			12/19/19 19:01	1

Lab Sample ID: LCS 480-511102/29

Matrix: Water

Analysis Batch: 511102

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	25.0	26.46		mg/L		106	90 - 110

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: 410.4 - COD (Continued)

Lab Sample ID: 480-164381-4 MS

Matrix: Water

Analysis Batch: 511102

Client Sample ID: 3-ORA-011-001-04

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	26.8		50.0	74.45		mg/L		95	75 - 125

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 480-511669/27

Matrix: Water

Analysis Batch: 511669

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.43	mg/L			12/21/19 07:34	1

Lab Sample ID: MB 480-511669/51

Matrix: Water

Analysis Batch: 511669

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.43	mg/L			12/21/19 18:24	1

Lab Sample ID: LCS 480-511669/28

Matrix: Water

Analysis Batch: 511669

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	60.0	57.12		mg/L		95	90 - 110

Lab Sample ID: LCS 480-511669/52

Matrix: Water

Analysis Batch: 511669

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	60.0	57.33		mg/L		96	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-511857/29

Matrix: Water

Analysis Batch: 511857

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	4.49	J	5.0	0.79	mg/L			12/24/19 16:32	1

Lab Sample ID: MB 480-511857/6

Matrix: Water

Analysis Batch: 511857

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		5.0	0.79	mg/L			12/24/19 13:32	1

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QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 480-511857/30

Matrix: Water

Analysis Batch: 511857

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	94.20		mg/L		94	90 - 110

Lab Sample ID: LCS 480-511857/7

Matrix: Water

Analysis Batch: 511857

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	96.63		mg/L		97	90 - 110

Lab Sample ID: MB 480-512191/30

Matrix: Water

Analysis Batch: 512191

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	1.04	J	5.0	0.79	mg/L			12/27/19 14:35	1

Lab Sample ID: LCS 480-512191/31

Matrix: Water

Analysis Batch: 512191

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	92.09		mg/L		92	90 - 110

Method: SM 2340C - Hardness, Total (mg/l as CaCO3)

Lab Sample ID: MB 480-510932/3

Matrix: Water

Analysis Batch: 510932

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total hardness as CaCO3	ND		2.0	0.53	mg/L			12/19/19 15:40	1

Lab Sample ID: LCS 480-510932/4

Matrix: Water

Analysis Batch: 510932

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total hardness as CaCO3	272	288.0		mg/L		106	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-510893/1

Matrix: Water

Analysis Batch: 510893

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	4.0	mg/L			12/19/19 14:21	1

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QC Sample Results

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 480-510893/2
Matrix: Water
Analysis Batch: 510893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	464.0		mg/L		93	85 - 115

QC Association Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

GC/MS VOA

Analysis Batch: 510722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-8	3-ORA-011-001-08	Total/NA	Water	8260C	
MB 480-510722/7	Method Blank	Total/NA	Water	8260C	
LCS 480-510722/5	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 511284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	8260C	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	8260C	
480-164381-5	3-ORA-011-001-05	Total/NA	Water	8260C	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	8260C	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	8260C	
MB 480-511284/7	Method Blank	Total/NA	Water	8260C	
LCS 480-511284/5	Lab Control Sample	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 510931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	3510C	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	3510C	
480-164381-5	3-ORA-011-001-05	Total/NA	Water	3510C	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	3510C	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	3510C	
MB 480-510931/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-510931/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 511123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	8270D SIM ID	510931
480-164381-4	3-ORA-011-001-04	Total/NA	Water	8270D SIM ID	510931
480-164381-7	3-ORA-011-001-07	Total/NA	Water	8270D SIM ID	510931
MB 480-510931/1-A	Method Blank	Total/NA	Water	8270D SIM ID	510931
LCS 480-510931/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	510931

Prep Batch: 511504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	3510C	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	3510C	
480-164381-5	3-ORA-011-001-05	Total/NA	Water	3510C	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	3510C	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	3510C	
MB 480-511504/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-511504/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 511510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-5	3-ORA-011-001-05	Total/NA	Water	8270D SIM ID	510931
480-164381-6	3-ORA-011-001-06	Total/NA	Water	8270D SIM ID	510931

