eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 310
Honolulu, Hawaii 96843

Generated 7/20/2023 7:53:27 PM

JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-51797-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

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 will 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

Rachelle Arada

Generated
7/20/2023 7:53:27 PM

Authorized for release by
Rachelle Arada, Manager of Project Management
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

LCMS

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
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.
¤	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: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Job ID: 380-51797-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative
380-51797-1

Comments
Subcontract results will be provided on a separate report per client's request.

EPA 537.1 and EPA 533 are two distinct methods for the analysis of PFAS in drinking water. The analyses are conducted on differing instrumentation, with calibrations, extraction solvents and sample preservatives being dissimilar among the two methods. Therefore it is probable and not unexpected to see the methods having slight variations in analytical results.

No additional comments.

Receipt
The samples were received on 6/21/2023 9:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.2º C, 0.3º C, 0.5º C and 0.9º C.

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

LCMS
Method 537.1: Surrogate 13C2 PFDA recovered outside of method limits for MRL in prep batch 45392 and analytical batch 45463, confirmed by re-analysis. Please refer to flags. Method only requires one passing MRL for every 24 hours. Please refer to prep batch 45391, analytical batch 45466 for passing MRL that was extracted on the same day. No impact on data.

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: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Client Sample ID: MOANALUA WELLS
PWSID Number: HI0000331

Lab Sample ID: 380-51797-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.4		2.0		ng/L	1		533	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2
PWSID Number: HI0000331

Lab Sample ID: 380-51797-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
PWSID Number: HI0000331

Lab Sample ID: 380-51797-3

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
PWSID Number: HI0000331

Lab Sample ID: 380-51797-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.7		2.0		ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.4		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0		ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		2.0		ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	3.2		2.0		ng/L	1		533	Total/NA

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-51797-9

No Detections.

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-51797-10

No Detections.

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-51797-11

No Detections.

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-51797-12

No Detections.

This Detection Summary does not include radiochemical test results.

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Client Sample ID: MOANALUA WELLS
Date Collected: 06/19/23 10:01
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-1
Matrix: Drinking Water
PWSID Number: HI0000331

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
2,4'-DDD	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
2,4'-DDE	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
2,4'-DDT	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
2-Methylnaphthalene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
4,4'-DDD	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
4,4'-DDE	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
4,4'-DDT	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Acenaphthene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Acenaphthylene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Acetochlor	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Alachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
alpha-BHC	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
alpha-Chlordane	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Anthracene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 12:54	1
Atrazine	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Benzo[a]pyrene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 12:54	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 12:54	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 12:54	1
beta-BHC	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		06/22/23 17:51	06/25/23 12:54	1
Bromacil	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Butachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 12:54	1
Chlorobenzilate	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Chloroneb	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Chlorpyrifos	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Chrysene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 12:54	1
delta-BHC	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		06/22/23 17:51	06/25/23 12:54	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Diclorvos (DDVP)	<0.049	^3+	0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Dieldrin	<0.20		0.20		ug/L		06/22/23 17:51	06/25/23 12:54	1
Diethylphthalate	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 12:54	1
Dimethylphthalate	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 12:54	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		06/22/23 17:51	06/25/23 12:54	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Endosulfan sulfate	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Endrin	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Endrin aldehyde	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
EPTC	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Fluoranthene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1

Client Sample ID: MOANALUA WELLS
Date Collected: 06/19/23 10:01
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-1
Matrix: Drinking Water
PWSID Number: HI0000331

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
gamma-Chlordane	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Heptachlor	<0.039		0.039		ug/L		06/22/23 17:51	06/25/23 12:54	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Isophorone	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 12:54	1
Lindane	<0.039		0.039		ug/L		06/22/23 17:51	06/25/23 12:54	1
Malathion	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Methoxychlor	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Metolachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Molinate	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Naphthalene	<0.29		0.29		ug/L		06/22/23 17:51	06/25/23 12:54	1
Parathion	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Phenanthrene	<0.039		0.039		ug/L		06/22/23 17:51	06/25/23 12:54	1
Propachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Pyrene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Simazine	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Terbacil	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Terbuthylazine	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1
Thiobencarb	<0.20		0.20		ug/L		06/22/23 17:51	06/25/23 12:54	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/22/23 17:51	06/25/23 12:54	1
trans-Nonachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 12:54	1
Trifluralin	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 12:54	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*06/22/23 17:51*	*06/25/23 12:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*101*		*70 - 130*	*06/22/23 17:51*	*06/25/23 12:54*	*1*
Perylene-d12	*96*		*70 - 130*	*06/22/23 17:51*	*06/25/23 12:54*	*1*
Triphenylphosphate	*114*		*70 - 130*	*06/22/23 17:51*	*06/25/23 12:54*	*1*

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)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Client Sample ID: MOANALUA WELLS
Date Collected: 06/19/23 10:01
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluorobutanoic acid (PFBA)	**2.4**		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*62*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C6 PFDA	*83*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C5 PFHxA	*85*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C4 PFHpA	*85*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C8 PFOA	*88*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C9 PFNA	*88*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C7 PFUnA	*85*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C2 PFDoA	*93*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C4 PFBA	*81*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C5 PFPeA	*78*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C3 PFBS	*94*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C3 PFHxS	*91*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C8 PFOS	*94*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C2-4:2-FTS	*92*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C2-6:2-FTS	*94*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*
13C2-8:2-FTS	*94*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:34*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1

Client Sample ID: MOANALUA WELLS

Date Collected: 06/19/23 10:01
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 17:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*114*		*70 - 130*	*06/22/23 06:18*	*06/22/23 17:03*	*1*
13C2 PFHxA	*101*		*70 - 130*	*06/22/23 06:18*	*06/22/23 17:03*	*1*
13C2 PFDA	*105*		*70 - 130*	*06/22/23 06:18*	*06/22/23 17:03*	*1*
13C3-GenX	*94*		*70 - 130*	*06/22/23 06:18*	*06/22/23 17:03*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 06/19/23 11:22
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-2
Matrix: Drinking Water
PWSID Number: HI0000331

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
2,4'-DDD	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
2,4'-DDE	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
2,4'-DDT	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
2-Methylnaphthalene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
4,4'-DDD	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
4,4'-DDE	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
4,4'-DDT	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Acenaphthene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Acenaphthylene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Acetochlor	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Alachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
alpha-BHC	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
alpha-Chlordane	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Anthracene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:14	1
Atrazine	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Benzo[a]pyrene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:14	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:14	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 06/19/23 11:22
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-2
Matrix: Drinking Water
PWSID Number: HI0000331

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:14	1
beta-BHC	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		06/22/23 17:51	06/25/23 13:14	1
Bromacil	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Butachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 13:14	1
Chlorobenzilate	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Chloroneb	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Chlorpyrifos	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Chrysene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:14	1
delta-BHC	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		06/22/23 17:51	06/25/23 13:14	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Diclorvos (DDVP)	<0.049	^3+	0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Dieldrin	<0.20		0.20		ug/L		06/22/23 17:51	06/25/23 13:14	1
Diethylphthalate	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 13:14	1
Dimethylphthalate	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 13:14	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		06/22/23 17:51	06/25/23 13:14	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Endosulfan sulfate	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Endrin	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Endrin aldehyde	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
EPTC	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Fluoranthene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Fluorene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
gamma-Chlordane	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Heptachlor	<0.039		0.039		ug/L		06/22/23 17:51	06/25/23 13:14	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Isophorone	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 13:14	1
Lindane	<0.039		0.039		ug/L		06/22/23 17:51	06/25/23 13:14	1
Malathion	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Methoxychlor	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Metolachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Molinate	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Naphthalene	<0.29		0.29		ug/L		06/22/23 17:51	06/25/23 13:14	1
Parathion	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Phenanthrene	<0.039		0.039		ug/L		06/22/23 17:51	06/25/23 13:14	1
Propachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Pyrene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Simazine	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Terbacil	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1
Terbuthylazine	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 06/19/23 11:22
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-2

Matrix: Drinking Water
PWSID Number: HI0000331

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.20		0.20		ug/L		06/22/23 17:51	06/25/23 13:14	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/22/23 17:51	06/25/23 13:14	1
trans-Nonachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:14	1
Trifluralin	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:14	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.81*	*T J*	*ug/L*		*14.49*	*N/A*	*06/22/23 17:51*	*06/25/23 13:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*104*		*70 - 130*	*06/22/23 17:51*	*06/25/23 13:14*	*1*
Perylene-d12	*98*		*70 - 130*	*06/22/23 17:51*	*06/25/23 13:14*	*1*
Triphenylphosphate	*109*		*70 - 130*	*06/22/23 17:51*	*06/25/23 13:14*	*1*

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)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		07/10/23 08:06	07/11/23 23:44	1

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 06/19/23 11:22
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-2
Matrix: Drinking Water
PWSID Number: HI0000331

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*57*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C6 PFDA	*78*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C5 PFHxA	*79*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C4 PFHpA	*79*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C8 PFOA	*84*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C9 PFNA	*84*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C7 PFUnA	*80*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C2 PFDoA	*90*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C4 PFBA	*75*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C5 PFPeA	*69*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C3 PFBS	*96*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C3 PFHxS	*94*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C8 PFOS	*94*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C2-4:2-FTS	*91*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C2-6:2-FTS	*99*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*
13C2-8:2-FTS	*89*		*50 - 200*	*07/10/23 08:06*	*07/11/23 23:44*	*1*

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 19:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*110*		*70 - 130*	*06/22/23 06:18*	*06/22/23 19:37*	*1*
13C2 PFHxA	*104*		*70 - 130*	*06/22/23 06:18*	*06/22/23 19:37*	*1*
13C2 PFDA	*110*		*70 - 130*	*06/22/23 06:18*	*06/22/23 19:37*	*1*
13C3-GenX	*96*		*70 - 130*	*06/22/23 06:18*	*06/22/23 19:37*	*1*

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 06/19/23 10:56
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-3
Matrix: Drinking Water
PWSID Number: HI0000331

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
2,4'-DDD	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
2,4'-DDE	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
2,4'-DDT	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
2-Methylnaphthalene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
4,4'-DDD	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
4,4'-DDE	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
4,4'-DDT	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Acenaphthene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Acenaphthylene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Acetochlor	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Alachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
alpha-BHC	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
alpha-Chlordane	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Anthracene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:34	1
Atrazine	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Benzo[a]pyrene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:34	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:34	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:34	1
beta-BHC	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		06/22/23 17:51	06/25/23 13:34	1
Bromacil	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Butachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 13:34	1
Chlorobenzilate	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Chloroneb	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Chlorpyrifos	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Chrysene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:34	1
delta-BHC	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		06/22/23 17:51	06/25/23 13:34	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Diclorvos (DDVP)	<0.049	^3+	0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Dieldrin	<0.20		0.20		ug/L		06/22/23 17:51	06/25/23 13:34	1
Diethylphthalate	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 13:34	1
Dimethylphthalate	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 13:34	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		06/22/23 17:51	06/25/23 13:34	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Endosulfan sulfate	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Endrin	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Endrin aldehyde	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
EPTC	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Fluoranthene	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 06/19/23 10:56
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-3
Matrix: Drinking Water
PWSID Number: HI0000331

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
gamma-Chlordane	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Heptachlor	<0.039		0.039		ug/L		06/22/23 17:51	06/25/23 13:34	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Isophorone	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 13:34	1
Lindane	<0.039		0.039		ug/L		06/22/23 17:51	06/25/23 13:34	1
Malathion	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Methoxychlor	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Metolachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Molinate	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Naphthalene	<0.29		0.29		ug/L		06/22/23 17:51	06/25/23 13:34	1
Parathion	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Phenanthrene	<0.039		0.039		ug/L		06/22/23 17:51	06/25/23 13:34	1
Propachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Pyrene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Simazine	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Terbacil	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Terbuthylazine	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1
Thiobencarb	<0.20		0.20		ug/L		06/22/23 17:51	06/25/23 13:34	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/22/23 17:51	06/25/23 13:34	1
trans-Nonachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:34	1
Trifluralin	<0.098		0.098		ug/L		06/22/23 17:51	06/25/23 13:34	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*06/22/23 17:51*	*06/25/23 13:34*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*102*		*70 - 130*	*06/22/23 17:51*	*06/25/23 13:34*	*1*
Perylene-d12	*99*		*70 - 130*	*06/22/23 17:51*	*06/25/23 13:34*	*1*
Triphenylphosphate	*107*		*70 - 130*	*06/22/23 17:51*	*06/25/23 13:34*	*1*

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)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 06/19/23 10:56
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-3
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*73*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C6 PFDA	*88*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C5 PFHxA	*89*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C4 PFHpA	*92*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C8 PFOA	*89*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C9 PFNA	*89*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C7 PFUnA	*86*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C2 PFDoA	*89*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C4 PFBA	*95*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C5 PFPeA	*97*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C3 PFBS	*91*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C3 PFHxS	*89*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C8 PFOS	*95*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C2-4:2-FTS	*101*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C2-6:2-FTS	*96*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*
13C2-8:2-FTS	*88*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:49*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-51797-3

Date Collected: 06/19/23 10:56

Matrix: Drinking Water

Date Received: 06/21/23 09:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 19:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*117*		*70 - 130*	*06/22/23 06:18*	*06/22/23 19:46*	*1*
13C2 PFHxA	*105*		*70 - 130*	*06/22/23 06:18*	*06/22/23 19:46*	*1*
13C2 PFDA	*112*		*70 - 130*	*06/22/23 06:18*	*06/22/23 19:46*	*1*
13C3-GenX	*100*		*70 - 130*	*06/22/23 06:18*	*06/22/23 19:46*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-51797-4

Date Collected: 06/19/23 10:29

Matrix: Drinking Water

Date Received: 06/21/23 09:20

PWSID Number: HI0000331

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
2,4'-DDD	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
2,4'-DDE	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
2,4'-DDT	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
2-Methylnaphthalene	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
4,4'-DDD	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
4,4'-DDE	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
4,4'-DDT	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Acenaphthene	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Acenaphthylene	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Acetochlor	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Alachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
alpha-BHC	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
alpha-Chlordane	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Anthracene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:54	1
Atrazine	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Benzo[a]pyrene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:54	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:54	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 06/19/23 10:29
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-4
Matrix: Drinking Water
PWSID Number: HI0000331

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:54	1
beta-BHC	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		06/22/23 17:51	06/25/23 13:54	1
Bromacil	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Butachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 13:54	1
Chlorobenzilate	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Chloroneb	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Chlorpyrifos	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Chrysene	<0.020		0.020		ug/L		06/22/23 17:51	06/25/23 13:54	1
delta-BHC	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		06/22/23 17:51	06/25/23 13:54	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Diclorvos (DDVP)	<0.049	^3+	0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Dieldrin	<0.20		0.20		ug/L		06/22/23 17:51	06/25/23 13:54	1
Diethylphthalate	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 13:54	1
Dimethylphthalate	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 13:54	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		06/22/23 17:51	06/25/23 13:54	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Endosulfan sulfate	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Endrin	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Endrin aldehyde	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
EPTC	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Fluoranthene	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Fluorene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
gamma-Chlordane	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Heptachlor	<0.040		0.040		ug/L		06/22/23 17:51	06/25/23 13:54	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Isophorone	<0.49		0.49		ug/L		06/22/23 17:51	06/25/23 13:54	1
Lindane	<0.040		0.040		ug/L		06/22/23 17:51	06/25/23 13:54	1
Malathion	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Methoxychlor	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Metolachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Molinate	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Naphthalene	<0.30		0.30		ug/L		06/22/23 17:51	06/25/23 13:54	1
Parathion	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Phenanthrene	<0.040		0.040		ug/L		06/22/23 17:51	06/25/23 13:54	1
Propachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Pyrene	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Simazine	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Terbacil	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1
Terbuthylazine	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Date Collected: 06/19/23 10:29
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-4
Matrix: Drinking Water
PWSID Number: HI0000331

