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ANALYTICAL REPORT

PREPARED FOR

Attn: Mike Chicoine
USACE WAD
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Washington, Washington, DC 20016

Generated 2/16/2024 4:55:00 PM

JOB DESCRIPTION

USACE-WAD UCMR5
VA6013010 UCMR5

JOB NUMBER

380-82315-1

Eurofins Eaton Analytical Pomona

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Eaton Analytical, LLC Project Manager.

Compliance Statement

1. Laboratory is accredited in accordance with TNI 2016 Standards and ISO/IEC 17025:2017.
2. Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis
3. Test results relate only to the sample(s) tested.
4. This report shall not be reproduced except in full, without the written approval of the laboratory.
5. Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below. (DW, Water matrices)

Authorization



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Authorized for release by
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Definitions/Glossary

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Qualifiers

Metals

Qualifier	Qualifier Description
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
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: USACE WAD
Project: USACE-WAD UCMR5

Job ID: 380-82315-1

Job ID: 380-82315-1

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Job Narrative 380-82315-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 2/8/2024 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°C

PFAS

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

Metals

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

Detection Summary

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Client Sample ID: Dalecarlia Intertie
PWSID Number: VA6013010

Lab Sample ID: 380-82315-1

No Detections.

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This Detection Summary does not include radiochemical test results.

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Client Sample Results

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Client Sample ID: Dalecarlia Intertie

Lab Sample ID: 380-82315-1

Date Collected: 02/07/24 12:30

Matrix: Drinking Water

Date Received: 02/08/24 10:35

PWSID Number: VA6013010

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.0050		0.0050	ug/L		02/13/24 05:15	02/14/24 15:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.0050		0.0050	ug/L		02/13/24 05:15	02/14/24 15:23	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.0030		0.0030	ug/L		02/13/24 05:15	02/14/24 15:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.0050		0.0050	ug/L		02/13/24 05:15	02/14/24 15:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.0030		0.0030	ug/L		02/13/24 05:15	02/14/24 15:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.0020		0.0020	ug/L		02/13/24 05:15	02/14/24 15:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<0.0050		0.0050	ug/L		02/13/24 05:15	02/14/24 15:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.0200		0.0200	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.0030		0.0030	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.0040		0.0040	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.0030		0.0030	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluorobutanesulfonic acid (PFBS)	<0.0030		0.0030	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluorobutanoic acid (PFBA)	<0.0050		0.0050	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluorodecanoic acid (PFDA)	<0.0030		0.0030	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluorododecanoic acid (PFDoA)	<0.0030		0.0030	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.0030		0.0030	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluoroheptanoic acid (PFHpA)	<0.0030		0.0030	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluorohexanesulfonic acid (PFHxS)	<0.0030		0.0030	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluorohexanoic acid (PFHxA)	<0.0030		0.0030	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluorononanoic acid (PFNA)	<0.0040		0.0040	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluorooctanesulfonic acid (PFOS)	<0.0040		0.0040	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluorooctanoic acid (PFOA)	<0.0040		0.0040	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluoropentanesulfonic acid (PFPeS)	<0.0040		0.0040	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluoropentanoic acid (PFPeA)	<0.0030		0.0030	ug/L		02/13/24 05:15	02/14/24 15:23	1
Perfluoroundecanoic acid (PFUnA)	<0.0020		0.0020	ug/L		02/13/24 05:15	02/14/24 15:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	77		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C2-4:2-FTS	183		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C2-6:2-FTS	122		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C2-8:2-FTS	94		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C3 HFPO-DA	88		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C3 PFBS	93		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C3 PFHxS	100		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C4 PFBA	103		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C4 PFHpA	99		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C5 PFHxA	96		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C5 PFPeA	172		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C6 PFDA	80		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C7 PFUnA	75		50 - 200	02/13/24 05:15	02/14/24 15:23	1

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Client Sample Results

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Client Sample ID: Dalecarlia Intertie

Lab Sample ID: 380-82315-1

Date Collected: 02/07/24 12:30

Matrix: Drinking Water

Date Received: 02/08/24 10:35

PWSID Number: VA6013010

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	95		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C8 PFOS	94		50 - 200	02/13/24 05:15	02/14/24 15:23	1
13C9 PFNA	87		50 - 200	02/13/24 05:15	02/14/24 15:23	1

Method: EPA 537.1 UCMR5 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	<0.0050		0.0050	ug/L		02/12/24 09:56	02/13/24 20:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.0060		0.0060	ug/L		02/12/24 09:56	02/13/24 20:56	1
Perfluorotetradecanoic acid (PFTA)	<0.0080		0.0080	ug/L		02/12/24 09:56	02/13/24 20:56	1
Perfluorotridecanoic acid (PFTrDA)	<0.0070		0.0070	ug/L		02/12/24 09:56	02/13/24 20:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	104		70 - 130	02/12/24 09:56	02/13/24 20:56	1
13C2 PFHxA	103		70 - 130	02/12/24 09:56	02/13/24 20:56	1
13C3-GenX	87		70 - 130	02/12/24 09:56	02/13/24 20:56	1
d5-NETFOSAA	106		70 - 130	02/12/24 09:56	02/13/24 20:56	1

