eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 308
Honolulu, Hawaii 96843

Generated 4/10/2023 12:58:53 PM

JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-37894-1

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

Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis.

Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report,Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

Test results relate only to the sample(s) tested.

Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

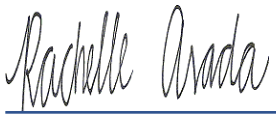
This report shall not be reproduced except in full, without the written approval of the laboratory.

This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

Compliance Statement

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

Authorization



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Authorized for release by
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Table of Contents

Definitions/Glossary

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

Job ID: 380-37894-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
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
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

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)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

Job ID: 380-37894-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative
380-37894-1

Comments
No additional comments.

Receipt
The samples were received on 2/15/2023 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.5º C.

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

LCMS
Method 533: The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommende limit: (LLCS 810-50545/2-A) for 13C2 PFDoA (48%), 13C3 HFPO-DA (40%), 13C4 PFBA (40%), 13C4 PFHpA (40%), 13C5 PFHxA (40%), 13C5 PFPeA (42%), 13C6 PFDA (30%), 13C7 PFUnA (36%), 13C8 PFOA (37%), and 13C9 PFNA (33%). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample. The target compounds all pass, however the LLCS does not pass method requirements. The Field Samples were re-extracted. The Field Blanks 380-37894-7, 380-37894-8, and 380-37894-9 cannot be re-extracted as there is no volume left.

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

Subcontract non-Sister
See attached subcontract report.

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

Subcontract Work
Methods 8015 Gas (Purgeable) LL (EAL), 8015 LL DRO/MRO/JP5/JP8: These methods were subcontracted to EMAX Laboratories Inc. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method 625 PAH Physis LL (EAL) + TICs: This method was subcontracted to Physis Environmental Laboratories. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

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

Job ID: 380-37894-1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
PWSID Number: HI0000331

Lab Sample ID: 380-37894-1

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
PWSID Number: HI0000331

Lab Sample ID: 380-37894-2

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
PWSID Number: HI0000331

Lab Sample ID: 380-37894-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.4		1.9		ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		1.9		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		1.9		ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		1.9		ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.1		1.9		ng/L	1		533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7		1.9		ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		1.9		ng/L	1		537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.7		1.9		ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.8		1.9		ng/L	1		537.1	Total/NA

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-37894-4

No Detections.

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-37894-5

No Detections.

Client Sample ID: TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-37894-6

No Detections.

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-37894-9

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-37894-1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Date Collected: 02/13/23 11:02
Date Received: 02/15/23 10:30

Lab Sample ID: 380-37894-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
2,4'-DDE	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
2,4'-DDT	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
2,4-Dinitrotoluene	ND		0.50		ug/L		02/27/23 07:10	03/03/23 08:18	1
2,6-Dinitrotoluene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
4,4'-DDD	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
4,4'-DDE	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
4,4'-DDT	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Acenaphthene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Acenaphthylene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Acetochlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Alachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
alpha-BHC	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
alpha-Chlordane	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Anthracene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Atrazine	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Benz(a)anthracene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Benzo[a]pyrene	ND		0.020		ug/L		02/27/23 07:10	03/03/23 08:18	1
Benzo[b]fluoranthene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Benzo[g,h,i]perylene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Benzo[k]fluoranthene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
beta-BHC	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Bis(2-ethylhexyl) phthalate	ND		0.59		ug/L		02/27/23 07:10	03/03/23 08:18	1
Bromacil	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Butachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Butylbenzylphthalate	ND		0.99		ug/L		02/27/23 07:10	03/03/23 08:18	1
Chlorobenzilate	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Chloroneb	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Chlorothalonil (Draconil, Bravo)	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Chlorpyrifos	ND		0.050		ug/L		02/27/23 07:10	03/03/23 08:18	1
Chrysene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
delta-BHC	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Di(2-ethylhexyl)adipate	ND		0.59		ug/L		02/27/23 07:10	03/03/23 08:18	1
Dibenz(a,h)anthracene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Diclorvos (DDVP)	ND		0.050		ug/L		02/27/23 07:10	03/03/23 08:18	1
Dieldrin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Diethylphthalate	ND		0.99		ug/L		02/27/23 07:10	03/03/23 08:18	1
Dimethylphthalate	ND		0.99		ug/L		02/27/23 07:10	03/03/23 08:18	1
Di-n-octyl phthalate	ND		2.0		ug/L		02/27/23 07:10	03/03/23 08:18	1
Di-n-butyl phthalate	ND		2.0		ug/L		02/27/23 07:10	03/03/23 08:18	1
Endosulfan I (Alpha)	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Endosulfan II (Beta)	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Endosulfan sulfate	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Endrin	ND		0.0099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Endrin aldehyde	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
EPTC	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Fluoranthene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Fluorene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Date Collected: 02/13/23 11:02
Date Received: 02/15/23 10:30

Lab Sample ID: 380-37894-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
gamma-Chlordane	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Heptachlor	ND		0.040		ug/L		02/27/23 07:10	03/03/23 08:18	1
Heptachlor epoxide (isomer B)	ND		0.020		ug/L		02/27/23 07:10	03/03/23 08:18	1
Hexachlorocyclopentadiene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Hexachlorobenzene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Indeno[1,2,3-cd]pyrene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Isophorone	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
gamma-BHC (Lindane)	ND		0.020		ug/L		02/27/23 07:10	03/03/23 08:18	1
Malathion	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Methoxychlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Metolachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Metribuzin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Molinate	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Naphthalene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Parathion	ND		0.50		ug/L		02/27/23 07:10	03/03/23 08:18	1
Phenanthrene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Propachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Pyrene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Simazine	ND		0.069		ug/L		02/27/23 07:10	03/03/23 08:18	1
Terbacil	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Thiobencarb	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		02/27/23 07:10	03/03/23 08:18	1
trans-Nonachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Trifluralin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Pendimethalin (Penoxaline)	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
Terbuthylazine	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
1-Methylnaphthalene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
2-Methylnaphthalene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
cis-Permethrin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1
trans-Permethrin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 08:18	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.52*	*T J*	*ug/L*		*19.88*	*N/A*	*02/27/23 07:10*	*03/03/23 08:18*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*110*		*70 - 130*	*02/27/23 07:10*	*03/03/23 08:18*	*1*
Triphenylphosphate	*98*		*70 - 130*	*02/27/23 07:10*	*03/03/23 08:18*	*1*
Perylene-d12	*92*		*70 - 130*	*02/27/23 07:10*	*03/03/23 08:18*	*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)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Date Collected: 02/13/23 11:02
Date Received: 02/15/23 10:30

Lab Sample ID: 380-37894-1
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
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluorooctanoic acid (PFOA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluorobutanoic acid (PFBA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluoropentanoic acid (PFPeA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*65*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C6 PFDA	*71*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C5 PFHxA	*69*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C4 PFHpA	*68*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C8 PFOA	*69*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C9 PFNA	*69*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C7 PFUnA	*71*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C2 PFDoA	*71*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C4 PFBA	*73*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C5 PFPeA	*72*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C3 PFBS	*94*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C3 PFHxS	*89*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C8 PFOS	*88*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C2-4:2-FTS	*89*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C2-6:2-FTS	*88*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*
13C2-8:2-FTS	*86*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:27*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-37894-1

Date Collected: 02/13/23 11:02
Date Received: 02/15/23 10:30

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
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Perfluorohexanoic acid (PFHxA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 19:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*110*		*70 - 130*	*02/24/23 07:29*	*02/26/23 19:45*	*1*
13C2 PFDA	*112*		*70 - 130*	*02/24/23 07:29*	*02/26/23 19:45*	*1*
d5-NEtFOSAA	*102*		*70 - 130*	*02/24/23 07:29*	*02/26/23 19:45*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Acenaphthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Acenaphthylene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Anthracene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Biphenyl	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Chrysene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Dibenzothiophene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		02/16/23 00:00	02/26/23 08:39	1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-37894-1

Date Collected: 02/13/23 11:02
Date Received: 02/15/23 10:30

Matrix: Drinking Water
PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Fluorene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Naphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Perylene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Phenanthrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1
Pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 08:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*91*		*27 - 133*	*02/16/23 00:00*	*02/26/23 08:39*	*1*
(d10-Phenanthrene)	*103*		*43 - 129*	*02/16/23 00:00*	*02/26/23 08:39*	*1*
(d12-Chrysene)	*109*		*52 - 144*	*02/16/23 00:00*	*02/26/23 08:39*	*1*
(d12-Perylene)	*98*		*36 - 161*	*02/16/23 00:00*	*02/26/23 08:39*	*1*
(d8-Naphthalene)	*81*		*25 - 125*	*02/16/23 00:00*	*02/26/23 08:39*	*1*

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			02/17/23 16:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*85*		*60 - 140*		*02/17/23 16:05*	*1*

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.028		mg/L			02/20/23 15:50	1
JP5	ND	U	0.056		mg/L			02/20/23 15:50	1
JP8	ND	U	0.056		mg/L			02/20/23 15:50	1
MOTOR OIL	ND	U	0.056		mg/L			02/20/23 15:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE	*83*		*60 - 130*		*02/20/23 15:50*	*1*
HEXACOSANE	*87*		*60 - 130*		*02/20/23 15:50*	*1*

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-37894-2

Date Collected: 02/13/23 10:32
Date Received: 02/15/23 10:30

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
2,4'-DDE	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
2,4'-DDT	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
2,4-Dinitrotoluene	ND		0.50		ug/L		02/27/23 07:10	03/03/23 08:44	1
2,6-Dinitrotoluene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
4,4'-DDD	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
4,4'-DDE	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
4,4'-DDT	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Acenaphthene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Acenaphthylene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1