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.20		0.20		ug/L		06/22/23 17:51	06/25/23 13:54	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/22/23 17:51	06/25/23 13:54	1
trans-Nonachlor	<0.049		0.049		ug/L		06/22/23 17:51	06/25/23 13:54	1
Trifluralin	<0.099		0.099		ug/L		06/22/23 17:51	06/25/23 13:54	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.60*	*T J*	*ug/L*		*14.49*	*N/A*	*06/22/23 17:51*	*06/25/23 13:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*102*		*70 - 130*	*06/22/23 17:51*	*06/25/23 13:54*	*1*
Perylene-d12	*98*		*70 - 130*	*06/22/23 17:51*	*06/25/23 13:54*	*1*
Triphenylphosphate	*109*		*70 - 130*	*06/22/23 17:51*	*06/25/23 13:54*	*1*

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)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluorohexanesulfonic acid (PFHxS)	**2.7**		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluorohexanoic acid (PFHxA)	**2.4**		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluorooctanesulfonic acid (PFOS)	**2.4**		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluorooctanoic acid (PFOA)	**2.0**		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluoropentanoic acid (PFPeA)	**3.2**		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Date Collected: 06/19/23 10:29
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-4

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 00:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*63*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C6 PFDA	*87*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C5 PFHxA	*83*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C4 PFHpA	*88*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C8 PFOA	*87*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C9 PFNA	*85*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C7 PFUnA	*84*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C2 PFDoA	*89*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C4 PFBA	*86*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C5 PFPeA	*90*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C3 PFBS	*85*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C3 PFHxS	*88*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C8 PFOS	*91*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C2-4:2-FTS	*104*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C2-6:2-FTS	*90*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*
13C2-8:2-FTS	*87*		*50 - 200*	*07/10/23 05:10*	*07/12/23 00:59*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/26/23 07:28	06/26/23 23:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*94*		*70 - 130*	*06/26/23 07:28*	*06/26/23 23:34*	*1*
13C2 PFHxA	*102*		*70 - 130*	*06/26/23 07:28*	*06/26/23 23:34*	*1*
13C2 PFDA	*109*	*^3+*	*70 - 130*	*06/26/23 07:28*	*06/26/23 23:34*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-51797-4
Date Collected: 06/19/23 10:29
Matrix: Drinking Water
Date Received: 06/21/23 09:20
PWSID Number: HI0000331

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	93		70 - 130	06/26/23 07:28	06/26/23 23:34	1

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-51797-9
Date Collected: 06/19/23 10:01
Matrix: Water
Date Received: 06/21/23 09:20

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)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:08	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	61		50 - 200	07/10/23 05:10	07/12/23 01:08	1
13C6 PFDA	83		50 - 200	07/10/23 05:10	07/12/23 01:08	1
13C5 PFHxA	80		50 - 200	07/10/23 05:10	07/12/23 01:08	1
13C4 PFHpA	85		50 - 200	07/10/23 05:10	07/12/23 01:08	1
13C8 PFOA	83		50 - 200	07/10/23 05:10	07/12/23 01:08	1

Client Sample ID: FB MOANALUA WELLS
Date Collected: 06/19/23 10:01
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-9
Matrix: Water

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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C9 PFNA	*84*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:08*	*1*
13C7 PFUnA	*82*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:08*	*1*
13C2 PFDoA	*84*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:08*	*1*
13C4 PFBA	*88*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:08*	*1*
13C5 PFPeA	*86*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:08*	*1*
13C3 PFBS	*86*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:08*	*1*
13C3 PFHxS	*85*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:08*	*1*
13C8 PFOS	*89*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:08*	*1*
13C2-4:2-FTS	*89*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:08*	*1*
13C2-6:2-FTS	*87*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:08*	*1*
13C2-8:2-FTS	*82*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:08*	*1*

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

Analyte	**Result**	**Qualifier**	**RL**	**Unit**	**D**	**Prepared**	**Analyzed**	**Dil Fac**
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/22/23 06:18	06/22/23 20:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*109*		*70 - 130*	*06/22/23 06:18*	*06/22/23 20:05*	*1*
13C2 PFHxA	*107*		*70 - 130*	*06/22/23 06:18*	*06/22/23 20:05*	*1*
13C2 PFDA	*109*		*70 - 130*	*06/22/23 06:18*	*06/22/23 20:05*	*1*
13C3-GenX	*87*		*70 - 130*	*06/22/23 06:18*	*06/22/23 20:05*	*1*

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2
Date Collected: 06/19/23 11:22
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-10
Matrix: Water

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)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*71*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*
13C6 PFDA	*87*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*
13C5 PFHxA	*91*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*
13C4 PFHpA	*94*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*
13C8 PFOA	*91*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*
13C9 PFNA	*90*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*
13C7 PFUnA	*84*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*
13C2 PFDoA	*88*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*
13C4 PFBA	*96*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*
13C5 PFPeA	*94*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*
13C3 PFBS	*87*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*
13C3 PFHxS	*88*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*
13C8 PFOS	*92*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:18*	*1*

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-51797-10

Date Collected: 06/19/23 11:22

Matrix: Water

Date Received: 06/21/23 09:20

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	88		50 - 200	07/10/23 05:10	07/12/23 01:18	1
13C2-6:2-FTS	90		50 - 200	07/10/23 05:10	07/12/23 01:18	1
13C2-8:2-FTS	87		50 - 200	07/10/23 05:10	07/12/23 01:18	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	113		70 - 130	06/22/23 06:18	06/22/23 20:15	1
13C2 PFHxA	115		70 - 130	06/22/23 06:18	06/22/23 20:15	1
13C2 PFDA	115		70 - 130	06/22/23 06:18	06/22/23 20:15	1
13C3-GenX	104		70 - 130	06/22/23 06:18	06/22/23 20:15	1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-51797-11

Date Collected: 06/19/23 10:56

Matrix: Water

Date Received: 06/21/23 09:20

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)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 06/19/23 10:56
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-11
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*68*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C6 PFDA	*88*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C5 PFHxA	*90*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C4 PFHpA	*91*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C8 PFOA	*93*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C9 PFNA	*88*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C7 PFUnA	*87*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C2 PFDoA	*88*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C4 PFBA	*98*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C5 PFPeA	*100*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C3 PFBS	*94*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C3 PFHxS	*94*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C8 PFOS	*96*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C2-4:2-FTS	*98*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C2-6:2-FTS	*98*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*
13C2-8:2-FTS	*89*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:27*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-51797-11

Date Collected: 06/19/23 10:56

Matrix: Water

Date Received: 06/21/23 09:20

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*112*		*70 - 130*	*06/22/23 06:18*	*06/22/23 20:25*	*1*
13C2 PFHxA	*106*		*70 - 130*	*06/22/23 06:18*	*06/22/23 20:25*	*1*
13C2 PFDA	*111*		*70 - 130*	*06/22/23 06:18*	*06/22/23 20:25*	*1*
13C3-GenX	*94*		*70 - 130*	*06/22/23 06:18*	*06/22/23 20:25*	*1*

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-51797-12

Date Collected: 06/19/23 10:29

Matrix: Water

Date Received: 06/21/23 09:20

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)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 06/19/23 10:29
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-12
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		07/10/23 05:10	07/12/23 01:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*66*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C6 PFDA	*92*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C5 PFHxA	*90*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C4 PFHpA	*92*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C8 PFOA	*90*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C9 PFNA	*91*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C7 PFUnA	*91*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C2 PFDoA	*93*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C4 PFBA	*91*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C5 PFPeA	*95*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C3 PFBS	*93*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C3 PFHxS	*87*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C8 PFOS	*96*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C2-4:2-FTS	*92*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C2-6:2-FTS	*86*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*
13C2-8:2-FTS	*89*		*50 - 200*	*07/10/23 05:10*	*07/12/23 01:37*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 06/19/23 10:29
Date Received: 06/21/23 09:20

Lab Sample ID: 380-51797-12
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/22/23 06:18	06/22/23 20:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*98*		*70 - 130*	*06/22/23 06:18*	*06/22/23 20:34*	*1*
13C2 PFHxA	*99*		*70 - 130*	*06/22/23 06:18*	*06/22/23 20:34*	*1*
13C2 PFDA	*106*		*70 - 130*	*06/22/23 06:18*	*06/22/23 20:34*	*1*
13C3-GenX	*90*		*70 - 130*	*06/22/23 06:18*	*06/22/23 20:34*	*1*

Action Limit Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Client Sample ID: MOANALUA WELLS
Lab Sample ID: 380-51797-1

PWSID Number: HI0000331

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400	0.59	525.2	Total/NA
Endrin	<0.098		ug/L	2	0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40	0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-51797-2

PWSID Number: HI0000331

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400	0.59	525.2	Total/NA
Endrin	<0.098		ug/L	2	0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40	0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-51797-3

PWSID Number: HI0000331

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 (Continued)

Lab Sample ID: 380-51797-3

PWSID Number: HI0000331

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400	0.59	525.2	Total/NA
Endrin	<0.098		ug/L	2	0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40	0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-51797-4

PWSID Number: HI0000331

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400	0.59	525.2	Total/NA
Endrin	<0.099		ug/L	2	0.099	525.2	Total/NA
Heptachlor	<0.040		ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.040		ug/L	0.2	0.040	525.2	Total/NA
Methoxychlor	<0.099		ug/L	40	0.099	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Surrogate Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-51797-1	MOANALUA WELLS	101	96	114
380-51797-2	AIEA GULCH WELLS PUMP 2	104	98	109
380-51797-3	AIEA WELLS PUMPS 1&2 (260) P2	102	99	107
380-51797-4	HALAWA WELLS UNITS 1 & 2 P1	102	98	109

Surrogate Legend

2NMX = 2-Nitro-m-xylene
PRY = Perylene-d12
TPP = Triphenylphosphate

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-51679-B-1-A MS	Matrix Spike	100	93	109
380-51755-K-1-A DU	Duplicate	95	90	104
LCS 380-44953/23-A	Lab Control Sample	100	90	108
LCSD 380-44953/24-A	Lab Control Sample Dup	101	93	111
MB 380-44953/21-A	Method Blank	101	80	108
MRL 380-44953/22-A	Lab Control Sample	101	86	103

Surrogate Legend

2NMX = 2-Nitro-m-xylene
PRY = Perylene-d12
TPP = Triphenylphosphate

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-51797-1	MOANALUA WELLS	114	101	105	94
380-51797-1 MS	MOANALUA WELLS	114	102	109	93
380-51797-1 MSD	MOANALUA WELLS	103	101	112	90
380-51797-2	AIEA GULCH WELLS PUMP 2	110	104	110	96
380-51797-3	AIEA WELLS PUMPS 1&2 (260) P2	117	105	112	100
380-51797-4	HALAWA WELLS UNITS 1 & 2 P1	94	102	109 ^3+	93

Surrogate Legend

d5NEFOS = d5-NEtFOSAA
PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
GenX = 13C3-GenX

Surrogate Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-51797-9	FB MOANALUA WELLS	109	107	109	87
380-51797-10	FB AIEA GULCH WELLS PUMP 2	113	115	115	104
380-51797-11	FB AIEA WELLS PUMPS 1&2 (260) P2	112	106	111	94
380-51797-12	FB HALAWA WELLS UNITS 1 & 2 P1	98	99	106	90
380-51952-E-1-A MS	Matrix Spike	105	119	121	110
380-51952-F-1-A MSD	Matrix Spike Duplicate	106	116	116	102
LCS 380-44996/25-A	Lab Control Sample	107	104	106	98
LCS 380-45392/25-A	Lab Control Sample	108	113	125	101
LCSD 380-44996/26-A	Lab Control Sample Dup	115	109	111	99
MBL 380-44996/23-A	Method Blank	117	104	112	92
MBL 380-45392/23-A	Method Blank	108	114	121	102
MRL 380-44996/24-A	Lab Control Sample	110	102	103	91
MRL 380-45392/24-A	Lab Control Sample	113	118	133 ^3+	109

Surrogate Legend

d5NEFOS = d5-NEtFOSAA
PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
GenX = 13C3-GenX

Isotope Dilution Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

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	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-51797-1	MOANALUA WELLS	62	83	85	85	88	88	85	93
380-51797-2	AIEA GULCH WELLS PUMP 2	57	78	79	79	84	84	80	90
380-51797-3	AIEA WELLS PUMPS 1&2 (260) P2	73	88	89	92	89	89	86	89
380-51797-4	HALAWA WELLS UNITS 1 & 2 P1	63	87	83	88	87	85	84	89

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-51797-1	MOANALUA WELLS	81	78	94	91	94	92	94	94
380-51797-2	AIEA GULCH WELLS PUMP 2	75	69	96	94	94	91	99	89
380-51797-3	AIEA WELLS PUMPS 1&2 (260) P2	95	97	91	89	95	101	96	88
380-51797-4	HALAWA WELLS UNITS 1 & 2 P1	86	90	85	88	91	104	90	87

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-51629-B-1-A MS	Matrix Spike	68	87	83	84	87	88	88	95
380-51629-C-1-A MSD	Matrix Spike Duplicate	52	77	63	67	72	74	80	90
380-51797-9	FB MOANALUA WELLS	61	83	80	85	83	84	82	84
380-51797-10	FB AIEA GULCH WELLS PUMP 2	71	87	91	94	91	90	84	88
380-51797-11	FB AIEA WELLS PUMPS 1&2 (260) P2	68	88	90	91	93	88	87	88
380-51797-12	FB HALAWA WELLS UNITS 1 & 2 P1	66	92	90	92	90	91	91	93
LCS 380-46697/23-A	Lab Control Sample	54	85	75	79	82	84	85	89
LCS 380-46700/23-A	Lab Control Sample	71	89	86	86	94	93	88	97
LCSD 380-46697/24-A	Lab Control Sample Dup	68	88	89	88	90	90	89	94

Isotope Dilution Summary

Client: City & County of Honolulu
Job ID: 380-51797-1
Project/Site: RED-HILL

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

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
LCSD 380-46700/24-A	Lab Control Sample Dup	54	84	70	74	79	81	85	94
MBL 380-46697/21-A	Method Blank	60	93	81	88	90	89	89	91
MBL 380-46700/21-A	Method Blank	59	90	78	80	86	86	89	101
MRL 380-46697/22-A	Lab Control Sample	60	88	83	87	87	84	85	90
MRL 380-46700/22-A	Lab Control Sample	56	80	72	75	81	79	83	92