Method: EPA 200.7 UCMR5 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<9.00		9.00	ug/L		02/09/24 10:19	02/09/24 17:21	1

Surrogate Summary

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Method: 537.1 UCMR5 - Perfluorinated Alkyl Acids (LC/MS)

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDA	PFHxA	GenX	d5NEFOS
		(70-130)	(70-130)	(70-130)	(70-130)
380-82302-A-1-A MS	Matrix Spike	100	104	101	111
380-82302-B-1-A MSD	Matrix Spike Duplicate	102	103	103	112
380-82315-1	Dalecarlia Intertie	104	103	87	106
LLCS 380-76095/16-A	Lab Control Sample	98	96	93	104
MBL 380-76095/15-A	Method Blank	91	90	85	102

Surrogate Legend

PFDA = 13C2 PFDA

PFHxA = 13C2 PFHxA

GenX = 13C3-GenX

d5NEFOS = d5-NEtFOSAA

Isotope Dilution Summary

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Matrix: Drinking Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDoA (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)	HFPODA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	PFBA (50-200)
380-82315-1	Dalecarlia Intertie	77	183	122	94	88	93	100	103
380-82550-E-1-A MS	Matrix Spike	85	133	106	93	81	99	104	95
380-82550-F-1-A MSD	Matrix Spike Duplicate	86	127	102	92	79	99	101	90
LLCS 380-76273/22-A	Lab Control Sample	98	100	98	87	93	109	106	108
MBL 380-76273/21-A	Method Blank	95	110	108	93	86	103	107	108

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	C4PFHA (50-200)	13C5PHA (50-200)	PFPeA (50-200)	C6PFDA (50-200)	13C7PUA (50-200)	C8PFOA (50-200)	C8PFOS (50-200)	C9PFNA (50-200)
380-82315-1	Dalecarlia Intertie	99	96	172	80	75	95	94	87
380-82550-E-1-A MS	Matrix Spike	90	89	111	84	84	90	101	82
380-82550-F-1-A MSD	Matrix Spike Duplicate	88	87	109	84	83	85	98	82
LLCS 380-76273/22-A	Lab Control Sample	109	103	103	99	93	108	100	101
MBL 380-76273/21-A	Method Blank	104	103	107	96	98	106	104	97

Surrogate Legend

- PFDoA = 13C2 PFDoA
- 42FTS = 13C2-4:2-FTS
- 62FTS = 13C2-6:2-FTS
- 82FTS = 13C2-8:2-FTS
- HFPODA = 13C3 HFPO-DA
- C3PFBS = 13C3 PFBS
- C3PFHS = 13C3 PFHxS
- PFBA = 13C4 PFBA
- C4PFHA = 13C4 PFHpA
- 13C5PHA = 13C5 PFHxA
- PFPeA = 13C5 PFPeA
- C6PFDA = 13C6 PFDA
- 13C7PUA = 13C7 PFUnA
- C8PFOA = 13C8 PFOA
- C8PFOS = 13C8 PFOS
- C9PFNA = 13C9 PFNA

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Lab Sample ID: MBL 380-76273/21-A
Matrix: Drinking Water
Analysis Batch: 76588

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 76273

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.0010		0.0050	ug/L		02/13/24 05:15	02/14/24 11:56	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.0010		0.0050	ug/L		02/13/24 05:15	02/14/24 11:56	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.0010		0.0030	ug/L		02/13/24 05:15	02/14/24 11:56	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.0010		0.0050	ug/L		02/13/24 05:15	02/14/24 11:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.0010		0.0030	ug/L		02/13/24 05:15	02/14/24 11:56	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.0007		0.0020	ug/L		02/13/24 05:15	02/14/24 11:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<0.0010		0.0050	ug/L		02/13/24 05:15	02/14/24 11:56	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.0010		0.0200	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.0010		0.0030	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.0010		0.0040	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.0010		0.0030	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluorobutanesulfonic acid (PFBS)	<0.0010		0.0030	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluorobutanoic acid (PFBA)	<0.0010		0.0050	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluorodecanoic acid (PFDA)	<0.0010		0.0030	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluorododecanoic acid (PFDoA)	<0.0010		0.0030	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.0010		0.0030	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluoroheptanoic acid (PFHpA)	<0.0010		0.0030	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluorohexanesulfonic acid (PFHxS)	<0.0010		0.0030	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluorohexanoic acid (PFHxA)	<0.0010		0.0030	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluorononanoic acid (PFNA)	<0.0010		0.0040	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluorooctanesulfonic acid (PFOS)	<0.0010		0.0040	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluorooctanoic acid (PFOA)	<0.0010		0.0040	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluoropentanesulfonic acid (PFPeS)	<0.0010		0.0040	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluoropentanoic acid (PFPeA)	<0.0010		0.0030	ug/L		02/13/24 05:15	02/14/24 11:56	1
Perfluoroundecanoic acid (PFUnA)	<0.0007		0.0020	ug/L		02/13/24 05:15	02/14/24 11:56	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	95		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C2-4:2-FTS	110		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C2-6:2-FTS	108		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C2-8:2-FTS	93		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C3 HFPO-DA	86		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C3 PFBS	103		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C3 PFHxS	107		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C4 PFBA	108		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C4 PFHpA	104		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C5 PFHxA	103		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C5 PFPeA	107		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C6 PFDA	96		50 - 200	02/13/24 05:15	02/14/24 11:56	1