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

Job ID: 380-37894-1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Date Collected: 02/13/23 10:32
Date Received: 02/15/23 10:30

Lab Sample ID: 380-37894-2
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetochlor	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Alachlor	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
alpha-BHC	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
alpha-Chlordane	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Anthracene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Atrazine	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Benz(a)anthracene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Benzo[a]pyrene	ND		0.020		ug/L		02/27/23 07:10	03/03/23 08:44	1
Benzo[b]fluoranthene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Benzo[g,h,i]perylene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Benzo[k]fluoranthene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
beta-BHC	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Bis(2-ethylhexyl) phthalate	ND		0.60		ug/L		02/27/23 07:10	03/03/23 08:44	1
Bromacil	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Butachlor	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Butylbenzylphthalate	ND		1.0		ug/L		02/27/23 07:10	03/03/23 08:44	1
Chlorobenzilate	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Chloroneb	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Chlorothalonil (Draconil, Bravo)	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Chlorpyrifos	ND		0.050		ug/L		02/27/23 07:10	03/03/23 08:44	1
Chrysene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
delta-BHC	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Di(2-ethylhexyl)adipate	ND		0.60		ug/L		02/27/23 07:10	03/03/23 08:44	1
Dibenz(a,h)anthracene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Diclorvos (DDVP)	ND		0.050		ug/L		02/27/23 07:10	03/03/23 08:44	1
Dieldrin	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Diethylphthalate	ND		1.0		ug/L		02/27/23 07:10	03/03/23 08:44	1
Dimethylphthalate	ND		1.0		ug/L		02/27/23 07:10	03/03/23 08:44	1
Di-n-octyl phthalate	ND		2.0		ug/L		02/27/23 07:10	03/03/23 08:44	1
Di-n-butyl phthalate	ND		2.0		ug/L		02/27/23 07:10	03/03/23 08:44	1
Endosulfan I (Alpha)	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Endosulfan II (Beta)	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Endosulfan sulfate	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Endrin	ND		0.010		ug/L		02/27/23 07:10	03/03/23 08:44	1
Endrin aldehyde	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
EPTC	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Fluoranthene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Fluorene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
gamma-Chlordane	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Heptachlor	ND		0.040		ug/L		02/27/23 07:10	03/03/23 08:44	1
Heptachlor epoxide (isomer B)	ND		0.020		ug/L		02/27/23 07:10	03/03/23 08:44	1
Hexachlorocyclopentadiene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Hexachlorobenzene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Indeno[1,2,3-cd]pyrene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Isophorone	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
gamma-BHC (Lindane)	ND		0.020		ug/L		02/27/23 07:10	03/03/23 08:44	1
Malathion	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Methoxychlor	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Date Collected: 02/13/23 10:32
Date Received: 02/15/23 10:30

Lab Sample ID: 380-37894-2
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Metolachlor	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Metribuzin	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Molinate	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Naphthalene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Parathion	ND		0.50		ug/L		02/27/23 07:10	03/03/23 08:44	1
Phenanthrene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Propachlor	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Pyrene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Simazine	ND		0.070		ug/L		02/27/23 07:10	03/03/23 08:44	1
Terbacil	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Thiobencarb	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		02/27/23 07:10	03/03/23 08:44	1
trans-Nonachlor	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Trifluralin	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Pendimethalin (Penoxaline)	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
Terbuthylazine	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
1-Methylnaphthalene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
2-Methylnaphthalene	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
cis-Permethrin	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1
trans-Permethrin	ND		0.10		ug/L		02/27/23 07:10	03/03/23 08:44	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.58*	*T J*	*ug/L*		*3.89*	*N/A*	*02/27/23 07:10*	*03/03/23 08:44*	*1*
Unknown	*0.69*	*T J*	*ug/L*		*5.75*	*N/A*	*02/27/23 07:10*	*03/03/23 08:44*	*1*
Unknown	*0.68*	*T J*	*ug/L*		*7.11*	*N/A*	*02/27/23 07:10*	*03/03/23 08:44*	*1*
1,1,1,5,7,7,7-Heptamethyl-3,3-bis(trimethylsiloxy)tetrasilox	*0.77*	*T J N*	*ug/L*		*8.54*	*38147-00-1*	*02/27/23 07:10*	*03/03/23 08:44*	*1*
Unknown	*0.67*	*T J*	*ug/L*		*9.91*	*N/A*	*02/27/23 07:10*	*03/03/23 08:44*	*1*
Unknown	*0.58*	*T J*	*ug/L*		*14.42*	*N/A*	*02/27/23 07:10*	*03/03/23 08:44*	*1*
Unknown	*0.76*	*T J*	*ug/L*		*15.36*	*N/A*	*02/27/23 07:10*	*03/03/23 08:44*	*1*
Unknown	*0.61*	*T J*	*ug/L*		*16.23*	*N/A*	*02/27/23 07:10*	*03/03/23 08:44*	*1*
Unknown	*0.65*	*T J*	*ug/L*		*17.05*	*N/A*	*02/27/23 07:10*	*03/03/23 08:44*	*1*
Unknown	*0.64*	*T J*	*ug/L*		*17.68*	*N/A*	*02/27/23 07:10*	*03/03/23 08:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*109*		*70 - 130*	*02/27/23 07:10*	*03/03/23 08:44*	*1*
Triphenylphosphate	*98*		*70 - 130*	*02/27/23 07:10*	*03/03/23 08:44*	*1*
Perylene-d12	*89*		*70 - 130*	*02/27/23 07:10*	*03/03/23 08:44*	*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)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Date Collected: 02/13/23 10:32
Date Received: 02/15/23 10:30

Lab Sample ID: 380-37894-2
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
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluorooctanoic acid (PFOA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluorobutanoic acid (PFBA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluoropentanoic acid (PFPeA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*73*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C6 PFDA	*76*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C5 PFHxA	*73*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C4 PFHpA	*75*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C8 PFOA	*75*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C9 PFNA	*74*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C7 PFUnA	*75*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C2 PFDoA	*77*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C4 PFBA	*77*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C5 PFPeA	*75*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C3 PFBS	*97*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C3 PFHxS	*103*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C8 PFOS	*91*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C2-4:2-FTS	*98*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C2-6:2-FTS	*97*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*
13C2-8:2-FTS	*94*		*50 - 200*	*03/10/23 06:24*	*03/13/23 20:41*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-37894-2

Date Collected: 02/13/23 10:32
Date Received: 02/15/23 10:30

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
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Perfluorooctanoic acid (PFOA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Perfluorotetradecanoic acid (PFTA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 00:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*114*		*70 - 130*	*02/24/23 07:41*	*02/26/23 00:58*	*1*
13C2 PFDA	*114*		*70 - 130*	*02/24/23 07:41*	*02/26/23 00:58*	*1*
d5-NEtFOSAA	*112*		*70 - 130*	*02/24/23 07:41*	*02/26/23 00:58*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Acenaphthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Acenaphthylene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Anthracene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Biphenyl	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Chrysene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Dibenzothiophene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		02/16/23 00:00	02/26/23 10:22	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-37894-2

Date Collected: 02/13/23 10:32
Date Received: 02/15/23 10:30

Matrix: Drinking Water
PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Fluorene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Naphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Perylene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Phenanthrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1
Pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 10:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*96*		*27 - 133*	*02/16/23 00:00*	*02/26/23 10:22*	*1*
(d10-Phenanthrene)	*105*		*43 - 129*	*02/16/23 00:00*	*02/26/23 10:22*	*1*
(d12-Chrysene)	*109*		*52 - 144*	*02/16/23 00:00*	*02/26/23 10:22*	*1*
(d12-Perylene)	*96*		*36 - 161*	*02/16/23 00:00*	*02/26/23 10:22*	*1*
(d8-Naphthalene)	*88*		*25 - 125*	*02/16/23 00:00*	*02/26/23 10:22*	*1*

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			02/17/23 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*84*		*60 - 140*		*02/17/23 18:30*	*1*

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.026		mg/L			02/20/23 16:09	1
JP5	ND	U	0.052		mg/L			02/20/23 16:09	1
JP8	ND	U	0.052		mg/L			02/20/23 16:09	1
MOTOR OIL	ND	U	0.052		mg/L			02/20/23 16:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE	*90*		*60 - 130*		*02/20/23 16:09*	*1*
HEXACOSANE	*104*		*60 - 130*		*02/20/23 16:09*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-37894-3

Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

Matrix: Drinking Water
PWSID Number: HI0000331

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

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.83*	*T J*	*ug/L*		*5.76*	*N/A*	*02/27/23 07:10*	*03/03/23 14:59*	*1*
Phenol, 2,4-bis(1,1-dimethylethyl)-	*1.2*	*T J N*	*ug/L*		*5.99*	*96-76-4*	*02/27/23 07:10*	*03/03/23 14:59*	*1*
Unknown	*0.84*	*T J*	*ug/L*		*7.12*	*N/A*	*02/27/23 07:10*	*03/03/23 14:59*	*1*
Unknown	*0.82*	*T J*	*ug/L*		*8.55*	*N/A*	*02/27/23 07:10*	*03/03/23 14:59*	*1*
Unknown	*0.74*	*T J*	*ug/L*		*9.91*	*N/A*	*02/27/23 07:10*	*03/03/23 14:59*	*1*
Unknown	*0.75*	*T J*	*ug/L*		*15.36*	*N/A*	*02/27/23 07:10*	*03/03/23 14:59*	*1*
Unknown	*0.64*	*T J*	*ug/L*		*16.24*	*N/A*	*02/27/23 07:10*	*03/03/23 14:59*	*1*
Unknown	*0.67*	*T J*	*ug/L*		*17.05*	*N/A*	*02/27/23 07:10*	*03/03/23 14:59*	*1*
Unknown	*0.68*	*T J*	*ug/L*		*17.68*	*N/A*	*02/27/23 07:10*	*03/03/23 14:59*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