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-51629-B-1-A MS	Matrix Spike	82	82	95	96	97	90	99	95
380-51629-C-1-A MSD	Matrix Spike Duplicate	60	59	96	95	98	91	100	95
380-51797-9	FB MOANALUA WELLS	88	86	86	85	89	89	87	82
380-51797-10	FB AIEA GULCH WELLS PUMP 2	96	94	87	88	92	88	90	87
380-51797-11	FB AIEA WELLS PUMPS 1&2 (260) P2	98	100	94	94	96	98	98	89
380-51797-12	FB HALAWA WELLS UNITS 1 & 2 P1	91	95	93	87	96	92	86	89
LCS 380-46697/23-A	Lab Control Sample	75	75	95	92	95	99	94	86
LCS 380-46700/23-A	Lab Control Sample	85	85	95	94	98	94	106	98
LCSD 380-46697/24-A	Lab Control Sample Dup	98	96	96	93	97	94	93	88
LCSD 380-46700/24-A	Lab Control Sample Dup	65	65	95	95	99	95	101	97
MBL 380-46697/21-A	Method Blank	83	84	99	98	100	102	96	92
MBL 380-46700/21-A	Method Blank	76	75	98	97	99	103	112	135
MRL 380-46697/22-A	Lab Control Sample	91	88	94	92	96	97	93	90
MRL 380-46700/22-A	Lab Control Sample	71	69	95	94	98	96	102	95

Surrogate Legend

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

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 380-44953/21-A
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 44953

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
2,4'-DDD	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
2,4'-DDE	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
2,4'-DDT	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
2-Methylnaphthalene	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
4,4'-DDD	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
4,4'-DDE	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
4,4'-DDT	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Acenaphthene	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Acenaphthylene	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Acetochlor	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Alachlor	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
alpha-BHC	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
alpha-Chlordane	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Anthracene	<0.020		0.020		ug/L		06/22/23 14:30	06/25/23 10:33	1
Atrazine	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Benzo[a]pyrene	<0.020		0.020		ug/L		06/22/23 14:30	06/25/23 10:33	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		06/22/23 14:30	06/25/23 10:33	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		06/22/23 14:30	06/25/23 10:33	1
beta-BHC	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		06/22/23 14:30	06/25/23 10:33	1
Bromacil	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Butachlor	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/22/23 14:30	06/25/23 10:33	1
Chlorobenzilate	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Chloroneb	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Chlorpyrifos	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Chrysene	<0.020		0.020		ug/L		06/22/23 14:30	06/25/23 10:33	1
delta-BHC	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		06/22/23 14:30	06/25/23 10:33	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Dieldrin	<0.20		0.20		ug/L		06/22/23 14:30	06/25/23 10:33	1
Diethylphthalate	<0.49		0.49		ug/L		06/22/23 14:30	06/25/23 10:33	1
Dimethylphthalate	<0.49		0.49		ug/L		06/22/23 14:30	06/25/23 10:33	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		06/22/23 14:30	06/25/23 10:33	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Endosulfan sulfate	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Endrin	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Endrin aldehyde	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
EPTC	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 380-44953/21-A
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 44953

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Fluorene	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
gamma-Chlordane	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Heptachlor	<0.039		0.039		ug/L		06/22/23 14:30	06/25/23 10:33	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Isophorone	<0.49		0.49		ug/L		06/22/23 14:30	06/25/23 10:33	1
Lindane	<0.039		0.039		ug/L		06/22/23 14:30	06/25/23 10:33	1
Malathion	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Methoxychlor	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Metolachlor	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Molinate	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Naphthalene	<0.29		0.29		ug/L		06/22/23 14:30	06/25/23 10:33	1
Parathion	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Phenanthrene	<0.039		0.039		ug/L		06/22/23 14:30	06/25/23 10:33	1
Propachlor	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Pyrene	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Simazine	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Terbacil	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Terbuthylazine	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1
Thiobencarb	<0.20		0.20		ug/L		06/22/23 14:30	06/25/23 10:33	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/22/23 14:30	06/25/23 10:33	1
trans-Nonachlor	<0.049		0.049		ug/L		06/22/23 14:30	06/25/23 10:33	1
Trifluralin	<0.098		0.098		ug/L		06/22/23 14:30	06/25/23 10:33	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unkown	*1.43*	*T J*	*ug/L*		*5.87*	*N/A*	*06/22/23 14:30*	*06/25/23 10:33*	*1*
Oleic Acid	*0.495*	*T J N*	*ug/L*		*6.49*	*112-80-1*	*06/22/23 14:30*	*06/25/23 10:33*	*1*
Octadecanoic acid	*0.787*	*T J N*	*ug/L*		*6.56*	*57-11-4*	*06/22/23 14:30*	*06/25/23 10:33*	*1*
9-Octadecenamide, (Z)-	*2.35*	*T J N*	*ug/L*		*7.57*	*301-02-0*	*06/22/23 14:30*	*06/25/23 10:33*	*1*
13-Docosenamide, (Z)-	*1.32*	*T J N*	*ug/L*		*10.24*	*112-84-5*	*06/22/23 14:30*	*06/25/23 10:33*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*101*		*70 - 130*	*06/22/23 14:30*	*06/25/23 10:33*	*1*
Perylene-d12	*80*		*70 - 130*	*06/22/23 14:30*	*06/25/23 10:33*	*1*
Triphenylphosphate	*108*		*70 - 130*	*06/22/23 14:30*	*06/25/23 10:33*	*1*

Lab Sample ID: LCS 380-44953/23-A
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 44953

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.97	2.04		ug/L		104	70 - 130
2,4'-DDD	1.97	2.12		ug/L		108	70 - 130
2,4'-DDE	1.97	2.11		ug/L		107	70 - 130

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 380-44953/23-A
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 44953

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDT	1.97	2.10		ug/L		107	70 - 130
2,4-Dinitrotoluene	1.97	1.58		ug/L		80	70 - 130
2,6-Dinitrotoluene	1.97	1.66		ug/L		84	70 - 130
2-Methylnaphthalene	1.97	2.05		ug/L		104	70 - 130
4,4'-DDD	1.97	2.09		ug/L		106	70 - 130
4,4'-DDE	1.97	2.14		ug/L		109	70 - 130
4,4'-DDT	1.97	1.96		ug/L		100	70 - 130
Acenaphthene	1.97	2.04		ug/L		104	70 - 130
Acenaphthylene	1.97	1.85		ug/L		94	70 - 130
Acetochlor	1.97	2.17		ug/L		110	70 - 130
Alachlor	1.97	2.17		ug/L		110	70 - 130
alpha-BHC	1.97	2.15		ug/L		109	70 - 130
alpha-Chlordane	1.97	2.09		ug/L		106	70 - 130
Anthracene	1.97	1.84		ug/L		93	70 - 130
Atrazine	1.97	2.11		ug/L		107	70 - 130
Benz(a)anthracene	1.97	1.96		ug/L		100	70 - 130
Benzo[a]pyrene	1.97	2.03		ug/L		103	70 - 130
Benzo[b]fluoranthene	1.97	2.24		ug/L		114	70 - 130
Benzo[g,h,i]perylene	1.97	2.44		ug/L		124	70 - 130
Benzo[k]fluoranthene	1.97	2.24		ug/L		114	70 - 130
beta-BHC	1.97	2.12		ug/L		108	70 - 130
Bis(2-ethylhexyl) phthalate	1.97	2.45		ug/L		124	70 - 130
Bromacil	1.97	2.03		ug/L		103	70 - 130
Butachlor	1.97	2.43		ug/L		124	70 - 130
Butylbenzylphthalate	1.97	2.30		ug/L		117	70 - 130
Chlorobenzilate	1.97	2.23		ug/L		113	70 - 130
Chloroneb	1.97	2.14		ug/L		109	70 - 130
Chlorothalonil (Draconil, Bravo)	1.97	1.87		ug/L		95	70 - 130
Chlorpyrifos	1.97	2.24		ug/L		114	70 - 130
Chrysene	1.97	2.09		ug/L		106	70 - 130
delta-BHC	1.97	1.96		ug/L		100	70 - 130
Di(2-ethylhexyl)adipate	1.97	2.42		ug/L		123	70 - 130
Dibenz(a,h)anthracene	1.97	2.24		ug/L		114	70 - 130
Diclorvos (DDVP)	1.97	1.89		ug/L		96	70 - 130
Dieldrin	1.97	2.04		ug/L		104	70 - 130
Diethylphthalate	1.97	2.24		ug/L		114	70 - 130
Dimethylphthalate	1.97	2.17		ug/L		110	70 - 130
Di-n-butyl phthalate	3.94	4.49		ug/L		114	70 - 130
Di-n-octyl phthalate	1.97	2.11		ug/L		107	70 - 130
Endosulfan I (Alpha)	1.97	1.99		ug/L		101	70 - 130
Endosulfan II (Beta)	1.97	2.17		ug/L		110	70 - 130
Endosulfan sulfate	1.97	2.05		ug/L		104	70 - 130
Endrin	1.97	2.23		ug/L		113	70 - 130
Endrin aldehyde	1.97	1.93		ug/L		98	70 - 130
EPTC	1.97	2.09		ug/L		106	70 - 130
Fluoranthene	1.97	2.10		ug/L		107	70 - 130
Fluorene	1.97	2.13		ug/L		108	70 - 130
gamma-Chlordane	1.97	2.07		ug/L		105	70 - 130
Heptachlor	1.97	2.11		ug/L		107	70 - 130

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 380-44953/23-A
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 44953

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Heptachlor epoxide (isomer B)			1.97	2.12		ug/L		108	70 - 130		
Hexachlorobenzene			1.97	2.03		ug/L		103	70 - 130		
Hexachlorocyclopentadiene			1.97	1.85		ug/L		94	70 - 130		
Indeno[1,2,3-cd]pyrene			1.97	2.40		ug/L		122	70 - 130		
Isophorone			1.97	2.02		ug/L		103	70 - 130		
Lindane			1.97	2.10		ug/L		107	70 - 130		
Malathion			1.97	2.21		ug/L		112	70 - 130		
Methoxychlor			1.97	2.12		ug/L		108	70 - 130		
Metolachlor			1.97	2.24		ug/L		114	70 - 130		
Molinate			1.97	2.14		ug/L		109	70 - 130		
Naphthalene			1.97	1.98		ug/L		100	70 - 130		
Parathion			1.97	1.98		ug/L		101	70 - 130		
Pendimethalin (Penoxaline)			1.97	1.93		ug/L		98	70 - 130		
Phenanthrene			1.97	1.98		ug/L		101	70 - 130		
Propachlor			1.97	2.19		ug/L		111	70 - 130		
Pyrene			1.97	2.12		ug/L		108	70 - 130		
Simazine			1.97	2.08		ug/L		106	70 - 130		
Terbacil			1.97	2.07		ug/L		105	70 - 130		
Terbuthylazine			1.97	2.25		ug/L		114	70 - 130		
Thiobencarb			1.97	2.21		ug/L		112	70 - 130		
trans-Nonachlor			1.97	2.10		ug/L		106	70 - 130		
Trifluralin			1.97	1.97		ug/L		100	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*100*		*70 - 130*
Perylene-d12	*90*		*70 - 130*
Triphenylphosphate	*108*		*70 - 130*

Lab Sample ID: LCSD 380-44953/24-A
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 44953

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			1.96	2.06		ug/L		105	70 - 130	1	20
2,4'-DDD			1.96	2.10		ug/L		107	70 - 130	1	20
2,4'-DDE			1.96	2.09		ug/L		106	70 - 130	1	20
2,4'-DDT			1.96	2.12		ug/L		108	70 - 130	1	20
2,4-Dinitrotoluene			1.96	1.86		ug/L		95	70 - 130	16	20
2,6-Dinitrotoluene			1.96	1.89		ug/L		96	70 - 130	13	20
2-Methylnaphthalene			1.96	2.09		ug/L		107	70 - 130	2	20
4,4'-DDD			1.96	2.10		ug/L		107	70 - 130	0	20
4,4'-DDE			1.96	2.11		ug/L		108	70 - 130	1	20
4,4'-DDT			1.96	2.03		ug/L		103	70 - 130	3	20
Acenaphthene			1.96	2.03		ug/L		104	70 - 130	0	20
Acenaphthylene			1.96	1.98		ug/L		101	70 - 130	7	20
Acetochlor			1.96	2.21		ug/L		112	70 - 130	2	20
Alachlor			1.96	2.18		ug/L		111	70 - 130	0	20
alpha-BHC			1.96	2.17		ug/L		111	70 - 130	1	20

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 380-44953/24-A
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 44953

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-Chlordane			1.96	2.09		ug/L		107	70 - 130	0	20
Anthracene			1.96	1.91		ug/L		98	70 - 130	4	20
Atrazine			1.96	2.15		ug/L		110	70 - 130	2	20
Benz(a)anthracene			1.96	2.06		ug/L		105	70 - 130	5	20
Benzo[a]pyrene			1.96	2.13		ug/L		108	70 - 130	4	20
Benzo[b]fluoranthene			1.96	2.25		ug/L		115	70 - 130	1	20
Benzo[g,h,i]perylene			1.96	2.43		ug/L		124	70 - 130	0	20
Benzo[k]fluoranthene			1.96	2.11		ug/L		108	70 - 130	6	20
beta-BHC			1.96	2.13		ug/L		109	70 - 130	1	20
Bis(2-ethylhexyl) phthalate			1.96	2.30		ug/L		117	70 - 130	6	20
Bromacil			1.96	2.21		ug/L		113	70 - 130	8	20
Butachlor			1.96	2.45		ug/L		125	70 - 130	1	20
Butylbenzylphthalate			1.96	2.37		ug/L		121	70 - 130	3	20
Chlorobenzilate			1.96	2.02		ug/L		103	70 - 130	10	20
Chloroneb			1.96	2.09		ug/L		107	70 - 130	2	20
Chlorothalonil (Draconil, Bravo)			1.96	1.82		ug/L		93	70 - 130	3	20
Chlorpyrifos			1.96	2.27		ug/L		116	70 - 130	1	20
Chrysene			1.96	2.09		ug/L		106	70 - 130	0	20
delta-BHC			1.96	1.98		ug/L		101	70 - 130	1	20
Di(2-ethylhexyl)adipate			1.96	2.43		ug/L		124	70 - 130	0	20
Dibenz(a,h)anthracene			1.96	2.13		ug/L		109	70 - 130	5	20
Diclorvos (DDVP)			1.96	2.08		ug/L		106	70 - 130	10	20
Dieldrin			1.96	2.03		ug/L		103	70 - 130	0	20
Diethylphthalate			1.96	2.23		ug/L		113	70 - 130	0	20
Dimethylphthalate			1.96	2.18		ug/L		111	70 - 130	0	20
Di-n-butyl phthalate			3.93	4.25		ug/L		108	70 - 130	5	20
Di-n-octyl phthalate			1.96	2.03		ug/L		104	70 - 130	4	20
Endosulfan I (Alpha)			1.96	2.04		ug/L		104	70 - 130	3	20
Endosulfan II (Beta)			1.96	2.17		ug/L		111	70 - 130	0	20
Endosulfan sulfate			1.96	2.11		ug/L		107	70 - 130	3	20
Endrin			1.96	2.19		ug/L		112	70 - 130	2	20
Endrin aldehyde			1.96	1.74		ug/L		88	70 - 130	11	20
EPTC			1.96	2.11		ug/L		107	70 - 130	1	20
Fluoranthene			1.96	2.15		ug/L		110	70 - 130	3	20
Fluorene			1.96	2.13		ug/L		109	70 - 130	0	20
gamma-Chlordane			1.96	2.06		ug/L		105	70 - 130	0	20
Heptachlor			1.96	2.09		ug/L		107	70 - 130	1	20
Heptachlor epoxide (isomer B)			1.96	2.16		ug/L		110	70 - 130	2	20
Hexachlorobenzene			1.96	2.04		ug/L		104	70 - 130	1	20
Hexachlorocyclopentadiene			1.96	1.97		ug/L		100	70 - 130	6	20
Indeno[1,2,3-cd]pyrene			1.96	2.38		ug/L		121	70 - 130	1	20
Isophorone			1.96	2.04		ug/L		104	70 - 130	1	20
Lindane			1.96	2.09		ug/L		107	70 - 130	0	20
Malathion			1.96	2.23		ug/L		114	70 - 130	1	20
Methoxychlor			1.96	2.16		ug/L		110	70 - 130	2	20
Metolachlor			1.96	2.26		ug/L		115	70 - 130	1	20
Molinate			1.96	2.12		ug/L		108	70 - 130	1	20
Naphthalene			1.96	1.98		ug/L		101	70 - 130	0	20
Parathion			1.96	2.08		ug/L		106	70 - 130	5	20