Eurofins Eaton Analytical Pomona

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MBL 380-76273/21-A
Matrix: Drinking Water
Analysis Batch: 76588

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 76273

Isotope Dilution	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C7 PFUnA	98		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C8 PFOA	106		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C8 PFOS	104		50 - 200	02/13/24 05:15	02/14/24 11:56	1
13C9 PFNA	97		50 - 200	02/13/24 05:15	02/14/24 11:56	1

Lab Sample ID: LLCS 380-76273/22-A
Matrix: Drinking Water
Analysis Batch: 76588

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76273

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	0.00200	0.0021		ug/L		105	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	0.00200	0.0021		ug/L		105	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	0.00200	0.0025		ug/L		124	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.00200	0.0019		ug/L		94	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	0.00200	0.0021		ug/L		103	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	0.00200	0.0023		ug/L		115	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	0.00200	0.0018		ug/L		91	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	0.00200	0.0021		ug/L		107	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	0.00200	0.0019		ug/L		96	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	0.00200	0.0021		ug/L		103	50 - 150
Perfluorobutanesulfonic acid (PFBS)	0.00200	0.0020		ug/L		102	50 - 150
Perfluorobutanoic acid (PFBA)	0.00200	0.0019		ug/L		93	50 - 150
Perfluorodecanoic acid (PFDA)	0.00200	0.0021		ug/L		107	50 - 150
Perfluorododecanoic acid (PFDoA)	0.00200	0.0019		ug/L		95	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	0.00200	0.0023		ug/L		114	50 - 150
Perfluoroheptanoic acid (PFHpA)	0.00200	0.0021		ug/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	0.00200	0.0020		ug/L		101	50 - 150
Perfluorohexanoic acid (PFHxA)	0.00200	0.0022		ug/L		112	50 - 150
Perfluorononanoic acid (PFNA)	0.00200	0.0021		ug/L		107	50 - 150
Perfluorooctanesulfonic acid (PFOS)	0.00200	0.0022		ug/L		109	50 - 150
Perfluorooctanoic acid (PFOA)	0.00200	0.0021		ug/L		104	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	0.00200	0.0019		ug/L		93	50 - 150
Perfluoropentanoic acid (PFPeA)	0.00200	0.0022		ug/L		109	50 - 150

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QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: LLCS 380-76273/22-A
Matrix: Drinking Water
Analysis Batch: 76588

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76273

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	0.00200	0.0019		ug/L		95	50 - 150
LLCS LLCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C2 PFDaA	98		50 - 200				
13C2-4:2-FTS	100		50 - 200				
13C2-6:2-FTS	98		50 - 200				
13C2-8:2-FTS	87		50 - 200				
13C3 HFPO-DA	93		50 - 200				
13C3 PFBS	109		50 - 200				
13C3 PFHxS	106		50 - 200				
13C4 PFBA	108		50 - 200				
13C4 PFHpA	109		50 - 200				
13C5 PFHxA	103		50 - 200				
13C5 PFPeA	103		50 - 200				
13C6 PFDA	99		50 - 200				
13C7 PFUnA	93		50 - 200				
13C8 PFOA	108		50 - 200				
13C8 PFOS	100		50 - 200				
13C9 PFNA	101		50 - 200				

Lab Sample ID: 380-82550-E-1-A MS
Matrix: Drinking Water
Analysis Batch: 76588

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 76273

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.0050		0.0600	0.0548		ug/L		91	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.0050		0.0600	0.0627		ug/L		105	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.0030		0.0600	0.0620		ug/L		103	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.0050		0.0600	0.0602		ug/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.0030		0.0600	0.0572		ug/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.0020		0.0600	0.0585		ug/L		97	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<0.0050		0.0600	0.0572		ug/L		95	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.0200		0.0600	0.0561		ug/L		93	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.0030		0.0600	0.0607		ug/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.0040		0.0600	0.0631		ug/L		105	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.0030		0.0600	0.0555		ug/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<0.0030		0.0600	0.0598		ug/L		100	70 - 130