Lab Sample ID: 380-37894-3
Matrix: Drinking Water
PWSID Number: HI0000331

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

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	*0.73*	*T J*	*ug/L*		*19.83*	*N/A*	*02/27/23 07:10*	*03/03/23 14:59*	*1*

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	*99*		*70 - 130*	*02/27/23 07:10*	*03/03/23 14:59*	*1*
Triphenylphosphate	*93*		*70 - 130*	*02/27/23 07:10*	*03/03/23 14:59*	*1*
Perylene-d12	*88*		*70 - 130*	*02/27/23 07:10*	*03/03/23 14:59*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
2,4'-DDE	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
2,4'-DDT	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
2,4-Dinitrotoluene	ND		0.49		ug/L		02/27/23 07:10	03/03/23 09:37	1
2,6-Dinitrotoluene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
4,4'-DDD	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
4,4'-DDE	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
4,4'-DDT	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Acenaphthene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Acenaphthylene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Acetochlor	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Alachlor	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
alpha-BHC	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
alpha-Chlordane	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Anthracene	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Atrazine	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Benz(a)anthracene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Benzo[a]pyrene	ND		0.020		ug/L		02/27/23 07:10	03/03/23 09:37	1
Benzo[b]fluoranthene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Benzo[g,h,i]perylene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Benzo[k]fluoranthene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
beta-BHC	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Bis(2-ethylhexyl) phthalate	ND		0.59		ug/L		02/27/23 07:10	03/03/23 09:37	1
Bromacil	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Butachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Butylbenzylphthalate	ND		0.99		ug/L		02/27/23 07:10	03/03/23 09:37	1
Chlorobenzilate	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Chloroneb	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Chlorothalonil (Draconil, Bravo)	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Chlorpyrifos	ND	*3	0.049		ug/L		02/27/23 07:10	03/03/23 09:37	1
Chrysene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
delta-BHC	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Di(2-ethylhexyl)adipate	ND		0.59		ug/L		02/27/23 07:10	03/03/23 09:37	1
Dibenz(a,h)anthracene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Diclorvos (DDVP)	ND		0.049		ug/L		02/27/23 07:10	03/03/23 09:37	1
Dieldrin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Diethylphthalate	ND		0.99		ug/L		02/27/23 07:10	03/03/23 09:37	1
Dimethylphthalate	ND		0.99		ug/L		02/27/23 07:10	03/03/23 09:37	1
Di-n-octyl phthalate	ND		2.0		ug/L		02/27/23 07:10	03/03/23 09:37	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Lab Sample ID: 380-37894-3
Date Collected: 02/13/23 10:07
Matrix: Drinking Water
Date Received: 02/15/23 10:30
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND	*3	2.0		ug/L		02/27/23 07:10	03/03/23 09:37	1
Endosulfan I (Alpha)	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Endosulfan II (Beta)	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Endosulfan sulfate	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Endrin	ND		0.0099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Endrin aldehyde	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
EPTC	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Fluoranthene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Fluorene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
gamma-Chlordane	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Heptachlor	ND	*3	0.040		ug/L		02/27/23 07:10	03/03/23 09:37	1
Heptachlor epoxide (isomer B)	ND		0.020		ug/L		02/27/23 07:10	03/03/23 09:37	1
Hexachlorocyclopentadiene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Hexachlorobenzene	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Indeno[1,2,3-cd]pyrene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Isophorone	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
gamma-BHC (Lindane)	ND	*3	0.020		ug/L		02/27/23 07:10	03/03/23 09:37	1
Malathion	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Methoxychlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Metolachlor	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Metribuzin	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Molinate	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Naphthalene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Parathion	ND	*3	0.49		ug/L		02/27/23 07:10	03/03/23 09:37	1
Phenanthrene	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Propachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Pyrene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Simazine	ND	*3	0.069		ug/L		02/27/23 07:10	03/03/23 09:37	1
Terbacil	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Thiobencarb	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		02/27/23 07:10	03/03/23 09:37	1
trans-Nonachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Trifluralin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Pendimethalin (Penoxaline)	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
Terbuthylazine	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
1-Methylnaphthalene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
2-Methylnaphthalene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
cis-Permethrin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1
trans-Permethrin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 09:37	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.54*	*T J*	*ug/L*		*3.89*	*N/A*	*02/27/23 07:10*	*03/03/23 09:37*	*1*
Unknown	*0.59*	*T J*	*ug/L*		*5.75*	*N/A*	*02/27/23 07:10*	*03/03/23 09:37*	*1*
Phenol, 2,4-bis(1,1-dimethylethyl)-	*1.3*	*T J N*	*ug/L*		*5.98*	*96-76-4*	*02/27/23 07:10*	*03/03/23 09:37*	*1*
Unknown	*0.57*	*T J*	*ug/L*		*7.11*	*N/A*	*02/27/23 07:10*	*03/03/23 09:37*	*1*
Unknown	*0.63*	*T J*	*ug/L*		*8.54*	*N/A*	*02/27/23 07:10*	*03/03/23 09:37*	*1*
Unknown	*0.54*	*T J*	*ug/L*		*15.36*	*N/A*	*02/27/23 07:10*	*03/03/23 09:37*	*1*
Unknown	*0.50*	*T J*	*ug/L*		*17.05*	*N/A*	*02/27/23 07:10*	*03/03/23 09:37*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

Lab Sample ID: 380-37894-3
Matrix: Drinking Water
PWSID Number: HI0000331

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

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	0.54	T J	ug/L		17.68	N/A	02/27/23 07:10	03/03/23 09:37	1
Unknown	0.93	T J	ug/L		19.82	N/A	02/27/23 07:10	03/03/23 09:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	106		70 - 130	02/27/23 07:10	03/03/23 09:37	1
Triphenylphosphate	101		70 - 130	02/27/23 07:10	03/03/23 09:37	1
Perylene-d12	97		70 - 130	02/27/23 07:10	03/03/23 09:37	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)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluorohexanesulfonic acid (PFHxS)	**2.4**		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluorohexanoic acid (PFHxA)	**2.0**		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluorooctanesulfonic acid (PFOS)	**2.1**		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluorooctanoic acid (PFOA)	**2.0**		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluorobutanoic acid (PFBA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluoropentanoic acid (PFPeA)	**2.1**		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9		ng/L		03/10/23 06:24	03/13/23 20:54	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	69		50 - 200	03/10/23 06:24	03/13/23 20:54	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-37894-3

Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

Matrix: Drinking Water
PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	71		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C5 PFHxA	77		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C4 PFHpA	73		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C8 PFOA	69		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C9 PFNA	70		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C7 PFUnA	73		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C2 PFDoA	75		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C4 PFBA	80		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C5 PFPeA	74		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C3 PFBS	104		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C3 PFHxS	102		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C8 PFOS	92		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C2-4:2-FTS	98		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C2-6:2-FTS	93		50 - 200	03/10/23 06:24	03/13/23 20:54	1
13C2-8:2-FTS	99		50 - 200	03/10/23 06:24	03/13/23 20:54	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Perfluorohexanesulfonic acid (PFHxS)	**2.7**		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Perfluorohexanoic acid (PFHxA)	**2.0**		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Perfluorooctanesulfonic acid (PFOS)	**2.7**		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Perfluorooctanoic acid (PFOA)	**2.8**		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Perfluorotetradecanoic acid (PFTA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9		ng/L		02/24/23 07:41	02/26/23 01:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	115		70 - 130	02/24/23 07:41	02/26/23 01:09	1
13C2 PFDA	113		70 - 130	02/24/23 07:41	02/26/23 01:09	1
d5-NEtFOSAA	110		70 - 130	02/24/23 07:41	02/26/23 01:09	1

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

Job ID: 380-37894-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

Lab Sample ID: 380-37894-3
Matrix: Drinking Water
PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Acenaphthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Acenaphthylene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Anthracene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Biphenyl	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Chrysene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Dibenzothiophene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		02/16/23 00:00	02/26/23 12:05	1
Fluoranthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Fluorene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Naphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Perylene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Phenanthrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1
Pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 12:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*91*		*27 - 133*	*02/16/23 00:00*	*02/26/23 12:05*	*1*
(d10-Phenanthrene)	*100*		*43 - 129*	*02/16/23 00:00*	*02/26/23 12:05*	*1*
(d12-Chrysene)	*102*		*52 - 144*	*02/16/23 00:00*	*02/26/23 12:05*	*1*
(d12-Perylene)	*90*		*36 - 161*	*02/16/23 00:00*	*02/26/23 12:05*	*1*
(d8-Naphthalene)	*83*		*25 - 125*	*02/16/23 00:00*	*02/26/23 12:05*	*1*

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			02/17/23 19:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*81*		*60 - 140*		*02/17/23 19:06*	*1*

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			02/20/23 16:27	1
JP5	ND	U	0.051		mg/L			02/20/23 16:27	1
JP8	ND	U	0.051		mg/L			02/20/23 16:27	1
MOTOR OIL	ND	U	0.051		mg/L			02/20/23 16:27	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-37894-3

Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

Matrix: Drinking Water
PWSID Number: HI0000331

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE	*83*		*60 - 130*		*02/20/23 16:27*	*1*
HEXACOSANE	*93*		*60 - 130*		*02/20/23 16:27*	*1*