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 380-44953/24-A
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 44953

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pendimethalin (Penoxaline)	1.96	2.04		ug/L		104	70 - 130	6	20
Phenanthrene	1.96	1.97		ug/L		100	70 - 130	1	20
Propachlor	1.96	2.20		ug/L		112	70 - 130	1	20
Pyrene	1.96	2.17		ug/L		110	70 - 130	2	20
Simazine	1.96	2.14		ug/L		109	70 - 130	3	20
Terbacil	1.96	2.28		ug/L		116	70 - 130	10	20
Terbuthylazine	1.96	2.28		ug/L		116	70 - 130	1	20
Thiobencarb	1.96	2.24		ug/L		114	70 - 130	1	20
trans-Nonachlor	1.96	2.07		ug/L		106	70 - 130	1	20
Trifluralin	1.96	2.03		ug/L		103	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Nitro-m-xylene	*101*		*70 - 130*
Perylene-d12	*93*		*70 - 130*
Triphenylphosphate	*111*		*70 - 130*

Lab Sample ID: MRL 380-44953/22-A
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 44953

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0982	0.121		ug/L		123	50 - 150
2,4'-DDD	0.0982	0.128		ug/L		130	50 - 150
2,4'-DDE	0.0982	0.105		ug/L		107	50 - 150
2,4'-DDT	0.0982	0.0862	J	ug/L		88	50 - 150
2,4-Dinitrotoluene	0.0982	0.0872	J	ug/L		89	50 - 150
2,6-Dinitrotoluene	0.0982	0.0890	J	ug/L		91	50 - 150
2-Methylnaphthalene	0.0982	0.107		ug/L		109	50 - 150
4,4'-DDD	0.0982	0.120		ug/L		122	50 - 150
4,4'-DDE	0.0982	0.0917	J	ug/L		93	50 - 150
4,4'-DDT	0.0982	0.109		ug/L		111	50 - 150
Acenaphthene	0.0982	0.103		ug/L		105	50 - 150
Acenaphthylene	0.0982	0.0865	J	ug/L		88	50 - 150
Acetochlor	0.0491	0.0544	J	ug/L		111	50 - 150
Alachlor	0.0491	0.0502		ug/L		102	50 - 150
alpha-BHC	0.0982	0.108		ug/L		110	50 - 150
alpha-Chlordane	0.0246	<0.028		ug/L		99	50 - 150
Anthracene	0.0196	0.0192	J	ug/L		98	50 - 150
Atrazine	0.0491	0.0532		ug/L		108	50 - 150
Benz(a)anthracene	0.0491	0.0517		ug/L		105	50 - 150
Benzo[a]pyrene	0.0196	0.0175	J	ug/L		89	50 - 150
Benzo[b]fluoranthene	0.0196	0.0237		ug/L		121	50 - 150
Benzo[g,h,i]perylene	0.0491	0.0502		ug/L		102	50 - 150
Benzo[k]fluoranthene	0.0196	0.0205		ug/L		105	50 - 150
beta-BHC	0.0982	0.0966	J	ug/L		98	50 - 150
Bis(2-ethylhexyl) phthalate	0.589	0.825		ug/L		140	50 - 150
Bromacil	0.0982	0.125		ug/L		127	50 - 150
Butachlor	0.0491	0.0568		ug/L		116	50 - 150

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MRL 380-44953/22-A
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 44953

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Butylbenzylphthalate	0.147	0.157	J	ug/L		106	50 - 150
Chlorobenzilate	0.0982	0.133		ug/L		135	50 - 150
Chloroneb	0.0982	0.0964	J	ug/L		98	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0982	0.109		ug/L		111	50 - 150
Chlorpyrifos	0.0491	0.0558		ug/L		114	50 - 150
Chrysene	0.0196	0.0215		ug/L		109	50 - 150
delta-BHC	0.0982	0.103		ug/L		105	50 - 150
Di(2-ethylhexyl)adipate	0.295	0.342	J	ug/L		116	50 - 150
Dibenz(a,h)anthracene	0.0491	0.0635		ug/L		129	50 - 150
Diclorvos (DDVP)	0.0491	0.0766	^3+	ug/L		156	50 - 150
Dieldrin	0.0982	0.0988	J	ug/L		101	50 - 150
Diethylphthalate	0.147	0.179	J	ug/L		121	50 - 150
Dimethylphthalate	0.295	0.307	J	ug/L		104	50 - 150
Di-n-butyl phthalate	0.295	0.381	J	ug/L		129	49 - 243
Di-n-octyl phthalate	0.0982	0.118		ug/L		120	50 - 150
Endosulfan I (Alpha)	0.0982	0.0832	J	ug/L		85	50 - 150
Endosulfan II (Beta)	0.0982	0.106		ug/L		108	50 - 150
Endosulfan sulfate	0.0982	0.108		ug/L		110	50 - 150
Endrin	0.0982	0.117		ug/L		119	50 - 150
Endrin aldehyde	0.0982	0.108		ug/L		110	50 - 150
EPTC	0.0982	0.100		ug/L		102	50 - 150
Fluoranthene	0.0491	0.0510	J	ug/L		104	50 - 150
Fluorene	0.0491	0.0522		ug/L		106	50 - 150
gamma-Chlordane	0.0246	0.0241	J	ug/L		98	50 - 150
Heptachlor	0.0393	0.0408		ug/L		104	50 - 150
Heptachlor epoxide (isomer B)	0.0491	0.0510		ug/L		104	50 - 150
Hexachlorobenzene	0.0491	0.0509		ug/L		104	50 - 150
Hexachlorocyclopentadiene	0.0491	0.0388	J	ug/L		79	50 - 150
Indeno[1,2,3-cd]pyrene	0.0491	0.0513		ug/L		104	50 - 150
Isophorone	0.0982	0.113	J	ug/L		116	50 - 150
Lindane	0.0393	0.0481		ug/L		122	50 - 150
Malathion	0.0982	0.117		ug/L		119	50 - 150
Methoxychlor	0.0982	0.102		ug/L		104	50 - 150
Metolachlor	0.0491	0.0577		ug/L		118	50 - 150
Molinate	0.0982	0.108		ug/L		110	50 - 150
Naphthalene	0.0982	0.108	J	ug/L		110	50 - 150
Parathion	0.0982	0.0982		ug/L		100	50 - 150
Pendimethalin (Penoxaline)	0.0982	0.103		ug/L		105	50 - 150
Phenanthrene	0.0196	0.0241	J	ug/L		123	50 - 150
Propachlor	0.0491	0.0504		ug/L		103	50 - 150
Pyrene	0.0491	0.0519		ug/L		106	50 - 150
Simazine	0.0491	0.0554		ug/L		113	50 - 150
Terbacil	0.0982	0.106		ug/L		108	50 - 150
Terbuthylazine	0.0982	0.103		ug/L		105	50 - 150
Thiobencarb	0.0982	0.108	J	ug/L		110	50 - 150
trans-Nonachlor	0.0246	0.0262	J	ug/L		107	50 - 150
Trifluralin	0.0982	0.101		ug/L		102	50 - 150

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MRL 380-44953/22-A
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 44953

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	*101*		*70 - 130*
Perylene-d12	*86*		*70 - 130*
Triphenylphosphate	*103*		*70 - 130*

Lab Sample ID: 380-51679-B-1-A MS
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 44953

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.097		1.95	2.03		ug/L		104	70 - 130
2,4'-DDD	<0.097		1.95	2.05		ug/L		105	70 - 130
2,4'-DDE	<0.097		1.95	2.06		ug/L		106	70 - 130
2,4'-DDT	<0.097		1.95	2.10		ug/L		108	70 - 130
2,4-Dinitrotoluene	<0.097		1.95	1.87		ug/L		96	70 - 130
2,6-Dinitrotoluene	<0.097		1.95	1.86		ug/L		95	70 - 130
2-Methylnaphthalene	<0.097		1.95	2.07		ug/L		106	70 - 130
4,4'-DDD	<0.097		1.95	2.08		ug/L		106	70 - 130
4,4'-DDE	<0.097		1.95	2.07		ug/L		106	70 - 130
4,4'-DDT	<0.097		1.95	2.00		ug/L		103	70 - 130
Acenaphthene	<0.097		1.95	2.00		ug/L		103	70 - 130
Acenaphthylene	<0.097		1.95	1.99		ug/L		102	70 - 130
Acetochlor	<0.097		1.95	2.19		ug/L		112	70 - 130
Alachlor	<0.049		1.95	2.18		ug/L		112	70 - 130
alpha-BHC	<0.097		1.95	2.13		ug/L		109	70 - 130
alpha-Chlordane	<0.049		1.95	2.06		ug/L		106	70 - 130
Anthracene	<0.019		1.95	1.92		ug/L		98	70 - 130
Atrazine	<0.049		1.95	2.13		ug/L		109	70 - 130
Benz(a)anthracene	<0.049		1.95	2.03		ug/L		104	70 - 130
Benzo[a]pyrene	<0.019		1.95	2.08		ug/L		107	70 - 130
Benzo[b]fluoranthene	<0.019		1.95	2.23		ug/L		114	70 - 130
Benzo[g,h,i]perylene	<0.049		1.95	2.34		ug/L		120	70 - 130
Benzo[k]fluoranthene	<0.019		1.95	2.23		ug/L		114	70 - 130
beta-BHC	<0.097		1.95	2.17		ug/L		112	70 - 130
Bis(2-ethylhexyl) phthalate	<0.58		1.95	2.32		ug/L		119	70 - 130
Bromacil	<0.097		1.95	2.18		ug/L		112	70 - 130
Butachlor	<0.049		1.95	2.39		ug/L		123	70 - 130
Butylbenzylphthalate	<0.49		1.95	2.30		ug/L		118	70 - 130
Chlorobenzilate	<0.097		1.95	2.00		ug/L		102	70 - 130
Chloroneb	<0.097		1.95	2.06		ug/L		105	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.097		1.95	1.88		ug/L		97	70 - 130
Chlorpyrifos	<0.049		1.95	2.23		ug/L		115	70 - 130
Chrysene	<0.019		1.95	2.06		ug/L		106	70 - 130
delta-BHC	<0.097		1.95	1.99		ug/L		102	70 - 130
Di(2-ethylhexyl)adipate	<0.58		1.95	2.38		ug/L		122	70 - 130
Dibenz(a,h)anthracene	<0.049		1.95	2.13		ug/L		109	70 - 130
Diclorvos (DDVP)	<0.049	^3+	1.95	2.01		ug/L		103	70 - 130
Dieldrin	<0.19		1.95	1.96		ug/L		100	70 - 130
Diethylphthalate	<0.49		1.95	2.23		ug/L		114	70 - 130

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 380-51679-B-1-A MS
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 44953

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Dimethylphthalate	<0.49		1.95	2.17		ug/L		112	70 - 130
Di-n-butyl phthalate	<0.97		3.90	4.22		ug/L		108	70 - 130
Di-n-octyl phthalate	<0.097		1.95	2.08		ug/L		106	70 - 130
Endosulfan I (Alpha)	<0.097		1.95	1.98		ug/L		102	70 - 130
Endosulfan II (Beta)	<0.097		1.95	2.22		ug/L		114	70 - 130
Endosulfan sulfate	<0.097		1.95	2.08		ug/L		107	70 - 130
Endrin	<0.097		1.95	2.19		ug/L		112	70 - 130
Endrin aldehyde	<0.097		1.95	1.66		ug/L		85	70 - 130
EPTC	<0.097		1.95	2.03		ug/L		104	70 - 130
Fluoranthene	<0.097		1.95	2.13		ug/L		109	70 - 130
Fluorene	<0.049		1.95	2.09		ug/L		107	70 - 130
gamma-Chlordane	<0.049		1.95	2.04		ug/L		105	70 - 130
Heptachlor	<0.039		1.95	2.05		ug/L		105	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.95	2.14		ug/L		110	70 - 130
Hexachlorobenzene	<0.049		1.95	2.00		ug/L		103	70 - 130
Hexachlorocyclopentadiene	<0.049		1.95	1.95		ug/L		100	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.95	2.32		ug/L		119	70 - 130
Isophorone	<0.49		1.95	2.01		ug/L		103	70 - 130
Lindane	<0.039		1.95	2.11		ug/L		108	70 - 130
Malathion	<0.097		1.95	2.18		ug/L		112	70 - 130
Methoxychlor	<0.097		1.95	2.10		ug/L		108	70 - 130
Metolachlor	<0.049		1.95	2.21		ug/L		114	70 - 130
Molinate	<0.097		1.95	2.06		ug/L		106	70 - 130
Naphthalene	<0.29		1.95	1.96		ug/L		100	70 - 130
Parathion	<0.097		1.95	2.06		ug/L		105	70 - 130
Pendimethalin (Penoxaline)	<0.097		1.95	2.01		ug/L		103	70 - 130
Phenanthrene	<0.039		1.95	1.95		ug/L		100	70 - 130
Propachlor	<0.049		1.95	2.21		ug/L		113	70 - 130
Pyrene	<0.049		1.95	2.13		ug/L		109	70 - 130
Simazine	<0.049		1.95	2.06		ug/L		105	70 - 130
Terbacil	<0.097		1.95	2.22		ug/L		114	70 - 130
Terbuthylazine	<0.097		1.95	2.30		ug/L		118	70 - 130
Thiobencarb	<0.19		1.95	2.20		ug/L		113	70 - 130
trans-Nonachlor	<0.049		1.95	2.02		ug/L		104	70 - 130
Trifluralin	<0.097		1.95	1.98		ug/L		101	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*100*		*70 - 130*
Perylene-d12	*93*		*70 - 130*
Triphenylphosphate	*109*		*70 - 130*

Lab Sample ID: 380-51755-K-1-A DU
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 44953

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1-Methylnaphthalene	<0.098		<0.097		ug/L		NC	20
2,4'-DDD	<0.098		<0.097		ug/L		NC	20

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 380-51755-K-1-A DU
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 44953