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-82550-E-1-A MS

Client Sample ID: Matrix Spike

Matrix: Drinking Water

Prep Type: Total/NA

Analysis Batch: 76588

Prep Batch: 76273

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				
Perfluorobutanoic acid (PFBA)	<0.0050		0.0600	0.0586		ug/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	<0.0030		0.0600	0.0600		ug/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	<0.0030		0.0600	0.0615		ug/L		103	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<0.0030		0.0600	0.0617		ug/L		103	70 - 130
Perfluoroheptanoic acid (PFHpA)	<0.0030		0.0600	0.0608		ug/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<0.0030		0.0600	0.0579		ug/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	<0.0030		0.0600	0.0573		ug/L		96	70 - 130
Perfluorononanoic acid (PFNA)	<0.0040		0.0600	0.0589		ug/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<0.0040		0.0600	0.0638		ug/L		104	70 - 130
Perfluorooctanoic acid (PFOA)	<0.0040		0.0600	0.0599		ug/L		100	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<0.0040		0.0600	0.0588		ug/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	<0.0030		0.0600	0.0618		ug/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	<0.0020		0.0600	0.0609		ug/L		101	70 - 130

Isotope Dilution	MS	MS	Limits
	%Recovery	Qualifier	
13C2 PFDoA	85		50 - 200
13C2-4:2-FTS	133		50 - 200
13C2-6:2-FTS	106		50 - 200
13C2-8:2-FTS	93		50 - 200
13C3 HFPO-DA	81		50 - 200
13C3 PFBS	99		50 - 200
13C3 PFHxS	104		50 - 200
13C4 PFBA	95		50 - 200
13C4 PFHpA	90		50 - 200
13C5 PFHxA	89		50 - 200
13C5 PFPeA	111		50 - 200
13C6 PFDA	84		50 - 200
13C7 PFUnA	84		50 - 200
13C8 PFOA	90		50 - 200
13C8 PFOS	101		50 - 200
13C9 PFNA	82		50 - 200

Lab Sample ID: 380-82550-F-1-A MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Drinking Water

Prep Type: Total/NA

Analysis Batch: 76588

Prep Batch: 76273

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.0050		0.0600	0.0551		ug/L		92	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.0050		0.0600	0.0624		ug/L		104	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.0030		0.0600	0.0588		ug/L		98	70 - 130	5	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.0050		0.0600	0.0563		ug/L		94	70 - 130	7	30

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QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-82550-F-1-A MSD

Matrix: Drinking Water

Analysis Batch: 76588

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 76273

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.0030		0.0600	0.0535		ug/L		89	70 - 130	7	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.0020		0.0600	0.0558		ug/L		93	70 - 130	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<0.0050		0.0600	0.0551		ug/L		92	70 - 130	4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.0200		0.0600	0.0487		ug/L		81	70 - 130	14	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.0030		0.0600	0.0565		ug/L		94	70 - 130	7	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.0040		0.0600	0.0641		ug/L		107	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.0030		0.0600	0.0565		ug/L		94	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<0.0030		0.0600	0.0586		ug/L		98	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<0.0050		0.0600	0.0596		ug/L		98	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<0.0030		0.0600	0.0587		ug/L		98	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<0.0030		0.0600	0.0571		ug/L		95	70 - 130	7	30
Perfluoroheptanesulfonic acid (PFHpS)	<0.0030		0.0600	0.0600		ug/L		100	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<0.0030		0.0600	0.0594		ug/L		99	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<0.0030		0.0600	0.0579		ug/L		96	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<0.0030		0.0600	0.0565		ug/L		94	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<0.0040		0.0600	0.0592		ug/L		99	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<0.0040		0.0600	0.0613		ug/L		100	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	<0.0040		0.0600	0.0607		ug/L		101	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<0.0040		0.0600	0.0586		ug/L		98	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	<0.0030		0.0600	0.0591		ug/L		98	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	<0.0020		0.0600	0.0612		ug/L		102	70 - 130	0	30

Isotope Dilution	MSD	MSD	Limits
	%Recovery	Qualifier	
13C2 PFDoA	86		50 - 200
13C2-4:2-FTS	127		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	92		50 - 200
13C3 HFPO-DA	79		50 - 200
13C3 PFBS	99		50 - 200
13C3 PFHxS	101		50 - 200
13C4 PFBA	90		50 - 200
13C4 PFHpA	88		50 - 200
13C5 PFHxA	87		50 - 200
13C5 PFPeA	109		50 - 200
13C6 PFDA	84		50 - 200
13C7 PFUnA	83		50 - 200
13C8 PFOA	85		50 - 200

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-82550-F-1-A MSD
Matrix: Drinking Water
Analysis Batch: 76588

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 76273

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C8 PFOS	98		50 - 200
13C9 PFNA	82		50 - 200