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-37894-4

Date Collected: 02/13/23 11:02
Date Received: 02/15/23 10:30

Matrix: Water

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			02/17/23 19:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*82*		*60 - 140*		*02/17/23 19:42*	*1*

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-37894-5

Date Collected: 02/13/23 10:32
Date Received: 02/15/23 10:30

Matrix: Water

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			02/17/23 20:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*82*		*60 - 140*		*02/17/23 20:18*	*1*

Client Sample ID: TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-37894-6

Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

Matrix: Water

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			02/17/23 20:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*81*		*60 - 140*		*02/17/23 20:54*	*1*

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-37894-9

Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

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)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1

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

Job ID: 380-37894-1

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)
Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

Lab Sample ID: 380-37894-9
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluorooctanoic acid (PFOA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluorobutanoic acid (PFBA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluoropentanoic acid (PFPeA)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9		ng/L		03/07/23 06:27	03/09/23 04:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*87*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C6 PFDA	*76*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C5 PFHxA	*81*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C4 PFHpA	*83*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C8 PFOA	*83*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C9 PFNA	*82*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C7 PFUnA	*71*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C2 PFDoA	*69*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C4 PFBA	*82*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C5 PFPeA	*81*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C3 PFBS	*83*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C3 PFHxS	*82*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C8 PFOS	*76*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C2-4:2-FTS	*79*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C2-6:2-FTS	*78*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*
13C2-8:2-FTS	*78*		*50 - 200*	*03/07/23 06:27*	*03/09/23 04:25*	*1*

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

Job ID: 380-37894-1

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)
Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

Lab Sample ID: 380-37894-9
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Perfluorooctanoic acid (PFOA)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Perfluorotetradecanoic acid (PFTA)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9		ng/L		02/27/23 06:15	02/28/23 07:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*100*		*70 - 130*	*02/27/23 06:15*	*02/28/23 07:10*	*1*
13C2 PFDA	*90*		*70 - 130*	*02/27/23 06:15*	*02/28/23 07:10*	*1*
d5-NEtFOSAA	*87*		*70 - 130*	*02/27/23 06:15*	*02/28/23 07:10*	*1*
13C3 HFPO-DA	*90*		*70 - 130*	*02/27/23 06:15*	*02/28/23 07:10*	*1*

Action Limit Summary

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

Job ID: 380-37894-1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-37894-1

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 - RA	ND		ug/L	2	0.099	525.2	Total/NA
Atrazine - RA	ND		ug/L	3	0.099	525.2	Total/NA
Benzo[a]pyrene - RA	ND		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate - RA	ND		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate - RA	ND		ug/L	400	0.59	525.2	Total/NA
Endrin - RA	ND		ug/L	2	0.0099	525.2	Total/NA
Heptachlor - RA	ND		ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B) - RA	ND		ug/L	0.2	0.020	525.2	Total/NA
Hexachlorocyclopentadiene - RA	ND		ug/L	50	0.099	525.2	Total/NA
Hexachlorobenzene - RA	ND		ug/L	1	0.099	525.2	Total/NA
gamma-BHC (Lindane) - RA	ND		ug/L	0.2	0.020	525.2	Total/NA
Methoxychlor - RA	ND		ug/L	40	0.099	525.2	Total/NA
Simazine - RA	ND		ug/L	4	0.069	525.2	Total/NA

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-37894-2

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 - RA	ND		ug/L	2	0.10	525.2	Total/NA
Atrazine - RA	ND		ug/L	3	0.10	525.2	Total/NA
Benzo[a]pyrene - RA	ND		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate - RA	ND		ug/L	6	0.60	525.2	Total/NA
Di(2-ethylhexyl)adipate - RA	ND		ug/L	400	0.60	525.2	Total/NA
Endrin - RA	ND		ug/L	2	0.010	525.2	Total/NA
Heptachlor - RA	ND		ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B) - RA	ND		ug/L	0.2	0.020	525.2	Total/NA
Hexachlorocyclopentadiene - RA	ND		ug/L	50	0.10	525.2	Total/NA
Hexachlorobenzene - RA	ND		ug/L	1	0.10	525.2	Total/NA
gamma-BHC (Lindane) - RA	ND		ug/L	0.2	0.020	525.2	Total/NA
Methoxychlor - RA	ND		ug/L	40	0.10	525.2	Total/NA
Simazine - RA	ND		ug/L	4	0.070	525.2	Total/NA

Action Limit Summary

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

Job ID: 380-37894-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-37894-3

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 - RA	ND	*3	ug/L	2	0.099	525.2	Total/NA
Atrazine - RA	ND	*3	ug/L	3	0.099	525.2	Total/NA
Benzo[a]pyrene - RA	ND		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate - RA	ND		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate - RA	ND		ug/L	400	0.59	525.2	Total/NA
Endrin - RA	ND		ug/L	2	0.0099	525.2	Total/NA
Heptachlor - RA	ND	*3	ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B) - RA	ND		ug/L	0.2	0.020	525.2	Total/NA
Hexachlorocyclopentadiene - RA	ND		ug/L	50	0.099	525.2	Total/NA
Hexachlorobenzene - RA	ND	*3	ug/L	1	0.099	525.2	Total/NA
gamma-BHC (Lindane) - RA	ND	*3	ug/L	0.2	0.020	525.2	Total/NA
Methoxychlor - RA	ND		ug/L	40	0.099	525.2	Total/NA
Simazine - RA	ND	*3	ug/L	4	0.069	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-37894-1

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

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

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	TPP	PRY
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-37894-1 - RA	AIEA GULCH WELLS PUMP 2 (	110	98	92
380-37894-2 - RA	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	109	98	89
380-37894-2 DU - RA	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	103	100	88
380-37894-3 - RA	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	106	101	97
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	99	93	88

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	TPP	PRY
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
810-53831-E-1-A MS - RA	Matrix Spike	111	102	89
LCS 810-49442/2-A	Lab Control Sample	96	100	90
LLCS 810-49442/3-A	Lab Control Sample	100	98	90
MB 810-49442/1-A - RA	Method Blank	88	94 *3	81 *3
MB 810-49442/1-A	Method Blank	96	94	89

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)		
		PFHxA	PFDA	d5NEFOS
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-37894-1	AIEA GULCH WELLS PUMP 2 (	110	112	102
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	114	114	112
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	115	113	110

Surrogate Legend

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

Surrogate Summary

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

Job ID: 380-37894-1

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	PFHxA (70-130)	PFDA (70-130)	d5NEFOS (70-130)	HFPODA (70-130)
380-37894-9	FB: HALAWA WELLS UNITS 1&	100	90	87	90
810-53482-B-1-A DU	Duplicate	109	113	98	
810-53529-Z-1-A DU	Duplicate	92	92	94	98
810-53735-B-1-A MS	Matrix Spike	91	97	89	102
810-53841-B-1-A LMS	Matrix Spike	110	111	106	
810-53932-B-1-A MS	Matrix Spike	115	111	106	
810-53932-D-3-A DU	Duplicate	108	106	92	
LCS 810-49187/11-A	Lab Control Sample	106	114	103	
LCS 810-49433/3-A	Lab Control Sample	96	98	92	99
LLCS 810-49184/2-A	Lab Control Sample	112	115	106	
LLCS 810-49187/9-A	Lab Control Sample	117	112	103	
LLCS 810-49433/2-A	Lab Control Sample	100	103	93	105
MBL 810-49184/1-A	Method Blank	110	105	84	
MBL 810-49187/10-A	Method Blank	108	110	102	
MBL 810-49433/1-A	Method Blank	97	93	86	91

Surrogate Legend

PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
d5NEFOS = d5-NEtFOSAA
HFPODA = 13C3 HFPO-DA

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

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

		Percent Surrogate Recovery (Acceptance Limits)				
Lab Sample ID	Client Sample ID	Acenapht (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
104254-B1	Method Blank	88	93	96	86	93
104254-BS1	Lab Control Sample	104	106	105	96	108
104254-BS2	Lab Control Sample Dup	98	106	108	88	106

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

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

		Percent Surrogate Recovery (Acceptance Limits)				
Lab Sample ID	Client Sample ID	Acenapht (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
380-37894-1	AIEA GULCH WELLS PUMP 2 (	91	103	109	81	98
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	96	105	109	88	96
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	91	100	102	83	90

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)

(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
380-37894-1	AIEA GULCH WELLS PUMP 2 (	85
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	84
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	81

Surrogate Legend
BFB = BROMOFLUOROBENZENE

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
23B194-01M	Matrix Spike	106
23B194-01S	Matrix Spike Duplicate	102

Surrogate Legend
BFB = BROMOFLUOROBENZENE

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	
23VG39B12B	Method Blank	

Surrogate Legend
BFB = BROMOFLUOROBENZENE

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(70-130)
23VG39B12C	LCD	110
23VG39B12L	Lab Control Sample	118

Surrogate Legend
BFB = BROMOFLUOROBENZENE

Surrogate Summary

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

Job ID: 380-37894-1

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
380-37894-4	TB:AIEA GULCH WELLS P2 (33	82
380-37894-5	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	82
380-37894-6	TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	81

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSA
Lab Sample ID	Client Sample ID	(60-130)	(60-130)
380-37894-1	AIEA GULCH WELLS PUMP 2 (	83	87
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	90	104
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	83	93

Surrogate Legend

BB = BROMOBENZENE
HEXACOSANE = HEXACOSANE

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSA
Lab Sample ID	Client Sample ID	(60-130)	(60-130)
23DSB031WC	LCD	86	105
23DSB031WL	Lab Control Sample	108	99
23J5B031WC	LCD	101	101
23J5B031WL	Lab Control Sample	96	94
23J8B031WC	LCD	107	97
23J8B031WL	Lab Control Sample	109	106