QC Association Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

GC/MS Semi VOA

Analysis Batch: 511678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	8270D_LL_PAH	511504
480-164381-4	3-ORA-011-001-04	Total/NA	Water	8270D_LL_PAH	511504
480-164381-5	3-ORA-011-001-05	Total/NA	Water	8270D_LL_PAH	511504
480-164381-6	3-ORA-011-001-06	Total/NA	Water	8270D_LL_PAH	511504
480-164381-7	3-ORA-011-001-07	Total/NA	Water	8270D_LL_PAH	511504
MB 480-511504/1-A	Method Blank	Total/NA	Water	8270D_LL_PAH	511504
LCS 480-511504/2-A	Lab Control Sample	Total/NA	Water	8270D_LL_PAH	511504

LCMS

Prep Batch: 150973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-1	3-ORA-011-001-01	Total/NA	Water	3535	
480-164381-2	3-ORA-011-001-02	Total/NA	Water	3535	
480-164381-3	3-ORA-011-001-03	Total/NA	Water	3535	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	3535	
480-164381-5	3-ORA-011-001-05	Total/NA	Water	3535	
480-164381-5 - DL	3-ORA-011-001-05	Total/NA	Water	3535	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	3535	
480-164381-6 - DL	3-ORA-011-001-06	Total/NA	Water	3535	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	3535	
MB 200-150973/1-A	Method Blank	Total/NA	Water	3535	
LCS 200-150973/2-A	Lab Control Sample	Total/NA	Water	3535	

Analysis Batch: 151052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-1	3-ORA-011-001-01	Total/NA	Water	537 (modified)	150973
480-164381-2	3-ORA-011-001-02	Total/NA	Water	537 (modified)	150973
480-164381-3	3-ORA-011-001-03	Total/NA	Water	537 (modified)	150973
480-164381-4	3-ORA-011-001-04	Total/NA	Water	537 (modified)	150973
480-164381-5	3-ORA-011-001-05	Total/NA	Water	537 (modified)	150973
480-164381-6	3-ORA-011-001-06	Total/NA	Water	537 (modified)	150973
480-164381-7	3-ORA-011-001-07	Total/NA	Water	537 (modified)	150973
MB 200-150973/1-A	Method Blank	Total/NA	Water	537 (modified)	150973
LCS 200-150973/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	150973

Analysis Batch: 151089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-5 - DL	3-ORA-011-001-05	Total/NA	Water	537 (modified)	150973
480-164381-6 - DL	3-ORA-011-001-06	Total/NA	Water	537 (modified)	150973
480-164381-7	3-ORA-011-001-07	Total/NA	Water	537 (modified)	150973

Metals

Prep Batch: 510833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	3005A	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	3005A	
480-164381-5	3-ORA-011-001-05	Total/NA	Water	3005A	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	3005A	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	3005A	
MB 480-510833/1-A	Method Blank	Total/NA	Water	3005A	

Eurofins TestAmerica, Buffalo

QC Association Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Metals (Continued)

Prep Batch: 510833 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-510833/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-164381-4 MS	3-ORA-011-001-04	Total/NA	Water	3005A	
480-164381-4 MSD	3-ORA-011-001-04	Total/NA	Water	3005A	

Analysis Batch: 511250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	6010C	510833
480-164381-4	3-ORA-011-001-04	Total/NA	Water	6010C	510833
480-164381-5	3-ORA-011-001-05	Total/NA	Water	6010C	510833
480-164381-6	3-ORA-011-001-06	Total/NA	Water	6010C	510833
480-164381-7	3-ORA-011-001-07	Total/NA	Water	6010C	510833
MB 480-510833/1-A	Method Blank	Total/NA	Water	6010C	510833
LCS 480-510833/2-A	Lab Control Sample	Total/NA	Water	6010C	510833
480-164381-4 MS	3-ORA-011-001-04	Total/NA	Water	6010C	510833
480-164381-4 MSD	3-ORA-011-001-04	Total/NA	Water	6010C	510833

Analysis Batch: 511351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	6010C	510833
480-164381-4	3-ORA-011-001-04	Total/NA	Water	6010C	510833
480-164381-5	3-ORA-011-001-05	Total/NA	Water	6010C	510833
480-164381-6	3-ORA-011-001-06	Total/NA	Water	6010C	510833
MB 480-510833/1-A	Method Blank	Total/NA	Water	6010C	510833
LCS 480-510833/2-A	Lab Control Sample	Total/NA	Water	6010C	510833
480-164381-4 MS	3-ORA-011-001-04	Total/NA	Water	6010C	510833
480-164381-4 MSD	3-ORA-011-001-04	Total/NA	Water	6010C	510833