Method: 537.1 UCMR5 - Perfluorinated Alkyl Acids (LC/MS)

Lab Sample ID: MBL 380-76095/15-A
Matrix: Drinking Water
Analysis Batch: 76358

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 76095

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.0010		0.0050	ug/L		02/12/24 09:56	02/13/24 19:17	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.0010		0.0060	ug/L		02/12/24 09:56	02/13/24 19:17	1
Perfluorotetradecanoic acid (PFTA)	<0.0010		0.0080	ug/L		02/12/24 09:56	02/13/24 19:17	1
Perfluorotridecanoic acid (PFTrDA)	<0.0010		0.0070	ug/L		02/12/24 09:56	02/13/24 19:17	1

Surrogate	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFDA	91		70 - 130	02/12/24 09:56	02/13/24 19:17	1
13C2 PFHxA	90		70 - 130	02/12/24 09:56	02/13/24 19:17	1
13C3-GenX	85		70 - 130	02/12/24 09:56	02/13/24 19:17	1
d5-NEtFOSAA	102		70 - 130	02/12/24 09:56	02/13/24 19:17	1

Lab Sample ID: LLCS 380-76095/16-A
Matrix: Drinking Water
Analysis Batch: 76358

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76095

Analyte	Spike Added	LLCS LLCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.00200	0.0023		ug/L		116	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.00200	0.0024		ug/L		118	50 - 150
Perfluorotetradecanoic acid (PFTA)	0.00200	0.0022		ug/L		111	50 - 150
Perfluorotridecanoic acid (PFTrDA)	0.00200	0.0022		ug/L		110	50 - 150

Surrogate	LLCS LLCS		Limits
	%Recovery	Qualifier	
13C2 PFDA	98		70 - 130
13C2 PFHxA	96		70 - 130
13C3-GenX	93		70 - 130
d5-NEtFOSAA	104		70 - 130

Lab Sample ID: 380-82302-A-1-A MS
Matrix: Drinking Water
Analysis Batch: 76358

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 76095

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.0050		0.0250	0.0261		ug/L		104	70 - 130

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Method: 537.1 UCMR5 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: 380-82302-A-1-A MS
Matrix: Drinking Water
Analysis Batch: 76358

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 76095

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits	
	Result	Qualifier	Added	Result	Qualifier						
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	<0.0060		0.0250	0.0253		ug/L		101	70 - 130		
Perfluorotetradecanoic acid (PFTA)	<0.0080		0.0250	0.0211		ug/L		85	70 - 130		
Perfluorotridecanoic acid (PFTrDA)	<0.0070		0.0250	0.0237		ug/L		95	70 - 130		
Surrogate	%Recovery	MS MS Qualifier	Limits								
13C2 PFDA	100		70 - 130								
13C2 PFHxA	104		70 - 130								
13C3-GenX	101		70 - 130								
d5-NEtFOSAA	111		70 - 130								

Lab Sample ID: 380-82302-B-1-A MSD
Matrix: Drinking Water
Analysis Batch: 76358

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 76095

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	
	Result	Qualifier	Added	Result	Qualifier						RPD	Limit
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	<0.0050		0.0250	0.0277		ug/L		111	70 - 130	6	30	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	<0.0060		0.0250	0.0275		ug/L		110	70 - 130	8	30	
Perfluorotetradecanoic acid (PFTA)	<0.0080		0.0250	0.0225		ug/L		90	70 - 130	6	30	
Perfluorotridecanoic acid (PFTrDA)	<0.0070		0.0250	0.0247		ug/L		99	70 - 130	4	30	
Surrogate	%Recovery	MSD MSD Qualifier	Limits									
13C2 PFDA	102		70 - 130									
13C2 PFHxA	103		70 - 130									
13C3-GenX	103		70 - 130									
d5-NEtFOSAA	112		70 - 130									

Method: 200.7 UCMR5 - Metals (ICP)

Lab Sample ID: MB 380-75786/1-A
Matrix: Drinking Water
Analysis Batch: 75870

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 75786

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier							
Lithium	<9.00		9.00	ug/L		02/09/24 10:19	02/09/24 16:50		1

Lab Sample ID: LCS 380-75786/3-A
Matrix: Drinking Water
Analysis Batch: 75870

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 75786

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	Limits

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Method: 200.7 UCMR5 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 380-75786/4-A
Matrix: Drinking Water
Analysis Batch: 75870

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 75786

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	30.0	26.8		ug/L		89	85 - 115	2	15

Lab Sample ID: LLCS 380-75786/2-A
Matrix: Drinking Water
Analysis Batch: 75870

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 75786

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	9.00	6.31	J	ug/L		70	50 - 150		

Lab Sample ID: 380-81734-G-1-B LMS
Matrix: Drinking Water
Analysis Batch: 75870

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 75786

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	<9.00		9.00	13.3		ug/L		111	50 - 150		