Surrogate Legend

BB = BROMOBENZENE
HEXACOSANE = HEXACOSANE

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSA
Lab Sample ID	Client Sample ID		
23DSB031WB	Method Blank		

Surrogate Legend

BB = BROMOBENZENE
HEXACOSANE = HEXACOSANE

Isotope Dilution Summary

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

Job ID: 380-37894-1

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)
380-37894-1	AIEA GULCH WELLS PUMP 2 (	65	71	69	68	69	69	71	71
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	73	76	73	75	75	74	75	77
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	69	71	77	73	69	70	73	75
380-37894-3 DU	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	65	63	74	65	65	65	62	63

		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)
380-37894-1	AIEA GULCH WELLS PUMP 2 (	73	72	94	89	88	89	88	86
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	77	75	97	103	91	98	97	94
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	80	74	104	102	92	98	93	99
380-37894-3 DU	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	76	76	93	99	89	88	90	90

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)
380-37894-9	FB: HALAWA WELLS UNITS 1&	87	76	81	83	83	82	71	69
810-54045-E-2-A LMS	Matrix Spike	82	84	93	87	89	87	82	84
LLCS 810-50545/2-A	Lab Control Sample	40 *5-	30 *5-	40 *5-	40 *5-	37 *5-	33 *5-	36 *5-	48 *5-
LLCS 810-51061/2-A	Lab Control Sample	98	98	103	93	98	102	96	95
MBL 810-50545/1-A	Method Blank	85	90	93	94	94	94	88	89
MBL 810-51061/1-A	Method Blank	93	93	100	97	93	99	91	88

Isotope Dilution Summary

Client: City & County of Honolulu
Job ID: 380-37894-1
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	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-37894-9	FB: HALAWA WELLS UNITS 1&	82	81	83	82	76	79	78	78
810-54045-E-2-A LMS	Matrix Spike	93	118	98	91	92	114	112	115
LLCS 810-50545/2-A	Lab Control Sample	40 *5-	42 *5-	104	107	94	99	101	99
LLCS 810-51061/2-A	Lab Control Sample	102	99	108	97	95	102	98	97
MBL 810-50545/1-A	Method Blank	94	95	93	91	90	94	92	92
MBL 810-51061/1-A	Method Blank	94	91	90	95	87	102	92	89

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 810-49442/1-A
Matrix: Water
Analysis Batch: 50096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49442

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
2,4'-DDE	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
2,4'-DDT	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
2,4-Dinitrotoluene	ND		0.49		ug/L		02/27/23 07:10	03/03/23 01:38	1
2,6-Dinitrotoluene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
4,4'-DDD	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
4,4'-DDE	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
4,4'-DDT	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Acenaphthene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Acenaphthylene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Acetochlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Alachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
alpha-BHC	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
alpha-Chlordane	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Anthracene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Atrazine	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Benz(a)anthracene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Benzo[a]pyrene	ND		0.020		ug/L		02/27/23 07:10	03/03/23 01:38	1
Benzo[b]fluoranthene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Benzo[g,h,i]perylene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Benzo[k]fluoranthene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
beta-BHC	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Bis(2-ethylhexyl) phthalate	ND		0.59		ug/L		02/27/23 07:10	03/03/23 01:38	1
Bromacil	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Butachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Butylbenzylphthalate	ND		0.99		ug/L		02/27/23 07:10	03/03/23 01:38	1
Chlorobenzilate	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Chloroneb	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Chlorothalonil (Draconil, Bravo)	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Chlorpyrifos	ND		0.049		ug/L		02/27/23 07:10	03/03/23 01:38	1
Chrysene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
delta-BHC	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Di(2-ethylhexyl)adipate	ND		0.59		ug/L		02/27/23 07:10	03/03/23 01:38	1
Dibenz(a,h)anthracene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Diclorvos (DDVP)	ND		0.049		ug/L		02/27/23 07:10	03/03/23 01:38	1
Dieldrin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Diethylphthalate	ND		0.99		ug/L		02/27/23 07:10	03/03/23 01:38	1
Dimethylphthalate	ND		0.99		ug/L		02/27/23 07:10	03/03/23 01:38	1
Di-n-octyl phthalate	ND		2.0		ug/L		02/27/23 07:10	03/03/23 01:38	1
Di-n-butyl phthalate	ND		2.0		ug/L		02/27/23 07:10	03/03/23 01:38	1
Endosulfan I (Alpha)	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Endosulfan II (Beta)	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Endosulfan sulfate	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Endrin	ND		0.0099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Endrin aldehyde	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
EPTC	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Fluoranthene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Fluorene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1

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

Lab Sample ID: MB 810-49442/1-A
Matrix: Water
Analysis Batch: 50096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49442

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
gamma-Chlordane	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Heptachlor	ND		0.040		ug/L		02/27/23 07:10	03/03/23 01:38	1
Heptachlor epoxide (isomer B)	ND		0.020		ug/L		02/27/23 07:10	03/03/23 01:38	1
Hexachlorocyclopentadiene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Hexachlorobenzene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Indeno[1,2,3-cd]pyrene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Isophorone	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
gamma-BHC (Lindane)	ND		0.020		ug/L		02/27/23 07:10	03/03/23 01:38	1
Malathion	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Methoxychlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Metolachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Metribuzin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Molinate	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Naphthalene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Parathion	ND		0.49		ug/L		02/27/23 07:10	03/03/23 01:38	1
Phenanthrene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Propachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Pyrene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Simazine	ND		0.069		ug/L		02/27/23 07:10	03/03/23 01:38	1
Terbacil	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Thiobencarb	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		02/27/23 07:10	03/03/23 01:38	1
trans-Nonachlor	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Trifluralin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Pendimethalin (Penoxaline)	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
Terbuthylazine	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
1-Methylnaphthalene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
2-Methylnaphthalene	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
cis-Permethrin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1
trans-Permethrin	ND		0.099		ug/L		02/27/23 07:10	03/03/23 01:38	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Decane, 2,3,5-trimethyl-	*3.49*	*T J N*	*ug/L*		*3.65*	*62238-11-3*	*02/27/23 07:10*	*03/03/23 01:38*	*1*
Benzenesulfonamide, N,4-dimethyl-	*0.582*	*T J N*	*ug/L*		*7.45*	*640-61-9*	*02/27/23 07:10*	*03/03/23 01:38*	*1*
Unknown	*0.510*	*T J*	*ug/L*		*19.02*	*N/A*	*02/27/23 07:10*	*03/03/23 01:38*	*1*
Unknown	*0.690*	*T J*	*ug/L*		*19.88*	*N/A*	*02/27/23 07:10*	*03/03/23 01:38*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*96*		*70 - 130*	*02/27/23 07:10*	*03/03/23 01:38*	*1*
Triphenylphosphate	*94*		*70 - 130*	*02/27/23 07:10*	*03/03/23 01:38*	*1*
Perylene-d12	*89*		*70 - 130*	*02/27/23 07:10*	*03/03/23 01:38*	*1*

Lab Sample ID: LCS 810-49442/2-A
Matrix: Water
Analysis Batch: 50096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49442

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4'-DDD			1.99	2.14		ug/L		108	70 - 130		

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

Lab Sample ID: LCS 810-49442/2-A
Matrix: Water
Analysis Batch: 50096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49442

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDE	1.99	2.32		ug/L		117	70 - 130
2,4'-DDT	1.99	2.04		ug/L		103	70 - 130
2,4-Dinitrotoluene	1.99	1.46		ug/L		73	70 - 130
2,6-Dinitrotoluene	1.99	1.44		ug/L		73	70 - 130
4,4'-DDD	1.99	2.10		ug/L		106	70 - 130
4,4'-DDE	1.99	2.23		ug/L		112	70 - 130
4,4'-DDT	1.99	1.91		ug/L		96	70 - 130
Acenaphthene	1.99	1.92		ug/L		97	70 - 130
Acenaphthylene	1.99	1.89		ug/L		95	70 - 130
Acetochlor	1.99	2.01		ug/L		101	70 - 130
Alachlor	1.99	2.07		ug/L		104	70 - 130
alpha-BHC	1.99	1.99		ug/L		100	70 - 130
alpha-Chlordane	1.99	2.19		ug/L		110	70 - 130
Anthracene	1.99	1.64		ug/L		83	70 - 130
Atrazine	1.99	2.04		ug/L		103	70 - 130
Benz(a)anthracene	1.99	1.81		ug/L		91	70 - 130
Benzo[a]pyrene	1.99	1.58		ug/L		80	70 - 130
Benzo[b]fluoranthene	1.99	1.78		ug/L		90	70 - 130
Benzo[g,h,i]perylene	1.99	1.58		ug/L		80	70 - 130
Benzo[k]fluoranthene	1.99	1.59		ug/L		80	70 - 130
beta-BHC	1.99	2.04		ug/L		103	70 - 130
Bis(2-ethylhexyl) phthalate	1.99	1.77		ug/L		89	70 - 130
Bromacil	1.99	2.21		ug/L		112	70 - 130
Butachlor	1.99	2.34		ug/L		118	70 - 130
Butylbenzylphthalate	1.99	2.14		ug/L		108	70 - 130
Chlorobenzilate	1.99	1.94		ug/L		97	70 - 130
Chloroneb	1.99	2.21		ug/L		111	70 - 130
Chlorothalonil (Draconil, Bravo)	1.99	1.94		ug/L		97	70 - 130
Chlorpyrifos	1.99	2.28		ug/L		115	70 - 130
Chrysene	1.99	1.89		ug/L		95	70 - 130
delta-BHC	1.99	1.91		ug/L		96	70 - 130
Di(2-ethylhexyl)adipate	1.99	1.82		ug/L		92	70 - 130
Dibenz(a,h)anthracene	1.99	1.54		ug/L		77	70 - 130
Diclorvos (DDVP)	1.99	1.93		ug/L		97	70 - 130
Dieldrin	1.99	2.12		ug/L		107	70 - 130
Diethylphthalate	1.99	1.95		ug/L		98	70 - 130
Dimethylphthalate	1.99	1.94		ug/L		98	70 - 130
Di-n-octyl phthalate	1.99	1.71	J	ug/L		86	60 - 122
Di-n-butyl phthalate	1.99	2.24		ug/L		113	70 - 130
Endosulfan I (Alpha)	1.99	2.31		ug/L		116	70 - 130
Endosulfan II (Beta)	1.99	1.94		ug/L		98	70 - 130
Endosulfan sulfate	1.99	2.04		ug/L		103	70 - 130
Endrin	1.99	1.97		ug/L		99	70 - 130
Endrin aldehyde	1.99	1.78		ug/L		90	64 - 125
EPTC	1.99	1.91		ug/L		96	70 - 130
Fluoranthene	1.99	2.40		ug/L		121	70 - 130
Fluorene	1.99	1.94		ug/L		98	70 - 130
gamma-Chlordane	1.99	2.20		ug/L		111	70 - 130
Heptachlor	1.99	2.04		ug/L		103	70 - 130