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
2,4'-DDE	<0.098			<0.097		ug/L				NC	20
2,4'-DDT	<0.098			<0.097		ug/L				NC	20
2,4-Dinitrotoluene	<0.098			<0.097		ug/L				NC	20
2,6-Dinitrotoluene	<0.098			<0.097		ug/L				NC	20
2-Methylnaphthalene	<0.098			<0.097		ug/L				NC	20
4,4'-DDD	<0.098			<0.097		ug/L				NC	20
4,4'-DDE	<0.098			<0.097		ug/L				NC	20
4,4'-DDT	<0.098			<0.097		ug/L				NC	20
Acenaphthene	<0.098			<0.097		ug/L				NC	20
Acenaphthylene	<0.098			<0.097		ug/L				NC	20
Acetochlor	<0.098			<0.097		ug/L				NC	20
Alachlor	<0.049			<0.049		ug/L				NC	20
alpha-BHC	<0.098			<0.097		ug/L				NC	20
alpha-Chlordane	<0.049			<0.049		ug/L				NC	20
Anthracene	<0.020			<0.019		ug/L				NC	20
Atrazine	<0.049			<0.049		ug/L				NC	20
Benz(a)anthracene	<0.049			<0.049		ug/L				NC	20
Benzo[a]pyrene	<0.020			<0.019		ug/L				NC	20
Benzo[b]fluoranthene	<0.020			<0.019		ug/L				NC	20
Benzo[g,h,i]perylene	<0.049			<0.049		ug/L				NC	20
Benzo[k]fluoranthene	<0.020			<0.019		ug/L				NC	20
beta-BHC	<0.098			<0.097		ug/L				NC	20
Bis(2-ethylhexyl) phthalate	<0.59			<0.58		ug/L				NC	20
Bromacil	<0.098			<0.097		ug/L				NC	20
Butachlor	<0.049			<0.049		ug/L				NC	20
Butylbenzylphthalate	<0.49			<0.49		ug/L				NC	20
Chlorobenzilate	<0.098			<0.097		ug/L				NC	20
Chloroneb	<0.098			<0.097		ug/L				NC	20
Chlorothalonil (Draconil, Bravo)	<0.098			<0.097		ug/L				NC	20
Chlorpyrifos	<0.049			<0.049		ug/L				NC	20
Chrysene	<0.020			<0.019		ug/L				NC	20
delta-BHC	<0.098			<0.097		ug/L				NC	20
Di(2-ethylhexyl)adipate	<0.59			<0.58		ug/L				NC	20
Dibenz(a,h)anthracene	<0.049			<0.049		ug/L				NC	20
Diclorvos (DDVP)	<0.049	^3+		<0.049		ug/L				NC	20
Dieldrin	<0.20			<0.19		ug/L				NC	20
Diethylphthalate	<0.49			<0.49		ug/L				NC	20
Dimethylphthalate	<0.49			<0.49		ug/L				NC	20
Di-n-butyl phthalate	<0.98			<0.97		ug/L				NC	20
Di-n-octyl phthalate	<0.098			<0.097		ug/L				NC	20
Endosulfan I (Alpha)	<0.098			<0.097		ug/L				NC	20
Endosulfan II (Beta)	<0.098			<0.097		ug/L				NC	20
Endosulfan sulfate	<0.098			<0.097		ug/L				NC	20
Endrin	<0.098			<0.097		ug/L				NC	20
Endrin aldehyde	<0.098			<0.097		ug/L				NC	20
EPTC	<0.098			<0.097		ug/L				NC	20
Fluoranthene	<0.098			<0.097		ug/L				NC	20
Fluorene	<0.049			<0.049		ug/L				NC	20
gamma-Chlordane	<0.049			<0.049		ug/L				NC	20

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 380-51755-K-1-A DU
Matrix: Water
Analysis Batch: 45363

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 44953

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Heptachlor	<0.039			<0.039		ug/L				NC	20
Heptachlor epoxide (isomer B)	<0.049			<0.049		ug/L				NC	20
Hexachlorobenzene	<0.049			<0.049		ug/L				NC	20
Hexachlorocyclopentadiene	<0.049			<0.049		ug/L				NC	20
Indeno[1,2,3-cd]pyrene	<0.049			<0.049		ug/L				NC	20
Isophorone	<0.49			<0.49		ug/L				NC	20
Lindane	<0.039			<0.039		ug/L				NC	20
Malathion	<0.098			<0.097		ug/L				NC	20
Methoxychlor	<0.098			<0.097		ug/L				NC	20
Metolachlor	<0.049			<0.049		ug/L				NC	20
Molinate	<0.098			<0.097		ug/L				NC	20
Naphthalene	<0.29			<0.29		ug/L				NC	20
Parathion	<0.098			<0.097		ug/L				NC	20
Pendimethalin (Penoxaline)	<0.098			<0.097		ug/L				NC	20
Phenanthrene	<0.039			<0.039		ug/L				NC	20
Propachlor	<0.049			<0.049		ug/L				NC	20
Pyrene	<0.049			<0.049		ug/L				NC	20
Simazine	0.065			0.0731		ug/L				12	20
Terbacil	<0.098			<0.097		ug/L				NC	20
Terbuthylazine	<0.098			<0.097		ug/L				NC	20
Thiobencarb	<0.20			<0.19		ug/L				NC	20
Total Permethrin (mixed isomers)	<0.20			<0.19		ug/L				NC	20
trans-Nonachlor	<0.049			<0.049		ug/L				NC	20
Trifluralin	<0.098			<0.097		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene	*95*		*70 - 130*
Perylene-d12	*90*		*70 - 130*
Triphenylphosphate	*104*		*70 - 130*

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

Lab Sample ID: MBL 380-46697/21-A
Matrix: Water
Analysis Batch: 46893

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46697

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1

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

Lab Sample ID: MBL 380-46697/21-A
Matrix: Water
Analysis Batch: 46893

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46697

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		07/10/23 05:10	07/11/23 23:13	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*60*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C6 PFDA	*93*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C5 PFHxA	*81*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C4 PFHpA	*88*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C8 PFOA	*90*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C9 PFNA	*89*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C7 PFUnA	*89*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C2 PFDoA	*91*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C4 PFBA	*83*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C5 PFPeA	*84*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C3 PFBS	*99*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C3 PFHxS	*98*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C8 PFOS	*100*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C2-4:2-FTS	*102*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C2-6:2-FTS	*96*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*
13C2-8:2-FTS	*92*		*50 - 200*	*07/10/23 05:10*	*07/11/23 23:13*	*1*

Lab Sample ID: LCS 380-46697/23-A
Matrix: Water
Analysis Batch: 46893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46697

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			60.1	55.3		ng/L		92	70 - 130		

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

Lab Sample ID: LCS 380-46697/23-A
Matrix: Water
Analysis Batch: 46893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46697

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	61.6		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	57.2		ng/L		95	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	76.5		ng/L		127	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	64.2		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	65.2		ng/L		108	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	60.9		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	63.0		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	62.9		ng/L		105	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	60.8		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	60.1	61.6		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	60.5		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	62.7		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.1	62.4		ng/L		104	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	63.0		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	61.4		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	66.2		ng/L		110	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	61.0		ng/L		101	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	49.8		ng/L		83	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.1	55.6		ng/L		92	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	61.5		ng/L		102	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	59.0		ng/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	68.5		ng/L		114	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	64.5		ng/L		107	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.1	62.9		ng/L		105	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*54*		*50 - 200*
13C6 PFDA	*85*		*50 - 200*
13C5 PFHxA	*75*		*50 - 200*
13C4 PFHpA	*79*		*50 - 200*
13C8 PFOA	*82*		*50 - 200*
13C9 PFNA	*84*		*50 - 200*
13C7 PFUnA	*85*		*50 - 200*
13C2 PFDoA	*89*		*50 - 200*
13C4 PFBA	*75*		*50 - 200*

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

Lab Sample ID: LCS 380-46697/23-A
Matrix: Water
Analysis Batch: 46893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46697

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C5 PFPeA	75		50 - 200
13C3 PFBS	95		50 - 200
13C3 PFHxS	92		50 - 200
13C8 PFOS	95		50 - 200
13C2-4:2-FTS	99		50 - 200
13C2-6:2-FTS	94		50 - 200
13C2-8:2-FTS	86		50 - 200

Lab Sample ID: LCSD 380-46697/24-A
Matrix: Water
Analysis Batch: 46893

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 46697

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			60.1	59.7		ng/L		99	70 - 130	8	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			60.1	64.5		ng/L		107	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			60.1	64.9		ng/L		108	70 - 130	13	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			60.1	70.7		ng/L		118	70 - 130	8	30
Perfluorobutanesulfonic acid (PFBS)			60.1	65.2		ng/L		108	70 - 130	2	30
Perfluorodecanoic acid (PFDA)			60.1	68.1		ng/L		113	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)			60.1	63.4		ng/L		106	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)			60.1	65.5		ng/L		109	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)			60.1	65.2		ng/L		109	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)			60.1	63.6		ng/L		106	70 - 130	4	30
Perfluorononanoic acid (PFNA)			60.1	65.3		ng/L		109	70 - 130	6	30
Perfluorooctanesulfonic acid (PFOS)			60.1	61.8		ng/L		103	70 - 130	2	30
Perfluorooctanoic acid (PFOA)			60.1	63.3		ng/L		105	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)			60.1	64.0		ng/L		106	70 - 130	3	30
Perfluorobutanoic acid (PFBA)			60.1	62.3		ng/L		104	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)			60.1	67.3		ng/L		112	70 - 130	9	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)			60.1	69.3		ng/L		115	70 - 130	5	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)			60.1	60.5		ng/L		101	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)			60.1	49.5		ng/L		82	70 - 130	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)			60.1	58.8		ng/L		98	70 - 130	6	30
Perfluoro-3-methoxypropanoic acid (PFMPA)			60.1	63.2		ng/L		105	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)			60.1	62.4		ng/L		104	70 - 130	6	30

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

Lab Sample ID: LCSD 380-46697/24-A
Matrix: Water
Analysis Batch: 46893

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 46697

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropentanoic acid (PFPeA)			60.1	66.9		ng/L		111	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)			60.1	63.0		ng/L		105	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)			60.1	66.7		ng/L		111	70 - 130	6	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C3 HFPO-DA	*68*		*50 - 200*
13C6 PFDA	*88*		*50 - 200*
13C5 PFHxA	*89*		*50 - 200*
13C4 PFHpA	*88*		*50 - 200*
13C8 PFOA	*90*		*50 - 200*
13C9 PFNA	*90*		*50 - 200*
13C7 PFUnA	*89*		*50 - 200*
13C2 PFDoA	*94*		*50 - 200*
13C4 PFBA	*98*		*50 - 200*
13C5 PFPeA	*96*		*50 - 200*
13C3 PFBS	*96*		*50 - 200*
13C3 PFHxS	*93*		*50 - 200*
13C8 PFOS	*97*		*50 - 200*
13C2-4:2-FTS	*94*		*50 - 200*
13C2-6:2-FTS	*93*		*50 - 200*
13C2-8:2-FTS	*88*		*50 - 200*

Lab Sample ID: MRL 380-46697/22-A
Matrix: Water
Analysis Batch: 46893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46697

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			1.89	2.07	J	ng/L		110	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			1.89	2.36	J	ng/L		125	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			1.89	2.22	J	ng/L		118	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			1.89	2.59	J	ng/L		137	50 - 150
Perfluorobutanesulfonic acid (PFBS)			1.89	2.45	J	ng/L		130	50 - 150
Perfluorodecanoic acid (PFDA)			1.89	2.41	J	ng/L		128	50 - 150
Perfluorododecanoic acid (PFDoA)			1.89	2.33	J	ng/L		123	50 - 150
Perfluoroheptanoic acid (PFHpA)			1.89	2.38	J	ng/L		126	50 - 150
Perfluorohexanesulfonic acid (PFHxS)			1.89	2.35	J	ng/L		125	50 - 150
Perfluorohexanoic acid (PFHxA)			1.89	2.29	J	ng/L		122	50 - 150
Perfluorononanoic acid (PFNA)			1.89	2.46	J	ng/L		131	50 - 150
Perfluorooctanesulfonic acid (PFOS)			1.89	2.22	J	ng/L		118	50 - 150
Perfluorooctanoic acid (PFOA)			1.89	2.38	J	ng/L		126	50 - 150

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

Lab Sample ID: MRL 380-46697/22-A
Matrix: Water
Analysis Batch: 46893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46697

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	1.89	2.25	J	ng/L		119	50 - 150
Perfluorobutanoic acid (PFBA)	1.89	2.47	J	ng/L		131	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.89	2.34	J	ng/L		124	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.89	2.61	J	ng/L		139	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.89	2.58	J	ng/L		137	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.89	1.81	J	ng/L		96	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	1.89	2.10	J	ng/L		111	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.89	2.33	J	ng/L		123	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.89	2.21	J	ng/L		117	50 - 150
Perfluoropentanoic acid (PFPeA)	1.89	2.81	J	ng/L		149	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.89	2.24	J	ng/L		119	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.89	2.27	J	ng/L		121	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*60*		*50 - 200*
13C6 PFDA	*88*		*50 - 200*
13C5 PFHxA	*83*		*50 - 200*
13C4 PFHpA	*87*		*50 - 200*
13C8 PFOA	*87*		*50 - 200*
13C9 PFNA	*84*		*50 - 200*
13C7 PFUnA	*85*		*50 - 200*
13C2 PFDoA	*90*		*50 - 200*
13C4 PFBA	*91*		*50 - 200*
13C5 PFPeA	*88*		*50 - 200*
13C3 PFBS	*94*		*50 - 200*
13C3 PFHxS	*92*		*50 - 200*
13C8 PFOS	*96*		*50 - 200*
13C2-4:2-FTS	*97*		*50 - 200*
13C2-6:2-FTS	*93*		*50 - 200*
13C2-8:2-FTS	*90*		*50 - 200*

Lab Sample ID: MBL 380-46700/21-A
Matrix: Water
Analysis Batch: 46927

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46700

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		07/10/23 08:06	07/11/23 21:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/10/23 08:06	07/11/23 21:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/10/23 08:06	07/11/23 21:19	1

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

Lab Sample ID: MBL 380-46700/21-A
Matrix: Water
Analysis Batch: 46927

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46700

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluoropentanoic acid (PFPeA)	0.441	J	2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		07/10/23 08:06	07/11/23 21:19	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*59*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C6 PFDA	*90*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C5 PFHxA	*78*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C4 PFHpA	*80*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C8 PFOA	*86*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C9 PFNA	*86*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C7 PFUnA	*89*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C2 PFDoA	*101*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C4 PFBA	*76*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C5 PFPeA	*75*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C3 PFBS	*98*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C3 PFHxS	*97*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C8 PFOS	*99*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C2-4:2-FTS	*103*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C2-6:2-FTS	*112*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*
13C2-8:2-FTS	*135*		*50 - 200*	*07/10/23 08:06*	*07/11/23 21:19*	*1*

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

Lab Sample ID: LCS 380-46700/23-A
Matrix: Water
Analysis Batch: 46927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46700

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	58.2		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	55.8		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	58.8		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	62.6		ng/L		104	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	59.0		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	65.0		ng/L		108	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	61.3		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	61.1		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	62.1		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	59.2		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	60.2	60.6		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	58.9		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	60.4		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	64.5		ng/L		107	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	61.0		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	63.3		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	63.6		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	60.3		ng/L		100	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	49.6		ng/L		82	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.2	58.7		ng/L		97	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	59.8		ng/L		99	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	60.3		ng/L		100	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	61.4		ng/L		102	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	62.0		ng/L		103	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.2	59.8		ng/L		99	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*71*		*50 - 200*
13C6 PFDA	*89*		*50 - 200*
13C5 PFHxA	*86*		*50 - 200*
13C4 PFHpA	*86*		*50 - 200*
13C8 PFOA	*94*		*50 - 200*
13C9 PFNA	*93*		*50 - 200*