Lab Sample ID: 380-81734-G-1-C LMSD
Matrix: Drinking Water
Analysis Batch: 75870

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 75786

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	<9.00		9.00	13.9		ug/L		117	50 - 150	4	50

QC Association Summary

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

LCMS

Prep Batch: 76095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-82315-1	Dalecarlia Intertie	Total/NA	Drinking Water	537.1 DW	
MBL 380-76095/15-A	Method Blank	Total/NA	Drinking Water	537.1 DW	
LLCS 380-76095/16-A	Lab Control Sample	Total/NA	Drinking Water	537.1 DW	
380-82302-A-1-A MS	Matrix Spike	Total/NA	Drinking Water	537.1 DW	
380-82302-B-1-A MSD	Matrix Spike Duplicate	Total/NA	Drinking Water	537.1 DW	

Prep Batch: 76273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-82315-1	Dalecarlia Intertie	Total/NA	Drinking Water	533	
MBL 380-76273/21-A	Method Blank	Total/NA	Drinking Water	533	
LLCS 380-76273/22-A	Lab Control Sample	Total/NA	Drinking Water	533	
380-82550-E-1-A MS	Matrix Spike	Total/NA	Drinking Water	533	
380-82550-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Drinking Water	533	

Analysis Batch: 76358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-82315-1	Dalecarlia Intertie	Total/NA	Drinking Water	537.1 UCMR5	76095
MBL 380-76095/15-A	Method Blank	Total/NA	Drinking Water	537.1 UCMR5	76095
LLCS 380-76095/16-A	Lab Control Sample	Total/NA	Drinking Water	537.1 UCMR5	76095
380-82302-A-1-A MS	Matrix Spike	Total/NA	Drinking Water	537.1 UCMR5	76095
380-82302-B-1-A MSD	Matrix Spike Duplicate	Total/NA	Drinking Water	537.1 UCMR5	76095

Analysis Batch: 76588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-82315-1	Dalecarlia Intertie	Total/NA	Drinking Water	533	76273
MBL 380-76273/21-A	Method Blank	Total/NA	Drinking Water	533	76273
LLCS 380-76273/22-A	Lab Control Sample	Total/NA	Drinking Water	533	76273
380-82550-E-1-A MS	Matrix Spike	Total/NA	Drinking Water	533	76273
380-82550-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Drinking Water	533	76273

Metals

Prep Batch: 75786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-82315-1	Dalecarlia Intertie	Total/NA	Drinking Water	200.7 UCMR5	
MB 380-75786/1-A	Method Blank	Total/NA	Drinking Water	200.7 UCMR5	
LCS 380-75786/3-A	Lab Control Sample	Total/NA	Drinking Water	200.7 UCMR5	
LCSD 380-75786/4-A	Lab Control Sample Dup	Total/NA	Drinking Water	200.7 UCMR5	
LLCS 380-75786/2-A	Lab Control Sample	Total/NA	Drinking Water	200.7 UCMR5	
380-81734-G-1-B LMS	Matrix Spike	Total/NA	Drinking Water	200.7 UCMR5	
380-81734-G-1-C LMSD	Matrix Spike Duplicate	Total/NA	Drinking Water	200.7 UCMR5	

Analysis Batch: 75870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-82315-1	Dalecarlia Intertie	Total/NA	Drinking Water	200.7 UCMR5	75786
MB 380-75786/1-A	Method Blank	Total/NA	Drinking Water	200.7 UCMR5	75786
LCS 380-75786/3-A	Lab Control Sample	Total/NA	Drinking Water	200.7 UCMR5	75786
LCSD 380-75786/4-A	Lab Control Sample Dup	Total/NA	Drinking Water	200.7 UCMR5	75786
LLCS 380-75786/2-A	Lab Control Sample	Total/NA	Drinking Water	200.7 UCMR5	75786
380-81734-G-1-B LMS	Matrix Spike	Total/NA	Drinking Water	200.7 UCMR5	75786
380-81734-G-1-C LMSD	Matrix Spike Duplicate	Total/NA	Drinking Water	200.7 UCMR5	75786

Eurofins Eaton Analytical Pomona

Lab Chronicle

Client: USACE WAD
 Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Client Sample ID: Dalecarlia Intertie

Lab Sample ID: 380-82315-1

Date Collected: 02/07/24 12:30

Matrix: Drinking Water

Date Received: 02/08/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			76273	XTD8	EA POM	02/13/24 05:15
Total/NA	Analysis	533		1	76588	R6YA	EA POM	02/14/24 15:23
Total/NA	Prep	537.1 DW			76095	A5GB	EA POM	02/12/24 09:56
Total/NA	Analysis	537.1 UCMR5		1	76358	R6YA	EA POM	02/13/24 20:56
Total/NA	Prep	200.7 UCMR5			75786	Z45W	EA POM	02/09/24 10:19
Total/NA	Analysis	200.7 UCMR5		1	75870	T8RV	EA POM	02/09/24 17:21