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

Lab Sample ID: LCS 810-49442/2-A
Matrix: Water
Analysis Batch: 50096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49442

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Heptachlor epoxide (isomer B)	1.99	2.21		ug/L		111	70 - 130
Hexachlorocyclopentadiene	1.99	1.56		ug/L		79	70 - 130
Hexachlorobenzene	1.99	1.82		ug/L		92	70 - 130
Indeno[1,2,3-cd]pyrene	1.99	1.52		ug/L		76	70 - 130
Isophorone	1.99	1.76		ug/L		89	70 - 130
gamma-BHC (Lindane)	1.99	1.97		ug/L		99	70 - 130
Malathion	1.99	2.11		ug/L		106	80 - 134
Methoxychlor	1.99	1.87		ug/L		94	70 - 130
Metolachlor	1.99	2.30		ug/L		116	70 - 130
Metribuzin	1.99	1.91		ug/L		96	70 - 130
Molinate	1.99	1.98		ug/L		100	70 - 130
Naphthalene	1.99	1.82		ug/L		92	70 - 130
Parathion	1.99	2.33		ug/L		117	80 - 134
Phenanthrene	1.99	1.96		ug/L		99	70 - 130
Propachlor	1.99	1.98		ug/L		100	70 - 130
Pyrene	1.99	2.32		ug/L		117	70 - 130
Simazine	1.99	2.04		ug/L		103	70 - 130
Terbacil	1.99	2.07		ug/L		104	70 - 130
Thiobencarb	1.99	2.25		ug/L		113	70 - 130
trans-Nonachlor	1.99	2.28		ug/L		115	70 - 130
Trifluralin	1.99	1.83		ug/L		92	70 - 130
Pendimethalin (Penoxaline)	1.99	2.37		ug/L		119	65 - 122
Terbuthylazine	1.99	2.07		ug/L		104	70 - 130
1-Methylnaphthalene	1.99	1.88		ug/L		95	70 - 130
2-Methylnaphthalene	1.99	1.85		ug/L		93	70 - 130
cis-Permethrin	1.99	1.75		ug/L		88	70 - 130
trans-Permethrin	1.99	1.70		ug/L		86	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*96*		*70 - 130*
Triphenylphosphate	*100*		*70 - 130*
Perylene-d12	*90*		*70 - 130*

Lab Sample ID: LLCS 810-49442/3-A
Matrix: Water
Analysis Batch: 50096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49442

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Alachlor	0.0989	0.0803	J	ug/L		81	50 - 150
Atrazine	0.0989	0.0879	J	ug/L		89	50 - 150
Benzo[a]pyrene	0.0198	0.0195	J	ug/L		99	50 - 150
Bis(2-ethylhexyl) phthalate	0.594	0.625		ug/L		105	50 - 150
Butachlor	0.0989	0.0710	J	ug/L		72	50 - 150
Di(2-ethylhexyl)adipate	0.594	0.522	J	ug/L		88	50 - 150
Dieldrin	0.0198	0.0219	J	ug/L		111	50 - 150
Endrin	0.00989	ND		ug/L		61	50 - 150
Heptachlor	0.00989	0.0110	J	ug/L		111	50 - 150
Heptachlor epoxide (isomer B)	0.00989	0.0127	J	ug/L		129	50 - 150

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

Lab Sample ID: LLCS 810-49442/3-A
Matrix: Water
Analysis Batch: 50096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49442

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorocyclopentadiene	0.0989	0.0774	J	ug/L		78	50 - 150
Hexachlorobenzene	0.0989	0.0871	J	ug/L		88	50 - 150
gamma-BHC (Lindane)	0.0198	0.0204		ug/L		103	50 - 150
Methoxychlor	0.0989	0.0690	J	ug/L		70	50 - 150
Metolachlor	0.0989	0.108		ug/L		109	50 - 150
Metribuzin	0.0989	0.0849	J	ug/L		86	50 - 150
Propachlor	0.0989	0.0905	J	ug/L		91	50 - 150
Simazine	0.0693	0.0592	J	ug/L		85	50 - 150

Surrogate	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
2-Nitro-m-xylene	*100*		*70 - 130*
Triphenylphosphate	*98*		*70 - 130*
Perylene-d12	*90*		*70 - 130*

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

Lab Sample ID: MB 810-49442/1-A
Matrix: Water
Analysis Batch: 50096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49442

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
2,4'-DDE - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
2,4'-DDT - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
2,4-Dinitrotoluene - RA	ND		0.49	ug/L		02/27/23 07:10	03/03/23 11:26	1
2,6-Dinitrotoluene - RA	ND		0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
4,4'-DDD - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
4,4'-DDE - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
4,4'-DDT - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Acenaphthene - RA	ND		0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Acenaphthylene - RA	ND		0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Acetochlor - RA	ND		0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Alachlor - RA	ND		0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
alpha-BHC - RA	ND		0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
alpha-Chlordane - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Anthracene - RA	ND		0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Atrazine - RA	ND		0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Benz(a)anthracene - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Benzo[a]pyrene - RA	ND	*3	0.020	ug/L		02/27/23 07:10	03/03/23 11:26	1
Benzo[b]fluoranthene - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Benzo[g,h,i]perylene - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Benzo[k]fluoranthene - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
beta-BHC - RA	ND		0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Bis(2-ethylhexyl) phthalate - RA	ND	*3	0.59	ug/L		02/27/23 07:10	03/03/23 11:26	1
Bromacil - RA	ND		0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Butachlor - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Butylbenzylphthalate - RA	ND	*3	0.99	ug/L		02/27/23 07:10	03/03/23 11:26	1
Chlorobenzilate - RA	ND	*3	0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1
Chloroneb - RA	ND		0.099	ug/L		02/27/23 07:10	03/03/23 11:26	1

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

Lab Sample ID: MB 810-49442/1-A
Matrix: Water
Analysis Batch: 50096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49442

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chlorothalonil (Draconil, Bravo) - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Chlorpyrifos - RA	ND		0.049		ug/L		02/27/23 07:10	03/03/23 11:26	1
Chrysene - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
delta-BHC - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Di(2-ethylhexyl)adipate - RA	ND	*3	0.59		ug/L		02/27/23 07:10	03/03/23 11:26	1
Dibenz(a,h)anthracene - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Diclorvos (DDVP) - RA	ND		0.049		ug/L		02/27/23 07:10	03/03/23 11:26	1
Dieldrin - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Diethylphthalate - RA	ND		0.99		ug/L		02/27/23 07:10	03/03/23 11:26	1
Dimethylphthalate - RA	ND		0.99		ug/L		02/27/23 07:10	03/03/23 11:26	1
Di-n-octyl phthalate - RA	ND	*3	2.0		ug/L		02/27/23 07:10	03/03/23 11:26	1
Di-n-butyl phthalate - RA	ND		2.0		ug/L		02/27/23 07:10	03/03/23 11:26	1
Endosulfan I (Alpha) - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Endosulfan II (Beta) - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Endosulfan sulfate - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Endrin - RA	ND	*3	0.0099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Endrin aldehyde - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
EPTC - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Fluoranthene - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Fluorene - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
gamma-Chlordane - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Heptachlor - RA	ND		0.040		ug/L		02/27/23 07:10	03/03/23 11:26	1
Heptachlor epoxide (isomer B) - RA	ND	*3	0.020		ug/L		02/27/23 07:10	03/03/23 11:26	1
Hexachlorocyclopentadiene - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Hexachlorobenzene - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Indeno[1,2,3-cd]pyrene - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Isophorone - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
gamma-BHC (Lindane) - RA	ND		0.020		ug/L		02/27/23 07:10	03/03/23 11:26	1
Malathion - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Methoxychlor - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Metolachlor - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Metribuzin - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Molinate - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Naphthalene - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Parathion - RA	ND		0.49		ug/L		02/27/23 07:10	03/03/23 11:26	1
Phenanthrene - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Propachlor - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Pyrene - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Simazine - RA	ND		0.069		ug/L		02/27/23 07:10	03/03/23 11:26	1
Terbacil - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Thiobencarb - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Total Permethrin (mixed isomers) - RA	ND		0.20		ug/L		02/27/23 07:10	03/03/23 11:26	1
trans-Nonachlor - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Trifluralin - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Pendimethalin (Penoxaline) - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
Terbuthylazine - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
1-Methylnaphthalene - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
2-Methylnaphthalene - RA	ND		0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1
cis-Permethrin - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1