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

Lab Sample ID: LCS 380-46700/23-A
Matrix: Water
Analysis Batch: 46927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46700

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C7 PFUnA	*88*		*50 - 200*
13C2 PFDoA	*97*		*50 - 200*
13C4 PFBA	*85*		*50 - 200*
13C5 PFPeA	*85*		*50 - 200*
13C3 PFBS	*95*		*50 - 200*
13C3 PFHxS	*94*		*50 - 200*
13C8 PFOS	*98*		*50 - 200*
13C2-4:2-FTS	*94*		*50 - 200*
13C2-6:2-FTS	*106*		*50 - 200*
13C2-8:2-FTS	*98*		*50 - 200*

Lab Sample ID: LCSD 380-46700/24-A
Matrix: Water
Analysis Batch: 46927

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 46700

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			60.4	56.1		ng/L		93	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			60.4	52.4		ng/L		87	70 - 130	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			60.4	51.5		ng/L		85	70 - 130	13	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			60.4	65.5		ng/L		108	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)			60.4	57.4		ng/L		95	70 - 130	3	30
Perfluorodecanoic acid (PFDA)			60.4	60.5		ng/L		100	70 - 130	7	30
Perfluorododecanoic acid (PFDoA)			60.4	58.8		ng/L		97	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)			60.4	57.8		ng/L		96	70 - 130	6	30
Perfluorohexanesulfonic acid (PFHxS)			60.4	59.7		ng/L		99	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)			60.4	58.2		ng/L		96	70 - 130	2	30
Perfluorononanoic acid (PFNA)			60.4	59.7		ng/L		99	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)			60.4	56.5		ng/L		94	70 - 130	4	30
Perfluorooctanoic acid (PFOA)			60.4	58.8		ng/L		97	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)			60.4	61.0		ng/L		101	70 - 130	6	30
Perfluorobutanoic acid (PFBA)			60.4	57.9		ng/L		96	70 - 130	5	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)			60.4	62.4		ng/L		103	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)			60.4	60.5		ng/L		100	70 - 130	5	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)			60.4	59.8		ng/L		99	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)			60.4	44.3		ng/L		73	70 - 130	11	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)			60.4	56.8		ng/L		94	70 - 130	3	30

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

Lab Sample ID: LCSD 380-46700/24-A
Matrix: Water
Analysis Batch: 46927

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 46700

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoro-3-methoxypropanoic acid (PFMPA)			60.4	52.3		ng/L		87	70 - 130	13	30
Perfluoro-4-methoxybutanoic acid (PFMBA)			60.4	56.7		ng/L		94	70 - 130	6	30
Perfluoropentanoic acid (PFPeA)			60.4	59.7		ng/L		99	70 - 130	3	30
Perfluoroheptanesulfonic acid (PFHpS)			60.4	59.2		ng/L		98	70 - 130	5	30
Perfluoropentanesulfonic acid (PFPeS)			60.4	56.4		ng/L		94	70 - 130	6	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C3 HFPO-DA	*54*		*50 - 200*
13C6 PFDA	*84*		*50 - 200*
13C5 PFHxA	*70*		*50 - 200*
13C4 PFHpA	*74*		*50 - 200*
13C8 PFOA	*79*		*50 - 200*
13C9 PFNA	*81*		*50 - 200*
13C7 PFUnA	*85*		*50 - 200*
13C2 PFDoA	*94*		*50 - 200*
13C4 PFBA	*65*		*50 - 200*
13C5 PFPeA	*65*		*50 - 200*
13C3 PFBS	*95*		*50 - 200*
13C3 PFHxS	*95*		*50 - 200*
13C8 PFOS	*99*		*50 - 200*
13C2-4:2-FTS	*95*		*50 - 200*
13C2-6:2-FTS	*101*		*50 - 200*
13C2-8:2-FTS	*97*		*50 - 200*

Lab Sample ID: MRL 380-46700/22-A
Matrix: Water
Analysis Batch: 46927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46700

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			2.01	1.91	J	ng/L		95	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			2.01	1.75	J	ng/L		87	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			2.01	1.83	J	ng/L		91	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			2.01	2.12	J	ng/L		105	50 - 150
Perfluorobutanesulfonic acid (PFBS)			2.01	1.98	J	ng/L		98	50 - 150
Perfluorodecanoic acid (PFDA)			2.01	2.07	J	ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)			2.01	1.95	J	ng/L		97	50 - 150
Perfluoroheptanoic acid (PFHpA)			2.01	2.12	J	ng/L		106	50 - 150
Perfluorohexanesulfonic acid (PFHxS)			2.01	1.97	J	ng/L		98	50 - 150
Perfluorohexanoic acid (PFHxA)			2.01	2.26	J	ng/L		113	50 - 150

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

Lab Sample ID: MRL 380-46700/22-A
Matrix: Water
Analysis Batch: 46927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46700

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorononanoic acid (PFNA)	2.01	2.12	J	ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	1.98	J	ng/L		99	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.17	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.08	J	ng/L		104	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.03	J	ng/L		101	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.40	J	ng/L		119	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	1.68	J	ng/L		84	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	2.00	J	ng/L		100	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.90	J	ng/L		95	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.07	J	ng/L		103	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.36	J	ng/L		117	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.99	J	ng/L		99	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.93	J	ng/L		96	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*56*		*50 - 200*
13C6 PFDA	*80*		*50 - 200*
13C5 PFHxA	*72*		*50 - 200*
13C4 PFHpA	*75*		*50 - 200*
13C8 PFOA	*81*		*50 - 200*
13C9 PFNA	*79*		*50 - 200*
13C7 PFUnA	*83*		*50 - 200*
13C2 PFDoA	*92*		*50 - 200*
13C4 PFBA	*71*		*50 - 200*
13C5 PFPeA	*69*		*50 - 200*
13C3 PFBS	*95*		*50 - 200*
13C3 PFHxS	*94*		*50 - 200*
13C8 PFOS	*98*		*50 - 200*
13C2-4:2-FTS	*96*		*50 - 200*
13C2-6:2-FTS	*102*		*50 - 200*
13C2-8:2-FTS	*95*		*50 - 200*

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

Lab Sample ID: 380-51629-B-1-A MS
Matrix: Water
Analysis Batch: 46927

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 46700

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)	<2.0		60.2	59.1		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	56.1		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	55.6		ng/L		92	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	65.7		ng/L		109	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	59.4		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	63.6		ng/L		106	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	62.5		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	60.8		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	59.3		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	59.9		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	61.4		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	59.7		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	61.0		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	65.1		ng/L		108	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	60.3		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	65.5		ng/L		109	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	66.7		ng/L		111	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	62.5		ng/L		104	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	48.5		ng/L		81	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	55.0		ng/L		91	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	55.4		ng/L		92	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	58.5		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	60.3		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	62.3		ng/L		103	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	58.2		ng/L		97	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*68*		*50 - 200*
13C6 PFDA	*87*		*50 - 200*
13C5 PFHxA	*83*		*50 - 200*
13C4 PFHpA	*84*		*50 - 200*
13C8 PFOA	*87*		*50 - 200*
13C9 PFNA	*88*		*50 - 200*

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

Lab Sample ID: 380-51629-B-1-A MS
Matrix: Water
Analysis Batch: 46927

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 46700

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C7 PFUnA	88		50 - 200
13C2 PFDoA	95		50 - 200
13C4 PFBA	82		50 - 200
13C5 PFPeA	82		50 - 200
13C3 PFBS	95		50 - 200
13C3 PFHxS	96		50 - 200
13C8 PFOS	97		50 - 200
13C2-4:2-FTS	90		50 - 200
13C2-6:2-FTS	99		50 - 200
13C2-8:2-FTS	95		50 - 200

Lab Sample ID: 380-51629-C-1-A MSD
Matrix: Water
Analysis Batch: 46927

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 46700

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.4	57.6		ng/L		95	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	57.8		ng/L		96	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	53.7		ng/L		89	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.4	62.7		ng/L		104	70 - 130	5	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	59.3		ng/L		98	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		60.4	65.0		ng/L		108	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	61.2		ng/L		101	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	60.1		ng/L		100	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	61.1		ng/L		101	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	62.2		ng/L		103	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		60.4	62.5		ng/L		104	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	60.5		ng/L		100	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		60.4	60.0		ng/L		99	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	64.1		ng/L		106	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		60.4	61.7		ng/L		102	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	64.8		ng/L		107	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	65.0		ng/L		108	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	60.5		ng/L		100	70 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	51.8		ng/L		86	70 - 130	6	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.4	59.8		ng/L		99	70 - 130	8	30

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

Lab Sample ID: 380-51629-C-1-A MSD
Matrix: Water
Analysis Batch: 46927

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 46700

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	54.7		ng/L		91	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	58.7		ng/L		97	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	61.6		ng/L		102	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	61.9		ng/L		102	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	59.0		ng/L		98	70 - 130	1	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C3 HFPO-DA	*52*		*50 - 200*
13C6 PFDA	*77*		*50 - 200*
13C5 PFHxA	*63*		*50 - 200*
13C4 PFHpA	*67*		*50 - 200*
13C8 PFOA	*72*		*50 - 200*
13C9 PFNA	*74*		*50 - 200*
13C7 PFUnA	*80*		*50 - 200*
13C2 PFDoA	*90*		*50 - 200*
13C4 PFBA	*60*		*50 - 200*
13C5 PFPeA	*59*		*50 - 200*
13C3 PFBS	*96*		*50 - 200*
13C3 PFHxS	*95*		*50 - 200*
13C8 PFOS	*98*		*50 - 200*
13C2-4:2-FTS	*91*		*50 - 200*
13C2-6:2-FTS	*100*		*50 - 200*
13C2-8:2-FTS	*95*		*50 - 200*

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

Lab Sample ID: MBL 380-44996/23-A
Matrix: Water
Analysis Batch: 45077

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 44996

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1

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

Lab Sample ID: MBL 380-44996/23-A
Matrix: Water
Analysis Batch: 45077

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 44996

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		06/22/23 06:18	06/22/23 16:25	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*117*		*70 - 130*	*06/22/23 06:18*	*06/22/23 16:25*	*1*
13C2 PFHxA	*104*		*70 - 130*	*06/22/23 06:18*	*06/22/23 16:25*	*1*
13C2 PFDA	*112*		*70 - 130*	*06/22/23 06:18*	*06/22/23 16:25*	*1*
13C3-GenX	*92*		*70 - 130*	*06/22/23 06:18*	*06/22/23 16:25*	*1*

Lab Sample ID: LCS 380-44996/25-A
Matrix: Water
Analysis Batch: 45077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 44996

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			25.0	23.3		ng/L		93	70 - 130		
Perfluorooctanesulfonic acid (PFOS)			23.2	25.0		ng/L		108	70 - 130		
Perfluoroundecanoic acid (PFUnA)			25.0	26.0		ng/L		104	70 - 130		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			25.0	26.8		ng/L		107	70 - 130		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			25.0	28.1		ng/L		112	70 - 130		
Perfluorohexanoic acid (PFHxA)			25.0	25.4		ng/L		102	70 - 130		
Perfluorododecanoic acid (PFDoA)			25.0	27.1		ng/L		109	70 - 130		
Perfluorooctanoic acid (PFOA)			25.0	27.8		ng/L		111	70 - 130		
Perfluorodecanoic acid (PFDA)			25.0	27.7		ng/L		111	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)			22.8	23.3		ng/L		102	70 - 130		
Perfluorobutanesulfonic acid (PFBS)			22.1	24.5		ng/L		111	70 - 130		
Perfluoroheptanoic acid (PFHpA)			25.0	27.3		ng/L		109	70 - 130		
Perfluorononanoic acid (PFNA)			25.0	30.6		ng/L		122	70 - 130		
Perfluorotetradecanoic acid (PFTA)			25.0	29.2		ng/L		117	70 - 130		
Perfluorotridecanoic acid (PFTrDA)			25.0	28.8		ng/L		115	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			23.4	25.7		ng/L		110	70 - 130		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			23.6	22.5		ng/L		95	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			23.6	25.9		ng/L		110	70 - 130		

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	107		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	106		70 - 130
13C3-GenX	98		70 - 130

Lab Sample ID: LCSD 380-44996/26-A
Matrix: Water
Analysis Batch: 45077

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 44996

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			25.0	24.8		ng/L		99	70 - 130	6	30
Perfluorooctanesulfonic acid (PFOS)			23.2	26.7		ng/L		115	70 - 130	6	30
Perfluoroundecanoic acid (PFUnA)			25.0	28.2		ng/L		113	70 - 130	8	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			25.0	29.7		ng/L		119	70 - 130	10	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			25.0	30.2		ng/L		121	70 - 130	7	30
Perfluorohexanoic acid (PFHxA)			25.0	27.8		ng/L		111	70 - 130	9	30
Perfluorododecanoic acid (PFDoA)			25.0	29.2		ng/L		117	70 - 130	7	30
Perfluorooctanoic acid (PFOA)			25.0	30.2		ng/L		121	70 - 130	8	30
Perfluorodecanoic acid (PFDA)			25.0	30.1		ng/L		120	70 - 130	8	30
Perfluorohexanesulfonic acid (PFHxS)			22.8	25.7		ng/L		113	70 - 130	10	30
Perfluorobutanesulfonic acid (PFBS)			22.1	25.8		ng/L		117	70 - 130	5	30
Perfluoroheptanoic acid (PFHpA)			25.0	30.2		ng/L		121	70 - 130	10	30
Perfluorononanoic acid (PFNA)			25.0	31.0		ng/L		124	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)			25.0	31.0		ng/L		124	70 - 130	6	30
Perfluorotridecanoic acid (PFTrDA)			25.0	31.5		ng/L		126	70 - 130	9	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			23.4	27.5		ng/L		118	70 - 130	7	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			23.6	24.2		ng/L		102	70 - 130	7	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			23.6	28.5		ng/L		121	70 - 130	10	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
d5-NEtFOSAA	115		70 - 130
13C2 PFHxA	109		70 - 130
13C2 PFDA	111		70 - 130
13C3-GenX	99		70 - 130

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

Lab Sample ID: MRL 380-44996/24-A
Matrix: Water
Analysis Batch: 45077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 44996

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.79	J	ng/L		90	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.85	2.05	J	ng/L		111	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.19	J	ng/L		110	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.31	J	ng/L		116	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.36	J	ng/L		118	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.52	J	ng/L		126	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.27	J	ng/L		113	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.92	J	ng/L		105	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.95	J	ng/L		110	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.37	J	ng/L		119	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.36	J	ng/L		118	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.49	J	ng/L		125	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.38	J	ng/L		119	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	2.05	J	ng/L		110	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	1.80	J	ng/L		95	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.22	J	ng/L		118	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*110*		*70 - 130*
13C2 PFHxA	*102*		*70 - 130*
13C2 PFDA	*103*		*70 - 130*
13C3-GenX	*91*		*70 - 130*

Lab Sample ID: 380-51797-1 MS
Matrix: Drinking Water
Analysis Batch: 45077

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 44996

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.00	<2.0		ng/L		87	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		1.86	3.73		ng/L		113	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		2.00	2.25		ng/L		112	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.00	2.42		ng/L		121	70 - 130