Analysis Batch: 511559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-7	3-ORA-011-001-07	Total/NA	Water	6010C	510833

Prep Batch: 511878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	7470A	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	7470A	
480-164381-5	3-ORA-011-001-05	Total/NA	Water	7470A	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	7470A	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	7470A	
MB 480-511878/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-511878/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 512029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	7470A	511878
480-164381-4	3-ORA-011-001-04	Total/NA	Water	7470A	511878
480-164381-5	3-ORA-011-001-05	Total/NA	Water	7470A	511878
480-164381-6	3-ORA-011-001-06	Total/NA	Water	7470A	511878
480-164381-7	3-ORA-011-001-07	Total/NA	Water	7470A	511878
MB 480-511878/1-A	Method Blank	Total/NA	Water	7470A	511878
LCS 480-511878/2-A	Lab Control Sample	Total/NA	Water	7470A	511878

Eurofins TestAmerica, Buffalo

QC Association Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

General Chemistry

Analysis Batch: 510893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	SM 2540C	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	SM 2540C	
480-164381-5	3-ORA-011-001-05	Total/NA	Water	SM 2540C	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	SM 2540C	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	SM 2540C	
MB 480-510893/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-510893/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 510932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	SM 2340C	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	SM 2340C	
480-164381-5	3-ORA-011-001-05	Total/NA	Water	SM 2340C	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	SM 2340C	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	SM 2340C	
MB 480-510932/3	Method Blank	Total/NA	Water	SM 2340C	
LCS 480-510932/4	Lab Control Sample	Total/NA	Water	SM 2340C	

Analysis Batch: 511048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	350.1	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	350.1	
480-164381-5	3-ORA-011-001-05	Total/NA	Water	350.1	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	350.1	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	350.1	
MB 480-511048/3	Method Blank	Total/NA	Water	350.1	
MB 480-511048/51	Method Blank	Total/NA	Water	350.1	
LCS 480-511048/4	Lab Control Sample	Total/NA	Water	350.1	
LCS 480-511048/52	Lab Control Sample	Total/NA	Water	350.1	

Analysis Batch: 511102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	410.4	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	410.4	
480-164381-5	3-ORA-011-001-05	Total/NA	Water	410.4	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	410.4	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	410.4	
MB 480-511102/28	Method Blank	Total/NA	Water	410.4	
LCS 480-511102/29	Lab Control Sample	Total/NA	Water	410.4	
480-164381-4 MS	3-ORA-011-001-04	Total/NA	Water	410.4	

Analysis Batch: 511616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	300.0	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	300.0	
480-164381-5	3-ORA-011-001-05	Total/NA	Water	300.0	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	300.0	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	300.0	
MB 480-511616/28	Method Blank	Total/NA	Water	300.0	
LCS 480-511616/27	Lab Control Sample	Total/NA	Water	300.0	

Eurofins TestAmerica, Buffalo

QC Association Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

General Chemistry

Analysis Batch: 511669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	9060A	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	9060A	
480-164381-5	3-ORA-011-001-05	Total/NA	Water	9060A	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	9060A	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	9060A	
MB 480-511669/27	Method Blank	Total/NA	Water	9060A	
MB 480-511669/51	Method Blank	Total/NA	Water	9060A	
LCS 480-511669/28	Lab Control Sample	Total/NA	Water	9060A	
LCS 480-511669/52	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 511857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-3	3-ORA-011-001-03	Total/NA	Water	SM 2320B	
480-164381-4	3-ORA-011-001-04	Total/NA	Water	SM 2320B	
MB 480-511857/29	Method Blank	Total/NA	Water	SM 2320B	
MB 480-511857/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-511857/30	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-511857/7	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 512191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164381-5	3-ORA-011-001-05	Total/NA	Water	SM 2320B	
480-164381-6	3-ORA-011-001-06	Total/NA	Water	SM 2320B	
480-164381-7	3-ORA-011-001-07	Total/NA	Water	SM 2320B	
MB 480-512191/30	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-512191/31	Lab Control Sample	Total/NA	Water	SM 2320B	

Lab Chronicle

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-01

Lab Sample ID: 480-164381-1

Date Collected: 12/17/19 09:00

Matrix: Water

Date Received: 12/18/19 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			150973	12/23/19 10:56	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	151052	12/26/19 21:25	ND	TAL BUR