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

Lab Sample ID: MB 810-49442/1-A
Matrix: Water
Analysis Batch: 50096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49442

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-Permethrin - RA	ND	*3	0.099		ug/L		02/27/23 07:10	03/03/23 11:26	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Heptadecane - RA	*3.26*	*T J N*	*ug/L*		*3.65*	*629-78-7*	*02/27/23 07:10*	*03/03/23 11:26*	*1*
Benzenesulfonamide, N,4-dimethyl- - RA	*0.582*	*T J N*	*ug/L*		*7.46*	*640-61-9*	*02/27/23 07:10*	*03/03/23 11:26*	*1*
Unknown - RA	*0.572*	*T J*	*ug/L*		*19.02*	*N/A*	*02/27/23 07:10*	*03/03/23 11:26*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene - RA	*88*		*70 - 130*	*02/27/23 07:10*	*03/03/23 11:26*	*1*
Triphenylphosphate - RA	*94*	**3*	*70 - 130*	*02/27/23 07:10*	*03/03/23 11:26*	*1*
Perylene-d12 - RA	*81*	**3*	*70 - 130*	*02/27/23 07:10*	*03/03/23 11:26*	*1*

Lab Sample ID: 810-53831-E-1-A MS
Matrix: Water
Analysis Batch: 50096

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49442

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD - RA	ND		2.00	2.01		ug/L		100	70 - 130
2,4'-DDE - RA	ND		2.00	1.97		ug/L		98	70 - 130
2,4'-DDT - RA	ND		2.00	1.95		ug/L		97	70 - 130
2,4-Dinitrotoluene - RA	ND		2.00	1.95		ug/L		97	70 - 130
2,6-Dinitrotoluene - RA	ND		2.00	1.98		ug/L		99	70 - 130
4,4'-DDD - RA	ND		2.00	2.08		ug/L		104	70 - 130
4,4'-DDE - RA	ND		2.00	2.01		ug/L		100	70 - 130
4,4'-DDT - RA	ND		2.00	2.02		ug/L		101	70 - 130
Acenaphthene - RA	ND		2.00	2.04		ug/L		102	70 - 130
Acenaphthylene - RA	ND		2.00	2.08		ug/L		104	70 - 130
Acetochlor - RA	ND		2.00	2.22		ug/L		111	70 - 130
Alachlor - RA	ND		2.00	2.11		ug/L		105	70 - 130
alpha-BHC - RA	ND		2.00	2.22		ug/L		111	70 - 130
alpha-Chlordane - RA	ND		2.00	1.94		ug/L		97	70 - 130
Anthracene - RA	ND		2.00	1.76		ug/L		88	70 - 130
Atrazine - RA	ND		2.00	2.01		ug/L		100	70 - 130
Benz(a)anthracene - RA	ND		2.00	1.94		ug/L		97	70 - 130
Benzo[a]pyrene - RA	ND		2.00	1.66		ug/L		83	70 - 130
Benzo[b]fluoranthene - RA	ND		2.00	1.75		ug/L		87	70 - 130
Benzo[g,h,i]perylene - RA	ND		2.00	1.68		ug/L		84	70 - 130
Benzo[k]fluoranthene - RA	ND		2.00	1.65		ug/L		82	70 - 130
beta-BHC - RA	ND		2.00	2.17		ug/L		109	70 - 130
Bis(2-ethylhexyl) phthalate - RA	ND		2.00	2.15		ug/L		107	70 - 130
Bromacil - RA	ND		2.00	2.41		ug/L		120	70 - 130
Butachlor - RA	ND		2.00	2.02		ug/L		101	70 - 130
Butylbenzylphthalate - RA	ND		2.00	2.26		ug/L		113	70 - 130
Chlorobenzilate - RA	ND		2.00	2.14		ug/L		107	70 - 130
Chloroneb - RA	ND		2.00	2.42		ug/L		121	70 - 130
Chlorothalonil (Draconil, Bravo) - RA	ND		2.00	2.16		ug/L		108	70 - 130

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

Lab Sample ID: 810-53831-E-1-A MS
Matrix: Water
Analysis Batch: 50096

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49442

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorpyrifos - RA	ND		2.00	2.38		ug/L		119	70 - 130
Chrysene - RA	ND		2.00	2.09		ug/L		104	70 - 130
delta-BHC - RA	ND		2.00	1.99		ug/L		99	70 - 130
Di(2-ethylhexyl)adipate - RA	ND		2.00	2.03		ug/L		101	70 - 130
Dibenz(a,h)anthracene - RA	ND		2.00	1.58		ug/L		79	70 - 130
Diclorvos (DDVP) - RA	ND		2.00	2.16		ug/L		108	70 - 130
Dieldrin - RA	ND		2.00	1.96		ug/L		98	70 - 130
Diethylphthalate - RA	ND		2.00	2.17		ug/L		108	70 - 130
Dimethylphthalate - RA	ND		2.00	2.11		ug/L		105	70 - 130
Di-n-octyl phthalate - RA	ND		2.00	ND		ug/L		95	60 - 122
Di-n-butyl phthalate - RA	ND		2.00	2.31		ug/L		115	70 - 130
Endosulfan I (Alpha) - RA	ND		2.00	2.10		ug/L		105	70 - 130
Endosulfan II (Beta) - RA	ND		2.00	2.06		ug/L		103	70 - 130
Endosulfan sulfate - RA	ND		2.00	2.02		ug/L		101	70 - 130
Endrin - RA	ND		2.00	1.81		ug/L		90	70 - 130
Endrin aldehyde - RA	ND		2.00	1.90		ug/L		95	64 - 125
EPTC - RA	ND		2.00	2.12		ug/L		106	70 - 130
Fluoranthene - RA	ND		2.00	2.04		ug/L		102	70 - 130
Fluorene - RA	ND		2.00	2.09		ug/L		104	70 - 130
gamma-Chlordane - RA	ND		2.00	1.87		ug/L		94	70 - 130
Heptachlor - RA	ND		2.00	2.18		ug/L		109	70 - 130
Heptachlor epoxide (isomer B) - RA	ND		2.00	1.99		ug/L		99	70 - 130
Hexachlorocyclopentadiene - RA	ND		2.00	2.07		ug/L		103	70 - 130
Hexachlorobenzene - RA	ND		2.00	2.08		ug/L		104	70 - 130
Indeno[1,2,3-cd]pyrene - RA	ND		2.00	1.57		ug/L		79	70 - 130
Isophorone - RA	ND		2.00	1.93		ug/L		96	70 - 130
gamma-BHC (Lindane) - RA	ND		2.00	2.13		ug/L		106	70 - 130
Malathion - RA	ND		2.00	2.34		ug/L		117	80 - 134
Methoxychlor - RA	ND		2.00	1.88		ug/L		94	70 - 130
Metolachlor - RA	ND		2.00	2.44		ug/L		122	70 - 130
Metribuzin - RA	ND		2.00	2.22		ug/L		111	70 - 130
Molinate - RA	ND		2.00	2.10		ug/L		105	70 - 130
Naphthalene - RA	ND		2.00	2.22		ug/L		111	70 - 130
Parathion - RA	ND		2.00	2.45		ug/L		122	80 - 134
Phenanthrene - RA	ND		2.00	2.11		ug/L		106	70 - 130
Propachlor - RA	ND		2.00	2.11		ug/L		105	70 - 130
Pyrene - RA	ND		2.00	2.00		ug/L		100	70 - 130
Simazine - RA	ND		2.00	1.93		ug/L		97	70 - 130
Terbacil - RA	ND		2.00	2.09		ug/L		104	70 - 130
Thiobencarb - RA	ND		2.00	2.36		ug/L		118	70 - 130
trans-Nonachlor - RA	ND		2.00	1.99		ug/L		99	70 - 130
Trifluralin - RA	ND		2.00	2.10		ug/L		105	70 - 130
Pendimethalin (Penoxaline) - RA	ND		2.00	2.17		ug/L		108	65 - 122
Terbuthylazine - RA	ND		2.00	1.96		ug/L		98	70 - 130
1-Methylnaphthalene - RA	ND		2.00	2.12		ug/L		106	70 - 130
2-Methylnaphthalene - RA	ND		2.00	2.12		ug/L		106	70 - 130
cis-Permethrin - RA	ND		2.00	1.87		ug/L		93	70 - 130
trans-Permethrin - RA	ND		2.00	1.82		ug/L		91	70 - 130

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

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Nitro-m-xylene - RA	111		70 - 130
Triphenylphosphate - RA	102		70 - 130
Perylene-d12 - RA	89		70 - 130

Lab Sample ID: 380-37894-2 DU
Matrix: Drinking Water
Analysis Batch: 50096

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Prep Type: Total/NA
Prep Batch: 49442