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

Lab Sample ID: 380-51797-1 MS
Matrix: Drinking Water
Analysis Batch: 45077

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 44996

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.00	2.43		ng/L		121	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		2.00	3.16		ng/L		111	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		2.00	2.27		ng/L		113	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		2.00	3.23		ng/L		114	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		2.00	2.35		ng/L		117	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		1.83	3.09		ng/L		105	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		1.77	2.27		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		2.00	2.91		ng/L		115	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		2.00	2.55		ng/L		127	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		2.00	2.52		ng/L		126	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.00	2.43		ng/L		121	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		1.87	2.06		ng/L		110	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		1.89	<2.0		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		1.89	2.13		ng/L		112	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*114*		*70 - 130*
13C2 PFHxA	*102*		*70 - 130*
13C2 PFDA	*109*		*70 - 130*
13C3-GenX	*93*		*70 - 130*

Lab Sample ID: 380-51797-1 MSD
Matrix: Drinking Water
Analysis Batch: 45077

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 44996

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.00	<2.0		ng/L		96	70 - 130	10	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		1.86	3.51		ng/L		102	70 - 130	6	30
Perfluoroundecanoic acid (PFUnA)	<2.0		2.00	2.18		ng/L		109	70 - 130	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.00	2.10		ng/L		105	70 - 130	14	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.00	2.14		ng/L		107	70 - 130	13	30
Perfluorohexanoic acid (PFHxA)	<2.0		2.00	3.01		ng/L		104	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		2.00	2.31		ng/L		115	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		2.00	3.24		ng/L		115	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		2.00	2.34		ng/L		117	70 - 130	0	30

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

Lab Sample ID: 380-51797-1 MSD
Matrix: Drinking Water
Analysis Batch: 45077

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 44996

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		1.83	3.05		ng/L		103	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		1.77	2.31		ng/L		102	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		2.00	2.90		ng/L		114	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		2.00	2.51		ng/L		125	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		2.00	2.48		ng/L		124	70 - 130	2	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.00	2.37		ng/L		118	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		1.87	<2.0		ng/L		105	70 - 130	5	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		1.89	<2.0		ng/L		93	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		1.89	2.20		ng/L		116	70 - 130	3	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*103*		*70 - 130*
13C2 PFHxA	*101*		*70 - 130*
13C2 PFDA	*112*		*70 - 130*
13C3-GenX	*90*		*70 - 130*

Lab Sample ID: MBL 380-45392/23-A
Matrix: Water
Analysis Batch: 45463

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 45392

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1

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

Lab Sample ID: MBL 380-45392/23-A
Matrix: Water
Analysis Batch: 45463

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 45392

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		06/26/23 07:28	06/26/23 19:20	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*108*		*70 - 130*	*06/26/23 07:28*	*06/26/23 19:20*	*1*
13C2 PFHxA	*114*		*70 - 130*	*06/26/23 07:28*	*06/26/23 19:20*	*1*
13C2 PFDA	*121*		*70 - 130*	*06/26/23 07:28*	*06/26/23 19:20*	*1*
13C3-GenX	*102*		*70 - 130*	*06/26/23 07:28*	*06/26/23 19:20*	*1*

Lab Sample ID: LCS 380-45392/25-A
Matrix: Water
Analysis Batch: 45463

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45392

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			25.0	24.1		ng/L		96	70 - 130		
Perfluorooctanesulfonic acid (PFOS)			23.2	24.4		ng/L		105	70 - 130		
Perfluoroundecanoic acid (PFUnA)			25.0	28.3		ng/L		113	70 - 130		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			25.0	27.0		ng/L		108	70 - 130		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			25.0	26.2		ng/L		105	70 - 130		
Perfluorohexanoic acid (PFHxA)			25.0	28.1		ng/L		113	70 - 130		
Perfluorododecanoic acid (PFDoA)			25.0	27.7		ng/L		111	70 - 130		
Perfluorooctanoic acid (PFOA)			25.0	27.7		ng/L		111	70 - 130		
Perfluorodecanoic acid (PFDA)			25.0	30.6		ng/L		122	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)			22.8	24.6		ng/L		108	70 - 130		
Perfluorobutanesulfonic acid (PFBS)			22.1	23.6		ng/L		107	70 - 130		
Perfluoroheptanoic acid (PFHpA)			25.0	29.0		ng/L		116	70 - 130		
Perfluorononanoic acid (PFNA)			25.0	28.1		ng/L		112	70 - 130		
Perfluorotetradecanoic acid (PFTA)			25.0	28.1		ng/L		112	70 - 130		
Perfluorotridecanoic acid (PFTrDA)			25.0	28.5		ng/L		114	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			23.4	25.0		ng/L		107	70 - 130		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			23.6	26.3		ng/L		111	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			23.6	24.6		ng/L		104	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
d5-NEtFOSAA	*108*		*70 - 130*
13C2 PFHxA	*113*		*70 - 130*
13C2 PFDA	*125*		*70 - 130*

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

Lab Sample ID: LCS 380-45392/25-A
Matrix: Water
Analysis Batch: 45463

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45392

Surrogate	LCS %Recovery	LCS Qualifier	Limits
13C3-GenX	101		70 - 130

Lab Sample ID: MRL 380-45392/24-A
Matrix: Water
Analysis Batch: 45463

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45392

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.85	2.28	J	ng/L		123	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.41	J	ng/L		120	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.39	J	ng/L		120	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.50	J	ng/L		125	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.51	J	ng/L		126	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.38	J	ng/L		119	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.57	J	ng/L		128	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.82	J	ng/L		141	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.16	J	ng/L		119	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	2.14	J	ng/L		121	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.51	J	ng/L		126	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.59	J	ng/L		130	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.60	J	ng/L		130	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.40	J	ng/L		120	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	2.21	J	ng/L		118	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	2.19	J	ng/L		116	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.27	J	ng/L		120	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	113		70 - 130
13C2 PFHxA	118		70 - 130
13C2 PFDA	133	^3+	70 - 130
13C3-GenX	109		70 - 130

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

Lab Sample ID: 380-51952-E-1-A MS
Matrix: Water
Analysis Batch: 45463

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 45392

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.1	50.5		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		46.4	49.6		ng/L		107	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.1	55.1		ng/L		110	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.1	51.7		ng/L		103	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.1	52.6		ng/L		105	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.1	54.3		ng/L		108	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.1	54.6		ng/L		109	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.1	53.2		ng/L		106	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.1	59.3		ng/L		118	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		45.7	47.8		ng/L		105	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		44.3	47.4		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.1	50.9		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.1	56.3		ng/L		112	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.1	53.5		ng/L		107	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.1	56.6		ng/L		113	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		46.8	51.0		ng/L		109	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		47.3	51.1		ng/L		108	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		47.3	51.4		ng/L		109	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*105*		*70 - 130*
13C2 PFHxA	*119*		*70 - 130*
13C2 PFDA	*121*		*70 - 130*
13C3-GenX	*110*		*70 - 130*

Lab Sample ID: 380-51952-F-1-A MSD
Matrix: Water
Analysis Batch: 45463

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 45392

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.1	52.4		ng/L		105	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		46.4	48.5		ng/L		105	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.1	56.2		ng/L		112	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.1	52.4		ng/L		105	70 - 130	1	30

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

Lab Sample ID: 380-51952-F-1-A MSD
Matrix: Water
Analysis Batch: 45463

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 45392

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.1	52.8		ng/L		105	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.1	57.1		ng/L		114	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.1	53.8		ng/L		107	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		50.1	54.1		ng/L		108	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		50.1	57.5		ng/L		115	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		45.7	48.8		ng/L		107	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		44.3	47.4		ng/L		107	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.1	54.8		ng/L		109	70 - 130	7	30
Perfluorononanoic acid (PFNA)	<2.0		50.1	54.9		ng/L		109	70 - 130	3	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.1	53.8		ng/L		107	70 - 130	0	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.1	55.4		ng/L		111	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		46.8	50.4		ng/L		107	70 - 130	1	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		47.3	52.1		ng/L		110	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		47.3	53.1		ng/L		112	70 - 130	3	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*106*		*70 - 130*
13C2 PFHxA	*116*		*70 - 130*
13C2 PFDA	*116*		*70 - 130*
13C3-GenX	*102*		*70 - 130*

GC/MS Semi VOA

Prep Batch: 44953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-51797-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	
380-51797-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	
380-51797-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	
380-51797-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	
MB 380-44953/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-44953/23-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-44953/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-44953/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-51679-B-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-51755-K-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 45363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-51797-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	44953
380-51797-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	44953
380-51797-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	44953
380-51797-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	44953
MB 380-44953/21-A	Method Blank	Total/NA	Water	525.2	44953
LCS 380-44953/23-A	Lab Control Sample	Total/NA	Water	525.2	44953
LCSD 380-44953/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	44953
MRL 380-44953/22-A	Lab Control Sample	Total/NA	Water	525.2	44953
380-51679-B-1-A MS	Matrix Spike	Total/NA	Water	525.2	44953
380-51755-K-1-A DU	Duplicate	Total/NA	Water	525.2	44953

LCMS

Prep Batch: 44996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-51797-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	
380-51797-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1 DW	
380-51797-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1 DW	
380-51797-9	FB MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-51797-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-51797-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-51797-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
MBL 380-44996/23-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-44996/25-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-44996/26-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-44996/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-51797-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	
380-51797-1 MSD	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	

Analysis Batch: 45077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-51797-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1	44996
380-51797-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1	44996
380-51797-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1	44996
380-51797-9	FB MOANALUA WELLS	Total/NA	Water	537.1	44996
380-51797-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	44996
380-51797-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	44996
380-51797-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	44996

LCMS (Continued)

Analysis Batch: 45077 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MBL 380-44996/23-A	Method Blank	Total/NA	Water	537.1	44996
LCS 380-44996/25-A	Lab Control Sample	Total/NA	Water	537.1	44996
LCSD 380-44996/26-A	Lab Control Sample Dup	Total/NA	Water	537.1	44996
MRL 380-44996/24-A	Lab Control Sample	Total/NA	Water	537.1	44996
380-51797-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	537.1	44996
380-51797-1 MSD	MOANALUA WELLS	Total/NA	Drinking Water	537.1	44996

Prep Batch: 45392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-51797-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1 DW	
MBL 380-45392/23-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-45392/25-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-45392/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-51952-E-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-51952-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 45463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-51797-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1	45392
MBL 380-45392/23-A	Method Blank	Total/NA	Water	537.1	45392
LCS 380-45392/25-A	Lab Control Sample	Total/NA	Water	537.1	45392
MRL 380-45392/24-A	Lab Control Sample	Total/NA	Water	537.1	45392
380-51952-E-1-A MS	Matrix Spike	Total/NA	Water	537.1	45392
380-51952-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	45392

Prep Batch: 46697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-51797-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	
380-51797-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	533	
380-51797-9	FB MOANALUA WELLS	Total/NA	Water	533	
380-51797-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-51797-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-51797-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
MBL 380-46697/21-A	Method Blank	Total/NA	Water	533	
LCS 380-46697/23-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-46697/24-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-46697/22-A	Lab Control Sample	Total/NA	Water	533	

Prep Batch: 46700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-51797-1	MOANALUA WELLS	Total/NA	Drinking Water	533	
380-51797-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	
MBL 380-46700/21-A	Method Blank	Total/NA	Water	533	
LCS 380-46700/23-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-46700/24-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-46700/22-A	Lab Control Sample	Total/NA	Water	533	
380-51629-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-51629-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

LCMS

Analysis Batch: 46893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-51797-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	46697
380-51797-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	533	46697
380-51797-9	FB MOANALUA WELLS	Total/NA	Water	533	46697
380-51797-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	46697
380-51797-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	46697
380-51797-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	46697
MBL 380-46697/21-A	Method Blank	Total/NA	Water	533	46697
LCS 380-46697/23-A	Lab Control Sample	Total/NA	Water	533	46697
LCSD 380-46697/24-A	Lab Control Sample Dup	Total/NA	Water	533	46697
MRL 380-46697/22-A	Lab Control Sample	Total/NA	Water	533	46697
380-51842-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-51842-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 46927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-51797-1	MOANALUA WELLS	Total/NA	Drinking Water	533	46700
380-51797-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	46700
MBL 380-46700/21-A	Method Blank	Total/NA	Water	533	46700
LCS 380-46700/23-A	Lab Control Sample	Total/NA	Water	533	46700
LCSD 380-46700/24-A	Lab Control Sample Dup	Total/NA	Water	533	46700
MRL 380-46700/22-A	Lab Control Sample	Total/NA	Water	533	46700
380-51629-B-1-A MS	Matrix Spike	Total/NA	Water	533	46700
380-51629-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	46700

Lab Chronicle

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-51797-1
Matrix: Drinking Water
Date Collected: 06/19/23 10:01
Date Received: 06/21/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			44953	N8NE	EA POM	06/22/23 17:51
Total/NA	Analysis	525.2		1	45363	Q8LA	EA POM	06/25/23 12:54
Total/NA	Prep	533			46700	AUY6	EA POM	07/10/23 08:06
Total/NA	Analysis	533		1	46927	UKYM	EA POM	07/11/23 23:34
Total/NA	Prep	537.1 DW			44996	US1B	EA POM	06/22/23 06:18
Total/NA	Analysis	537.1		1	45077	UKDT	EA POM	06/22/23 17:03

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-51797-2
Matrix: Drinking Water
Date Collected: 06/19/23 11:22
Date Received: 06/21/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			44953	N8NE	EA POM	06/22/23 17:51
Total/NA	Analysis	525.2		1	45363	Q8LA	EA POM	06/25/23 13:14
Total/NA	Prep	533			46700	AUY6	EA POM	07/10/23 08:06
Total/NA	Analysis	533		1	46927	UKYM	EA POM	07/11/23 23:44
Total/NA	Prep	537.1 DW			44996	US1B	EA POM	06/22/23 06:18
Total/NA	Analysis	537.1		1	45077	UKDT	EA POM	06/22/23 19:37

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-51797-3
Matrix: Drinking Water
Date Collected: 06/19/23 10:56
Date Received: 06/21/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			44953	N8NE	EA POM	06/22/23 17:51
Total/NA	Analysis	525.2		1	45363	Q8LA	EA POM	06/25/23 13:34
Total/NA	Prep	533			46697	XTD8	EA POM	07/10/23 05:10
Total/NA	Analysis	533		1	46893	UKDT	EA POM	07/12/23 00:49
Total/NA	Prep	537.1 DW			44996	US1B	EA POM	06/22/23 06:18
Total/NA	Analysis	537.1		1	45077	UKDT	EA POM	06/22/23 19:46

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-51797-4
Matrix: Drinking Water
Date Collected: 06/19/23 10:29
Date Received: 06/21/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			44953	N8NE	EA POM	06/22/23 17:51
Total/NA	Analysis	525.2		1	45363	Q8LA	EA POM	06/25/23 13:54
Total/NA	Prep	533			46697	XTD8	EA POM	07/10/23 05:10
Total/NA	Analysis	533		1	46893	UKDT	EA POM	07/12/23 00:59
Total/NA	Prep	537.1 DW			45392	US1B	EA POM	06/26/23 07:28
Total/NA	Analysis	537.1		1	45463	UKYM	EA POM	06/26/23 23:34