Laboratory References:

EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

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Accreditation/Certification Summary

Client: USACE WAD
 Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Maryland	State	224	03-31-24
<p>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.</p>			
Analysis Method	Prep Method	Matrix	Analyte
200.7 UCMR5	200.7 UCMR5	Drinking Water	Lithium
533	533	Drinking Water	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
533	533	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)
533	533	Drinking Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Drinking Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)
533	533	Drinking Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Drinking Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Drinking Water	Perfluorobutanesulfonic acid (PFBS)
533	533	Drinking Water	Perfluorobutanoic acid (PFBA)
533	533	Drinking Water	Perfluorodecanoic acid (PFDA)
533	533	Drinking Water	Perfluorododecanoic acid (PFDoA)
533	533	Drinking Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Drinking Water	Perfluoroheptanoic acid (PFHpA)
533	533	Drinking Water	Perfluorohexanesulfonic acid (PFHxS)
533	533	Drinking Water	Perfluorohexanoic acid (PFHxA)
533	533	Drinking Water	Perfluorononanoic acid (PFNA)
533	533	Drinking Water	Perfluorooctanesulfonic acid (PFOS)
533	533	Drinking Water	Perfluorooctanoic acid (PFOA)
533	533	Drinking Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Drinking Water	Perfluoropentanoic acid (PFPeA)
533	533	Drinking Water	Perfluoroundecanoic acid (PFUnA)
537.1 UCMR5	537.1 DW	Drinking Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537.1 UCMR5	537.1 DW	Drinking Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537.1 UCMR5	537.1 DW	Drinking Water	Perfluorotetradecanoic acid (PFTA)
537.1 UCMR5	537.1 DW	Drinking Water	Perfluorotridecanoic acid (PFTrDA)
Utah	NELAP	CA00006	01-31-25

Method Summary

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

Job ID: 380-82315-1

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1 UCMR5	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
200.7 UCMR5	Metals (ICP)	EPA	EA POM
200.7 UCMR5	Preparation, Total Recoverable Metals	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100



Sample Summary

Client: USACE WAD
Project/Site: USACE-WAD UCMR5

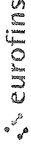
Job ID: 380-82315-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-82315-1	Dalecarlia Intertie	Drinking Water	02/07/24 12:30	02/08/24 10:35	VA6013010

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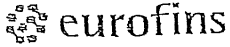
Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona, CA 91768-2642
Phone (626) 386-1100

Chain of Custody Record



Client Information	Sampler R. Hoffa	Lab # French, Thomas D	Carrier Tracking No(s)	COC No 380-48733-14122 1						
Client Contact Robert Hoffa	Phone 202-345-5928	E-Mail Tom.French@et.eurofins.com	State of Origin	Page Page 1 of 1						
Company USACE WAD	PWSID VA6013010			Job #						
Address 5900 Mac Arthur Boulevard	Due Date Requested: TAT Requested (days): 14	Analysis Requested								
City Washington	Compliance Project: Δ Yes									
State DC, 20016	FO # W912DR24D0003									
Phone 202-587-9139(Tel)	WO #									
Email robert.p.hoffa@usace.army.mil	Project # 38006230									
Project Name USACE-WAD UCMR5/ Event Desc: VA6013010 UCMR5	SSOW#									
Site Washington, DC										
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, On-waste, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	537.1 UCMR5 - EPA 537.1 UCMR5	533 UCMR5 - EPA 533 UCMR5	Special Instructions/Note:	
Dalecarlia Interite	2/17/24	12:30	G	Drinking Water	X	Y	X	X	380-82315 COC 	
FRB - Dalecarlia Interite	2/17/24	12:30	G	Drinking Water	X	X	X	X		
Possible Hazard Identification			Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
<input checked="" type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Poison B	<input type="checkbox"/> Unknown	<input type="checkbox"/> Radiological	<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab			Archive For _____ Months	
Deliverable Requested I, II, III, IV, Other (specify)			Special Instructions/QC Requirements							
Empty Kit Relinquished by:	Date	Time	Company	Method of Shipment:						
Relinquished by:										
Relinquished by:	2/17/24	13:00	USACE/WAD	Received by:	R. Hoffa					
Relinquished by:				Received by:						
Custody Seal Intact. Δ Yes Δ No	Custody Seal No									





Eaton Analytical

UCMR5 INTERNAL CHAIN OF CUSTODY RECORD

EEA Folder/Login Number: _____

SAMPLES RECEIVED WITHIN 48 HOURS OF COLLECTION TIME?