Client Sample ID: 3-ORA-011-001-02

Lab Sample ID: 480-164381-2

Date Collected: 12/17/19 09:05

Matrix: Water

Date Received: 12/18/19 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			150973	12/23/19 10:56	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	151052	12/26/19 21:33	ND	TAL BUR

Client Sample ID: 3-ORA-011-001-03

Lab Sample ID: 480-164381-3

Date Collected: 12/17/19 09:15

Matrix: Water

Date Received: 12/18/19 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	511284	12/22/19 13:10	CRL	TAL BUF
Total/NA	Prep	3510C			510931	12/19/19 15:37	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	511123	12/20/19 18:20	RJS	TAL BUF
Total/NA	Prep	3510C			511504	12/23/19 15:43	AAP	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	511678	12/24/19 17:33	PJQ	TAL BUF
Total/NA	Prep	3535			150973	12/23/19 10:56	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	151052	12/26/19 21:41	ND	TAL BUR
Total/NA	Prep	3005A			510833	12/20/19 06:10	NSW	TAL BUF
Total/NA	Analysis	6010C		1	511250	12/20/19 17:06	EMB	TAL BUF
Total/NA	Prep	3005A			510833	12/20/19 06:10	NSW	TAL BUF
Total/NA	Analysis	6010C		1	511351	12/21/19 10:31	EMB	TAL BUF
Total/NA	Prep	7470A			511878	12/27/19 11:41	BMB	TAL BUF
Total/NA	Analysis	7470A		1	512029	12/27/19 15:56	BMB	TAL BUF
Total/NA	Analysis	300.0		2	511616	12/24/19 19:58	IMZ	TAL BUF
Total/NA	Analysis	350.1		1	511048	12/20/19 08:02	CLT	TAL BUF
Total/NA	Analysis	410.4		1	511102	12/19/19 19:01	CSS	TAL BUF
Total/NA	Analysis	9060A		1	511669	12/21/19 16:07	IMZ	TAL BUF
Total/NA	Analysis	SM 2320B		1	511857	12/24/19 17:23	AEF	TAL BUF
Total/NA	Analysis	SM 2340C		1	510932	12/19/19 15:40	AJL	TAL BUF
Total/NA	Analysis	SM 2540C		1	510893	12/19/19 14:21	CSS	TAL BUF

Client Sample ID: 3-ORA-011-001-04

Lab Sample ID: 480-164381-4

Date Collected: 12/17/19 12:15

Matrix: Water

Date Received: 12/18/19 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	511284	12/22/19 13:33	CRL	TAL BUF

Eurofins TestAmerica, Buffalo

Lab Chronicle

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-04

Lab Sample ID: 480-164381-4

Date Collected: 12/17/19 12:15

Matrix: Water

Date Received: 12/18/19 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			510931	12/19/19 15:37	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	511123	12/20/19 18:43	RJS	TAL BUF
Total/NA	Prep	3510C			511504	12/23/19 15:43	AAP	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	511678	12/24/19 18:02	PJQ	TAL BUF
Total/NA	Prep	3535			150973	12/23/19 10:56	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	151052	12/26/19 21:49	ND	TAL BUR
Total/NA	Prep	3005A			510833	12/20/19 06:10	NSW	TAL BUF
Total/NA	Analysis	6010C		1	511250	12/20/19 17:10	EMB	TAL BUF
Total/NA	Prep	3005A			510833	12/20/19 06:10	NSW	TAL BUF
Total/NA	Analysis	6010C		1	511351	12/21/19 10:35	EMB	TAL BUF
Total/NA	Prep	7470A			511878	12/27/19 11:41	BMB	TAL BUF
Total/NA	Analysis	7470A		1	512029	12/27/19 15:57	BMB	TAL BUF
Total/NA	Analysis	300.0		10	511616	12/24/19 20:12	IMZ	TAL BUF
Total/NA	Analysis	350.1		1	511048	12/20/19 08:02	CLT	TAL BUF
Total/NA	Analysis	410.4		1	511102	12/19/19 19:01	CSS	TAL BUF
Total/NA	Analysis	9060A		1	511669	12/21/19 16:34	IMZ	TAL BUF
Total/NA	Analysis	SM 2320B		1	511857	12/24/19 17:30	AEF	TAL BUF
Total/NA	Analysis	SM 2340C		1	510932	12/19/19 15:40	AJL	TAL BUF
Total/NA	Analysis	SM 2540C		1	510893	12/19/19 14:21	CSS	TAL BUF