Lab Chronicle

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Client Sample ID: FB MOANALUA WELLS
Lab Sample ID: 380-51797-9
Date Collected: 06/19/23 10:01
Matrix: Water
Date Received: 06/21/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			46697	XTD8	EA POM	07/10/23 05:10
Total/NA	Analysis	533		1	46893	UKDT	EA POM	07/12/23 01:08
Total/NA	Prep	537.1 DW			44996	US1B	EA POM	06/22/23 06:18
Total/NA	Analysis	537.1		1	45077	UKDT	EA POM	06/22/23 20:05

Client Sample ID: FB AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-51797-10
Date Collected: 06/19/23 11:22
Matrix: Water
Date Received: 06/21/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			46697	XTD8	EA POM	07/10/23 05:10
Total/NA	Analysis	533		1	46893	UKDT	EA POM	07/12/23 01:18
Total/NA	Prep	537.1 DW			44996	US1B	EA POM	06/22/23 06:18
Total/NA	Analysis	537.1		1	45077	UKDT	EA POM	06/22/23 20:15

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-51797-11
Date Collected: 06/19/23 10:56
Matrix: Water
Date Received: 06/21/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			46697	XTD8	EA POM	07/10/23 05:10
Total/NA	Analysis	533		1	46893	UKDT	EA POM	07/12/23 01:27
Total/NA	Prep	537.1 DW			44996	US1B	EA POM	06/22/23 06:18
Total/NA	Analysis	537.1		1	45077	UKDT	EA POM	06/22/23 20:25

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-51797-12
Date Collected: 06/19/23 10:29
Matrix: Water
Date Received: 06/21/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			46697	XTD8	EA POM	07/10/23 05:10
Total/NA	Analysis	533		1	46893	UKDT	EA POM	07/12/23 01:37
Total/NA	Prep	537.1 DW			44996	US1B	EA POM	06/22/23 06:18
Total/NA	Analysis	537.1		1	45077	UKDT	EA POM	06/22/23 20:34

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

Accreditation/Certification Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

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
Hawaii	State	CA00006	02-29-24

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
525.2	525.2	Drinking Water	1-Methylnaphthalene
525.2	525.2	Drinking Water	2,4'-DDD
525.2	525.2	Drinking Water	2,4'-DDE
525.2	525.2	Drinking Water	2,4'-DDT
525.2	525.2	Drinking Water	2,4-Dinitrotoluene
525.2	525.2	Drinking Water	2,6-Dinitrotoluene
525.2	525.2	Drinking Water	2-Methylnaphthalene
525.2	525.2	Drinking Water	4,4'-DDD
525.2	525.2	Drinking Water	4,4'-DDE
525.2	525.2	Drinking Water	4,4'-DDT
525.2	525.2	Drinking Water	Acenaphthene
525.2	525.2	Drinking Water	Acenaphthylene
525.2	525.2	Drinking Water	Acetochlor
525.2	525.2	Drinking Water	alpha-BHC
525.2	525.2	Drinking Water	alpha-Chlordane
525.2	525.2	Drinking Water	Anthracene
525.2	525.2	Drinking Water	Benz(a)anthracene
525.2	525.2	Drinking Water	Benzo[b]fluoranthene
525.2	525.2	Drinking Water	Benzo[g,h,i]perylene
525.2	525.2	Drinking Water	Benzo[k]fluoranthene
525.2	525.2	Drinking Water	beta-BHC
525.2	525.2	Drinking Water	Bromacil
525.2	525.2	Drinking Water	Butylbenzylphthalate
525.2	525.2	Drinking Water	Chlorobenzilate
525.2	525.2	Drinking Water	Chloroneb
525.2	525.2	Drinking Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Drinking Water	Chlorpyrifos
525.2	525.2	Drinking Water	Chrysene
525.2	525.2	Drinking Water	delta-BHC
525.2	525.2	Drinking Water	Dibenz(a,h)anthracene
525.2	525.2	Drinking Water	Diclorvos (DDVP)
525.2	525.2	Drinking Water	Diethylphthalate
525.2	525.2	Drinking Water	Dimethylphthalate
525.2	525.2	Drinking Water	Di-n-butyl phthalate
525.2	525.2	Drinking Water	Di-n-octyl phthalate
525.2	525.2	Drinking Water	Endosulfan I (Alpha)
525.2	525.2	Drinking Water	Endosulfan II (Beta)
525.2	525.2	Drinking Water	Endosulfan sulfate
525.2	525.2	Drinking Water	Endrin aldehyde
525.2	525.2	Drinking Water	EPTC
525.2	525.2	Drinking Water	Fluoranthene
525.2	525.2	Drinking Water	Fluorene
525.2	525.2	Drinking Water	gamma-Chlordane
525.2	525.2	Drinking Water	Indeno[1,2,3-cd]pyrene
525.2	525.2	Drinking Water	Isophorone

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date

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
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Molinate
525.2	525.2	Drinking Water	Naphthalene
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Phenanthrene
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	Terbuthylazine
525.2	525.2	Drinking Water	Thiobencarb
525.2	525.2	Drinking Water	Total Permethrin (mixed isomers)
525.2	525.2	Drinking Water	trans-Nonachlor
525.2	525.2	Drinking Water	Trifluralin
533	533	Drinking Water	11-Chloroeicosafluoro-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/GenX)
533	533	Drinking Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Drinking Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)
533	533	Drinking Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Drinking Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Drinking Water	Perfluorobutanoic acid (PFBA)
533	533	Drinking Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Drinking Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Drinking Water	Perfluoropentanoic acid (PFPeA)
533	533	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
533	533	Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)
533	533	Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date

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
533	533	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
533	533	Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)
533	533	Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Water	Perfluorobutanoic acid (PFBA)
533	533	Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Water	Perfluoropentanoic acid (PFPeA)
537.1	537.1 DW	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
537.1	537.1 DW	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)

Method Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
525.2	Extraction of Semivolatile Compounds	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: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-51797-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-51797-1	MOANALUA WELLS	Drinking Water	06/19/23 10:01	06/21/23 09:20	HI0000331
380-51797-2	AIEA GULCH WELLS PUMP 2	Drinking Water	06/19/23 11:22	06/21/23 09:20	HI0000331
380-51797-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	06/19/23 10:56	06/21/23 09:20	HI0000331
380-51797-4	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	06/19/23 10:29	06/21/23 09:20	HI0000331
380-51797-9	FB MOANALUA WELLS	Water	06/19/23 10:01	06/21/23 09:20	
380-51797-10	FB AIEA GULCH WELLS PUMP 2	Water	06/19/23 11:22	06/21/23 09:20	
380-51797-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Water	06/19/23 10:56	06/21/23 09:20	
380-51797-12	FB HALAWA WELLS UNITS 1 & 2 P1	Water	06/19/23 10:29	06/21/23 09:20	

Monrovia, CA (Suite 100)
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016
Phone (626) 386-1100

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: BAILEY	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27941-2757.2
Client Contact: Dr. Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)	SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus PLUS TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	R	RA		RA	Y	N		
MOANALUA WELLS	19-Jun-2023	1001	G	Water			2		2	2	4				#1-7725 0599 0728
AIEA GULCH WELLS PUMP2	19-Jun-2023	1122	G	Water			2		2	2	4				(750A) 0.3°-0.1°=0.2°
AIEA WELLS PUMPS 1&2 (260) P2	19-Jun-2023	1056	G	Water			2		2	2	4				#2-7725 0599 1038
HALAWA WELLS UNITS 1&2 P1	19-Jun-2023	1029	G	Water			2		2	2	4				(750A) 1.0°-0.1°=0.9°
															#3-7725 0599 1621
															(750A) 0.4°-0.1°=0.3°
TB MOANALUA WELLS	19-Jun-2023	1001		Water							2				#4-7725 0599 1286
TB AIEA GULCH WELLS PUMP2	19-Jun-2023	1122		Water							2				(750A) 0.6°-0.1°=0.5°
TB AIEA WELLS PUMPS 1&2 (260)	19-Jun-2023	1056		Water							2				
TB HALAWA WELLS UNITS 1&2	19-Jun-2023	1029		Water							2				

380-51797 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FED Ex ↑

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
BAILEY	20June2023 1400	HBWS	G.REITNER	06/21/2023 09:20	EEA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: (750A) GEL-FROZEN ↑

Monrovia, CA (Suite 100)
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016
Phone (626) 386-1100

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: BAILEY	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27941-2757.2
Client Contact: Dr. Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 2 of 2
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)	SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus PLUS TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	R	RA		RA	Y	N		
MOANALUA WELLS	19-Jun-2023	1001	G	Water								3	3		#1- 7725 0599 0728
AIEA GULCH WELLS PUMP2	19-Jun-2023	1122	G	Water								3	3		(750A) 0.3°-0.1°=0.2°
AIEA WELLS PUMPS 1&2 (260) P2	19-Jun-2023	1056	G	Water								3	3		#2- 7725 0599 1038
HALAWA WELLS UNITS 1&2 P1	19-Jun-2023	1029	G	Water								3	3		(750A) 1.0°-0.1°=0.9°
															#3- 7725 0599 1621
FB MOANALUA WELLS	19-Jun-2023	1001		Water								1	1		(750A) 0.4°-0.1°=0.3°
FB AIEA GULCH WELLS PUMP2	19-Jun-2023	1122		Water								1	1		#4- 7725 0599 1286
FB AIEA WELLS PUMPS 1&2 (260)	19-Jun-2023	1056		Water								1	1		(750A) 0.6°-0.1°=0.5°
FB HALAWA WELLS UNITS 1&2	19-Jun-2023	1029		Water								1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FED EX ↑

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
BAILEY	20 JUNE 2023 1400	HBWS	G. REITNER	06/21/2023 09:20	EEA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: (750A) GEL-FROZEN ↑

Bottle Order Information

Bottle Order: *RUSH RED-HILL WEEKLY*
Bottle Order #: *2757*
Request From Client: *3/2/2023*
Date Order Posted: *7/20/2022 11:12:54AM*
Order Status: *Ready To Process*
Prepared By: *Davis Haley*
Deliver By Date: ***6/21/2023 11:59:00PM***
Lab Project Number: *38001111*
PWSID:

Order Completion Information

Creator: *Michelle Do*
Filled by:
Sent Date:
Sent Via:
Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
4	2	8	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	Normal	625 PAH	
4	4	16	Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Normal		
4	2	8	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	Normal		
4	2	8	Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	525.2_PREC - (MOD) 525plus Plus TICs	Water	Normal		
4	2	8	VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Trip Blank		
5	3	15	Plastic 250ml - Trizma	Trizma	537.1_DW_PREC - 537.1 Full List	Water	Normal		
5	3	15	Plastic 250ml – Ammonium Acetate	Ammonium Acetate	533 - All Analytes	Water	Normal		
5	1	5	Plastic 250ml - Reagent Water	None		Water	Field Blank		
5	1	5	Plastic 250ml – Ammonium Acetate	Ammonium Acetate		Water	Field Blank		
5	1	5	Plastic 250ml - Reagent Water	None		Water	Field Blank		
5	1	5	Plastic 250ml - Trizma	Trizma		Water	Field Blank		

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

Monrovia, CA (Suite 100)
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016
Phone (626) 386-1100

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: BAILEY	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27941-2757.2
Client Contact: Dr. Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)	SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus PLUS TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	R	RA		RA	Y	N		
MOANALUA WELLS	19-Jun-2023	1001	G	Water			2		2	2	4				#1-7725 0599 0728 (750A) 0.3°-0.1°=0.2°
AIEA GULCH WELLS PUMP2	19-Jun-2023	1122	G	Water			2		2	2	4				#2-7725 0599 1038 (750A) 1.0°-0.1°=0.9°
AIEA WELLS PUMPS 1&2 (260) P2	19-Jun-2023	1056	G	Water			2		2	2	4				#3-7725 0599 1621 (750A) 0.4°-0.1°=0.3°
HALAWA WELLS UNITS 1&2 P1	19-Jun-2023	1029	G	Water			2		2	2	4				#4-7725 0599 1286 (750A) 0.6°-0.1°=0.5°
TB MOANALUA WELLS	19-Jun-2023	1001		Water							2				
TB AIEA GULCH WELLS PUMP2	19-Jun-2023	1122		Water							2				
TB AIEA WELLS PUMPS 1&2 (260)	19-Jun-2023	1056		Water							2				
TB HALAWA WELLS UNITS 1&2	19-Jun-2023	1029		Water							2				

380-51797 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FED Ex ↑

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
BAILEY	20 June 2023 1400	HBWS	G. REITNER	06/21/2023 09:20	EEA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: (750A) GEL-FROZEN ↑

Monrovia, CA (Suite 100)
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016
Phone (626) 386-1100

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: BAILEY	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27941-2757.2
Client Contact: Dr. Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 2 of 2
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)	SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus PLUS TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	R	RA		RA	Y	N		
MOANALUA WELLS	19-Jun-2023	1001	G	Water								3	3		#1- 7725 0599 0728
AIEA GULCH WELLS PUMP2	19-Jun-2023	1122	G	Water								3	3		(750A) 0.3°-0.1°=0.2°
AIEA WELLS PUMPS 1&2 (260) P2	19-Jun-2023	1056	G	Water								3	3		#2- 7725 0599 1038
HALAWA WELLS UNITS 1&2 P1	19-Jun-2023	1029	G	Water								3	3		(750A) 1.0°-0.1°=0.9°
															#3- 7725 0599 1621
FB MOANALUA WELLS	19-Jun-2023	1001		Water								1	1		(750A) 0.4°-0.1°=0.3°
FB AIEA GULCH WELLS PUMP2	19-Jun-2023	1122		Water								1	1		#4- 7725 0599 1286
FB AIEA WELLS PUMPS 1&2 (260)	19-Jun-2023	1056		Water								1	1		(750A) 0.6°-0.1°=0.5°
FB HALAWA WELLS UNITS 1&2	19-Jun-2023	1029		Water								1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FED EX ↑

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
BAILEY	20JUNE2023 1400	HBWS	G. REITNER	06/21/2023 09:20	EEA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: (750A) GEL-FROZEN ↑

Bottle Order Information

Bottle Order: *RUSH RED-HILL WEEKLY*
Bottle Order #: *2757*
Request From Client: *3/2/2023*
Date Order Posted: *7/20/2022 11:12:54AM*
Order Status: *Ready To Process*
Prepared By: *Davis Haley*
Deliver By Date: ***6/21/2023 11:59:00PM***
Lab Project Number: *38001111*
PWSID:

Order Completion Information

Creator: *Michelle Do*
Filled by:
Sent Date:
Sent Via:
Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
4	2	8	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	Normal	625 PAH	
4	4	16	Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Normal		
4	2	8	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	Normal		
4	2	8	Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	525.2_PREC - (MOD) 525plus Plus TICs	Water	Normal		
4	2	8	VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Trip Blank		
5	3	15	Plastic 250ml - Trizma	Trizma	537.1_DW_PREC - 537.1 Full List	Water	Normal		
5	3	15	Plastic 250ml – Ammonium Acetate	Ammonium Acetate	533 - All Analytes	Water	Normal		
5	1	5	Plastic 250ml - Reagent Water	None		Water	Field Blank		
5	1	5	Plastic 250ml – Ammonium Acetate	Ammonium Acetate		Water	Field Blank		
5	1	5	Plastic 250ml - Reagent Water	None		Water	Field Blank		
5	1	5	Plastic 250ml - Trizma	Trizma		Water	Field Blank		

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: City & County of Honolulu

Job Number: 380-51797-1

Login Number: 51797
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

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	