TYPE OF ICE: Real Synthetic _____ No Ice _____

CONDITION OF ICE: Frozen Partially Frozen _____ Thawed _____ N/A _____

CONDITION OF SAMPLE: Frozen _____ Partially Frozen _____ Not Frozen

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

Compliance Acceptance Criteria:

7177 9925 5953

If sample(s) received:

- 1) on the same day as the collection day; sample temperature may be $\geq 10^{\circ}\text{C}$ with evidence of cooling from sample collection
- 2) within the first 48 hours of collection time; sample temperature must be $\leq 10^{\circ}\text{C}$ (except 200.7) and not frozen, and
- 3) after 48 hours of collection time; sample temperature must be $\leq 6^{\circ}\text{C}$ (except 200.7) and not frozen, and not rejected if refrigerated between collection and shipment documented on UCMR5 COC as "yes."

NOTE

Note: A minimum of 1 representative bottle for every analytical method must be checked for temperature. If the bottle that is checked does not meet the temperature criterion, then the sample bottle is rejected. The temperature of the other samples collected for that method is checked to determine if a valid sample was received.

Facility ID & Unique Field Sample ID: Dale Cavalier Inter-tic

Temperature Measured by: Ryan Segura Date/Time: 2/8/24 1035

IR Gun ID: 750A Calibration Expiration Date: 3/21/24

Method	Container ID	Observation (°C)	Correction Factor (°C)	Final (°C)
UCMR5 200.7	1	1.3	-0.3	1.0
UCMR5 533	1	0.9	-0.3	0.6
	2	+	=	=
	3	+	=	=
	FRB	+	=	=
UCMR5 537.1	1	1.3	-0.3	1.0
	2	+	=	=
	3	+	=	=
	FRB	+	=	=

Note 1: If samples are out of temperature range, let the PMS know. PMS will determine whether to proceed with analysis or notify the PWS to resample.
Note 2: A resample must be collected within 30 days of PWS being notified of resampling.

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
	RYAN SEGURA	Eurofins Eaton Analytical	2/8/24	1035

Bottle Order Information

Bottle Order: USACE-WAD UCMR5 VA6013010
 Bottle Order #: 14122
 Request From Client: 12/7/2023
 Date Order Posted: 12/14/2023 8:49:36AM
 Order Status: Ready To Process
 Prepared By: Thomas French
Deliver By Date: 1/30/2024 11:59:00PM
 Lab Project Number: 38006230
 PWSID: VA6013010

Order Completion Information

Creator: Thomas French
 Filled by:
 Sent Date:
 Sent Via:
 Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
1	1	1	Plastic 250ml - with Nitric Acid	Nitric Acid	200.7_UCMR5 - Lithium	Drinking W	Normal		
1	3	3	Plastic 250ml - Trizma	Trizma	537.1_UCMR5 - EPA 537.1 UCMR5	Drinking W	Normal		
1	3	3	Plastic 250ml - Ammonium Acetate	Ammonium Acetate	533_UCMR5 - EPA 533 UCMR5	Drinking W	Normal		
1	1	1	Plastic 250ml - Reagent Water	None	537.1_UCMR5 - EPA 537.1 UCMR5	Drinking W	Field Reagent B		
1	1	1	Plastic 250ml - Trizma	Trizma	537.1_UCMR5 - EPA 537.1 UCMR5	Drinking W	Field Reagent B		
1	1	1	Plastic 250ml - Reagent Water	None	533_UCMR5 - EPA 533 UCMR5	Drinking W	Field Reagent B		
1	1	1	Plastic 250ml - Ammonium Acetate	Ammonium Acetate	533_UCMR5 - EPA 533 UCMR5	Drinking W	Field Reagent B		
Total									

Total Bottle Summary

Bottle Type Description
 Plastic 250ml - Reagent Water
 Plastic 250ml - Trizma
 Plastic 250ml - Trizma
 Plastic 250ml - with Nitric Acid
 Plastic 250ml - Ammonium Acetate
 Plastic 250ml - Ammonium Acetate

Preservative
 None
 Trizma
 Trizma
 Nitric Acid
 Ammonium Acetate
 Ammonium Acetate

Sample Type
 Field Reagent Blank
 Field Reagent Blank
 Normal
 Normal
 Field Reagent Blank
 Normal

Bottle Count
 2
 1
 3
 1
 1
 3
11

Total Bottles:

Notes to Field Staff:



Scan QR code for field sampler instructions

Health and Safety Notes:

Preservative

Ammonium Acetate

Nitric Acid

Trizma

Comment

Caution! May cause eye, skin, and respiratory tract irritation. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.

CAUTION! STRONG OXIDIZER! CONTAINS 1:1 NITRIC ACID. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.

CAUTION! May cause eye, skin, and respiratory tract irritation



Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.

Login Sample Receipt Checklist

Client: USACE WAD

Job Number: 380-82315-1

Login Number: 82315

List Source: Eurofins Eaton Analytical Pomona

List Number: 1

Creator: Ngo, Theodore

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	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	
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	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	