Client Sample ID: 3-ORA-011-001-05

Lab Sample ID: 480-164381-5

Date Collected: 12/17/19 13:45

Matrix: Water

Date Received: 12/18/19 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	511284	12/22/19 13:56	CRL	TAL BUF
Total/NA	Prep	3510C			510931	12/19/19 15:37	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		5	511510	12/23/19 17:57	RJS	TAL BUF
Total/NA	Prep	3510C			511504	12/23/19 15:43	AAP	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	511678	12/24/19 18:30	PJQ	TAL BUF
Total/NA	Prep	3535			150973	12/23/19 10:56	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	151052	12/26/19 21:57	ND	TAL BUR
Total/NA	Prep	3535	DL		150973	12/23/19 10:56	MBM	TAL BUR
Total/NA	Analysis	537 (modified)	DL	10	151089	12/27/19 15:40	JM1	TAL BUR
Total/NA	Prep	3005A			510833	12/20/19 06:10	NSW	TAL BUF
Total/NA	Analysis	6010C		1	511250	12/20/19 17:28	EMB	TAL BUF
Total/NA	Prep	3005A			510833	12/20/19 06:10	NSW	TAL BUF
Total/NA	Analysis	6010C		1	511351	12/21/19 10:54	EMB	TAL BUF
Total/NA	Prep	7470A			511878	12/27/19 11:41	BMB	TAL BUF
Total/NA	Analysis	7470A		1	512029	12/27/19 15:58	BMB	TAL BUF
Total/NA	Analysis	300.0		10	511616	12/24/19 20:26	IMZ	TAL BUF
Total/NA	Analysis	350.1		5	511048	12/20/19 08:53	CLT	TAL BUF
Total/NA	Analysis	410.4		1	511102	12/19/19 19:01	CSS	TAL BUF

Eurofins TestAmerica, Buffalo

Lab Chronicle

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-05

Lab Sample ID: 480-164381-5

Date Collected: 12/17/19 13:45

Matrix: Water

Date Received: 12/18/19 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	511669	12/21/19 17:01	IMZ	TAL BUF
Total/NA	Analysis	SM 2320B		1	512191	12/27/19 16:58	KEB	TAL BUF
Total/NA	Analysis	SM 2340C		1	510932	12/19/19 15:40	AJL	TAL BUF
Total/NA	Analysis	SM 2540C		1	510893	12/19/19 14:21	CSS	TAL BUF

Client Sample ID: 3-ORA-011-001-06

Lab Sample ID: 480-164381-6

Date Collected: 12/17/19 14:30

Matrix: Water

Date Received: 12/18/19 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	511284	12/22/19 14:19	CRL	TAL BUF
Total/NA	Prep	3510C			510931	12/19/19 15:37	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		5	511510	12/23/19 18:20	RJS	TAL BUF
Total/NA	Prep	3510C			511504	12/23/19 15:43	AAP	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	511678	12/24/19 18:59	PJQ	TAL BUF
Total/NA	Prep	3535			150973	12/23/19 10:56	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	151052	12/26/19 22:06	ND	TAL BUR
Total/NA	Prep	3535	DL		150973	12/23/19 10:56	MBM	TAL BUR
Total/NA	Analysis	537 (modified)	DL	10	151089	12/27/19 15:48	JM1	TAL BUR
Total/NA	Prep	3005A			510833	12/20/19 06:10	NSW	TAL BUF
Total/NA	Analysis	6010C		1	511250	12/20/19 17:43	EMB	TAL BUF
Total/NA	Prep	3005A			510833	12/20/19 06:10	NSW	TAL BUF
Total/NA	Analysis	6010C		1	511351	12/21/19 11:08	EMB	TAL BUF
Total/NA	Prep	7470A			511878	12/27/19 11:41	BMB	TAL BUF
Total/NA	Analysis	7470A		1	512029	12/27/19 16:00	BMB	TAL BUF
Total/NA	Analysis	300.0		10	511616	12/24/19 20:41	IMZ	TAL BUF
Total/NA	Analysis	350.1		1	511048	12/20/19 08:08	CLT	TAL BUF
Total/NA	Analysis	410.4		1	511102	12/19/19 19:01	CSS	TAL BUF
Total/NA	Analysis	9060A		1	511669	12/21/19 19:20	IMZ	TAL BUF
Total/NA	Analysis	SM 2320B		1	512191	12/27/19 17:08	KEB	TAL BUF
Total/NA	Analysis	SM 2340C		1	510932	12/19/19 15:40	AJL	TAL BUF
Total/NA	Analysis	SM 2540C		1	510893	12/19/19 14:21	CSS	TAL BUF

Client Sample ID: 3-ORA-011-001-07

Lab Sample ID: 480-164381-7

Date Collected: 12/17/19 16:00

Matrix: Water

Date Received: 12/18/19 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	511284	12/22/19 14:42	CRL	TAL BUF
Total/NA	Prep	3510C			510931	12/19/19 15:37	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	511123	12/20/19 19:53	RJS	TAL BUF
Total/NA	Prep	3510C			511504	12/23/19 15:43	AAP	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	511678	12/24/19 19:27	PJQ	TAL BUF

Eurofins TestAmerica, Buffalo

Lab Chronicle

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Client Sample ID: 3-ORA-011-001-07

Lab Sample ID: 480-164381-7

Date Collected: 12/17/19 16:00

Matrix: Water

Date Received: 12/18/19 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			150973	12/23/19 10:56	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	151052	12/26/19 22:14	ND	TAL BUR
Total/NA	Prep	3535			150973	12/23/19 10:56	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	151089	12/27/19 15:32	JM1	TAL BUR
Total/NA	Prep	3005A			510833	12/20/19 06:10	NSW	TAL BUF
Total/NA	Analysis	6010C		1	511250	12/20/19 17:46	EMB	TAL BUF
Total/NA	Prep	3005A			510833	12/20/19 06:10	NSW	TAL BUF
Total/NA	Analysis	6010C		1	511559	12/23/19 16:56	EMB	TAL BUF
Total/NA	Prep	7470A			511878	12/27/19 11:41	BMB	TAL BUF
Total/NA	Analysis	7470A		1	512029	12/27/19 16:04	BMB	TAL BUF
Total/NA	Analysis	300.0		5	511616	12/24/19 20:55	IMZ	TAL BUF
Total/NA	Analysis	350.1		1	511048	12/20/19 08:08	CLT	TAL BUF
Total/NA	Analysis	410.4		1	511102	12/19/19 19:01	CSS	TAL BUF
Total/NA	Analysis	9060A		1	511669	12/21/19 19:47	IMZ	TAL BUF
Total/NA	Analysis	SM 2320B		1	512191	12/27/19 17:15	KEB	TAL BUF
Total/NA	Analysis	SM 2340C		1	510932	12/19/19 15:40	AJL	TAL BUF
Total/NA	Analysis	SM 2540C		1	510893	12/19/19 14:21	CSS	TAL BUF

Client Sample ID: 3-ORA-011-001-08

Lab Sample ID: 480-164381-8

Date Collected: 12/17/19 17:30

Matrix: Water

Date Received: 12/18/19 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	510722	12/19/19 16:19	CRL	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Accreditation/Certification Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-20

Laboratory: Eurofins TestAmerica, Burlington

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10391	04-01-20

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
537 (modified)	3535	Water	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)
537 (modified)	3535	Water	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)
537 (modified)	3535	Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537 (modified)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537 (modified)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
537 (modified)	3535	Water	Perfluorobutanoic acid (PFBA)
537 (modified)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
537 (modified)	3535	Water	Perfluorodecanoic acid (PFDA)
537 (modified)	3535	Water	Perfluorododecanoic acid (PFDoA)
537 (modified)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
537 (modified)	3535	Water	Perfluoroheptanoic acid (PFHpA)
537 (modified)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
537 (modified)	3535	Water	Perfluorohexanoic acid (PFHxA)
537 (modified)	3535	Water	Perfluorononanoic acid (PFNA)
537 (modified)	3535	Water	Perfluorooctanesulfonamide (PFOSA)
537 (modified)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	3535	Water	Perfluorooctanoic acid (PFOA)
537 (modified)	3535	Water	Perfluoropentanoic acid (PFPeA)
537 (modified)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
537 (modified)	3535	Water	Perfluorotridecanoic acid (PFTriA)
537 (modified)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Method Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
8270D_LL_PAH	Semivolatile Organic Compounds (GC/MS) Low level PAH	SW846	TAL BUF
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL BUR
6010C	Metals (ICP)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
350.1	Nitrogen, Ammonia	MCAWW	TAL BUF
410.4	COD	MCAWW	TAL BUF
9060A	Organic Carbon, Total (TOC)	SW846	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2340C	Hardness, Total (mg/l as CaCO ₃)	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
3005A	Preparation, Total Metals	SW846	TAL BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
3535	Solid-Phase Extraction (SPE)	SW846	TAL BUR
5030C	Purge and Trap	SW846	TAL BUF
7470A	Preparation, Mercury	SW846	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: Parsons Corporation
Project/Site: 3-ORA-011 St Columba LF

Job ID: 480-164381-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-164381-1	3-ORA-011-001-01	Water	12/17/19 09:00	12/18/19 10:30	
480-164381-2	3-ORA-011-001-02	Water	12/17/19 09:05	12/18/19 10:30	
480-164381-3	3-ORA-011-001-03	Water	12/17/19 09:15	12/18/19 10:30	
480-164381-4	3-ORA-011-001-04	Water	12/17/19 12:15	12/18/19 10:30	
480-164381-5	3-ORA-011-001-05	Water	12/17/19 13:45	12/18/19 10:30	
480-164381-6	3-ORA-011-001-06	Water	12/17/19 14:30	12/18/19 10:30	
480-164381-7	3-ORA-011-001-07	Water	12/17/19 16:00	12/18/19 10:30	
480-164381-8	3-ORA-011-001-08	Water	12/17/19 17:30	12/18/19 10:30	



480-164381 Chain of Custody

Eurofins TestAmerica, Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record



eurofins

Environment Testing
TestAmerica

480-164381 Chain of Custody

Client Information (Sub Contract Lab)		Sampler: Lab PM: Fischer, Brian J		JC No: 80-53778.1			
Client Contact: Shipping/Receiving		Phone: E-Mail: brian.fischer@testamericainc.com		Page: Page 1 of 1			
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-164381-1			
Address: 30 Community Drive, Suite 11, South Burlington, VT, 05403		Due Date Requested: 12/31/2019		Analysis Requested			
State, Zip: VT, 05403		TAT Requested (days):		Preservation Codes:			
Phone: 802-660-1990(Tel) 802-660-1919(Fax)		PO #:		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 Other:			
Email:		WO #:		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecalhydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)			
Project Name: 3-ORA-011 St Columba LF		Project #: 48021428		Total Number of containers			
Site:		SSOW#:		Special Instructions/Note:			
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Seewater, Solid, or water/oil, BT=Toxic, A=Air)	Field Filled Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC IDA/3656, IWT PFA, Standard List (21 analytes)
3-ORA-011-001-01 (480-164381-1)	12/17/19	09:00 Eastern	Water	Water	X	X	
3-ORA-011-001-02 (480-164381-2)	12/17/19	09:05 Eastern	Water	Water	X	X	
3-ORA-011-001-03 (480-164381-3)	12/17/19	09:15 Eastern	Water	Water	X	X	
3-ORA-011-001-04 (480-164381-4)	12/17/19	12:15 Eastern	Water	Water	X	X	
3-ORA-011-001-05 (480-164381-5)	12/17/19	13:45 Eastern	Water	Water	X	X	
3-ORA-011-001-06 (480-164381-6)	12/17/19	14:30 Eastern	Water	Water	X	X	
3-ORA-011-001-07 (480-164381-7)	12/17/19	16:00 Eastern	Water	Water	X	X	
Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our 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/test/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 compliance to Eurofins TestAmerica.							
Possible Hazard Identification							
Unconfirmed							
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2							
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
Return To Client ☐ Disposal By Lab ☐ Archive For ☐ Months							
Special Instructions/QC Requirements:							
Empty Kit Relinquished by:							
Relinquished by: Andrew C. Vols Date/Time: 12/28/19 9:17:00 Company: JTA							
Relinquished by: Date/Time: Company:							
Relinquished by: Date/Time: Company:							
Custody Seals Intact: Yes ☒ No ☐ Custody Seal No.: 975470, -472, -473							
Cooler Temperature(s) °C and Other Remarks: 45, 3, 4, 3, 7							

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 480-164381-1

Login Number: 164381

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Wallace, Cameron

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is 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 sample IDs on the containers 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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	PARSONS
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 480-164381-1

Login Number: 164381

List Number: 2

Creator: McNabb, Robert W

List Source: Eurofins TestAmerica, Burlington

List Creation: 12/21/19 01:09 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	975470, -472, -473
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	1.5°C, 3.4°C, 3.7°C,
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	Received project as a subcontract.
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.	N/A	
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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	