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
2,4'-DDD - RA	ND			ND		ug/L				NC	30
2,4'-DDE - RA	ND			ND		ug/L				NC	30
2,4'-DDT - RA	ND			ND		ug/L				NC	30
2,4-Dinitrotoluene - RA	ND			ND		ug/L				NC	20
2,6-Dinitrotoluene - RA	ND			ND		ug/L				NC	30
4,4'-DDD - RA	ND			ND		ug/L				NC	17
4,4'-DDE - RA	ND			ND		ug/L				NC	19
4,4'-DDT - RA	ND			ND		ug/L				NC	19
Acenaphthene - RA	ND			ND		ug/L				NC	31
Acenaphthylene - RA	ND			ND		ug/L				NC	34
Acetochlor - RA	ND			ND		ug/L				NC	30
Alachlor - RA	ND			ND		ug/L				NC	15
alpha-BHC - RA	ND			ND		ug/L				NC	30
alpha-Chlordane - RA	ND			ND		ug/L				NC	15
Anthracene - RA	ND			ND		ug/L				NC	52
Atrazine - RA	ND			ND		ug/L				NC	17
Benz(a)anthracene - RA	ND			ND		ug/L				NC	14
Benzo[a]pyrene - RA	ND			ND		ug/L				NC	26
Benzo[b]fluoranthene - RA	ND			ND		ug/L				NC	20
Benzo[g,h,i]perylene - RA	ND			ND		ug/L				NC	14
Benzo[k]fluoranthene - RA	ND			ND		ug/L				NC	20
beta-BHC - RA	ND			ND		ug/L				NC	30
Bis(2-ethylhexyl) phthalate - RA	ND			ND		ug/L				NC	18
Bromacil - RA	ND			ND		ug/L				NC	20
Butachlor - RA	ND			ND		ug/L				NC	15
Butylbenzylphthalate - RA	ND			ND		ug/L				NC	23
Chlorobenzilate - RA	ND			ND		ug/L				NC	30
Chloroneb - RA	ND			ND		ug/L				NC	30
Chlorothalonil (Draconil, Bravo) - RA	ND			ND		ug/L				NC	15
Chlorpyrifos - RA	ND			ND		ug/L				NC	30
Chrysene - RA	ND			ND		ug/L				NC	12
delta-BHC - RA	ND			ND		ug/L				NC	30
Di(2-ethylhexyl)adipate - RA	ND			ND		ug/L				NC	16
Dibenz(a,h)anthracene - RA	ND			ND		ug/L				NC	19
Diclorvos (DDVP) - RA	ND			ND		ug/L				NC	30
Dieldrin - RA	ND			ND		ug/L				NC	19
Diethylphthalate - RA	ND			ND		ug/L				NC	21
Dimethylphthalate - RA	ND			ND		ug/L				NC	20
Di-n-octyl phthalate - RA	ND			ND		ug/L				NC	20
Di-n-butyl phthalate - RA	ND			ND		ug/L				NC	20
Endosulfan I (Alpha) - RA	ND			ND		ug/L				NC	30
Endosulfan II (Beta) - RA	ND			ND		ug/L				NC	30

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

Lab Sample ID: 380-37894-2 DU
Matrix: Drinking Water
Analysis Batch: 50096

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Prep Type: Total/NA
Prep Batch: 49442

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Endosulfan sulfate - RA	ND			ND		ug/L				NC	30
Endrin - RA	ND			ND		ug/L				NC	18
Endrin aldehyde - RA	ND			ND		ug/L				NC	30
EPTC - RA	ND			ND		ug/L				NC	18
Fluoranthene - RA	ND			ND		ug/L				NC	13
Fluorene - RA	ND			ND		ug/L				NC	25
gamma-Chlordane - RA	ND			ND		ug/L				NC	16
Heptachlor - RA	ND			ND		ug/L				NC	15
Heptachlor epoxide (isomer B) - RA	ND			ND		ug/L				NC	14
Hexachlorocyclopentadiene - RA	ND			ND		ug/L				NC	29
Hexachlorobenzene - RA	ND			ND		ug/L				NC	14
Indeno[1,2,3-cd]pyrene - RA	ND			ND		ug/L				NC	25
Isophorone - RA	ND			ND		ug/L				NC	44
gamma-BHC (Lindane) - RA	ND			ND		ug/L				NC	13
Malathion - RA	ND			ND		ug/L				NC	20
Methoxychlor - RA	ND			ND		ug/L				NC	14
Metolachlor - RA	ND			ND		ug/L				NC	14
Metribuzin - RA	ND			ND		ug/L				NC	24
Molinate - RA	ND			ND		ug/L				NC	16
Naphthalene - RA	ND			ND		ug/L				NC	46
Parathion - RA	ND			ND		ug/L				NC	20
Phenanthrene - RA	ND			ND		ug/L				NC	14
Propachlor - RA	ND			ND		ug/L				NC	12
Pyrene - RA	ND			ND		ug/L				NC	15
Simazine - RA	ND			ND		ug/L				NC	21
Terbacil - RA	ND			ND		ug/L				NC	22
Thiobencarb - RA	ND			ND		ug/L				NC	11
Total Permethrin (mixed isomers) - RA	ND			ND		ug/L				NC	
trans-Nonachlor - RA	ND			ND		ug/L				NC	17
Trifluralin - RA	ND			ND		ug/L				NC	19
Pendimethalin (Penoxaline) - RA	ND			ND		ug/L				NC	30
Terbuthylazine - RA	ND			ND		ug/L				NC	30
1-Methylnaphthalene - RA	ND			ND		ug/L				NC	20
2-Methylnaphthalene - RA	ND			ND		ug/L				NC	20
cis-Permethrin - RA	ND			ND		ug/L				NC	30
trans-Permethrin - RA	ND			ND		ug/L				NC	30

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene - RA	*103*		*70 - 130*
Triphenylphosphate - RA	*100*		*70 - 130*
Perylene-d12 - RA	*88*		*70 - 130*

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

Lab Sample ID: MBL 810-50545/1-A
Matrix: Water
Analysis Batch: 50681

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50545

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluorohexanoic acid (PFHxA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluorobutanoic acid (PFBA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluoropentanoic acid (PFPeA)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0		ng/L		03/07/23 06:27	03/08/23 19:14	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*85*		*50 - 200*	*03/07/23 06:27*	*03/08/23 19:14*	*1*
13C6 PFDA	*90*		*50 - 200*	*03/07/23 06:27*	*03/08/23 19:14*	*1*
13C5 PFHxA	*93*		*50 - 200*	*03/07/23 06:27*	*03/08/23 19:14*	*1*
13C4 PFHpA	*94*		*50 - 200*	*03/07/23 06:27*	*03/08/23 19:14*	*1*
13C8 PFOA	*94*		*50 - 200*	*03/07/23 06:27*	*03/08/23 19:14*	*1*
13C9 PFNA	*94*		*50 - 200*	*03/07/23 06:27*	*03/08/23 19:14*	*1*
13C7 PFUnA	*88*		*50 - 200*	*03/07/23 06:27*	*03/08/23 19:14*	*1*
13C2 PFDoA	*89*		*50 - 200*	*03/07/23 06:27*	*03/08/23 19:14*	*1*
13C4 PFBA	*94*		*50 - 200*	*03/07/23 06:27*	*03/08/23 19:14*	*1*
13C5 PFPeA	*95*		*50 - 200*	*03/07/23 06:27*	*03/08/23 19:14*	*1*
13C3 PFBS	*93*		*50 - 200*	*03/07/23 06:27*	*03/08/23 19:14*	*1*
13C3 PFHxS	*91*		*50 - 200*	*03/07/23 06:27*	*03/08/23 19:14*	*1*

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

Lab Sample ID: MBL 810-50545/1-A
Matrix: Water
Analysis Batch: 50681

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50545

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	90		50 - 200	03/07/23 06:27	03/08/23 19:14	1
13C2-4:2-FTS	94		50 - 200	03/07/23 06:27	03/08/23 19:14	1
13C2-6:2-FTS	92		50 - 200	03/07/23 06:27	03/08/23 19:14	1
13C2-8:2-FTS	92		50 - 200	03/07/23 06:27	03/08/23 19:14	1

Lab Sample ID: LLCS 810-50545/2-A
Matrix: Water
Analysis Batch: 50681

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50545

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	1.70	J	ng/L		90	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	1.76	J	ng/L		94	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	1.65	J	ng/L		87	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.81	J	ng/L		90	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.78	1.72	J	ng/L		97	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.01		ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.04		ng/L		102	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.99	J	ng/L		100	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.59	J	ng/L		87	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	1.77	J	ng/L		96	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.95	J	ng/L		97	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.99	J	ng/L		100	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	1.98	J	ng/L		99	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.92	1.91	J	ng/L		100	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.88	1.77	J	ng/L		94	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.90	2.08		ng/L		109	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.05		ng/L		103	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	1.78	1.67	J	ng/L		93	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.88	J	ng/L		94	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.80	J	ng/L		90	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.93	J	ng/L		97	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.91	1.93	J	ng/L		101	50 - 150

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

Lab Sample ID: LLCS 810-50545/2-A
Matrix: Water
Analysis Batch: 50681

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50545

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoropentanesulfonic acid (PFPeS)			1.88	1.61	J	ng/L		86	50 - 150		

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C3 HFPO-DA	*40*	*5-	*50 - 200*
13C6 PFDA	*30*	*5-	*50 - 200*
13C5 PFHxA	*40*	*5-	*50 - 200*
13C4 PFHpA	*40*	*5-	*50 - 200*
13C8 PFOA	*37*	*5-	*50 - 200*
13C9 PFNA	*33*	*5-	*50 - 200*
13C7 PFUnA	*36*	*5-	*50 - 200*
13C2 PFDoA	*48*	*5-	*50 - 200*
13C4 PFBA	*40*	*5-	*50 - 200*
13C5 PFPeA	*42*	*5-	*50 - 200*
13C3 PFBS	*104*		*50 - 200*
13C3 PFHxS	*107*		*50 - 200*
13C8 PFOS	*94*		*50 - 200*
13C2-4:2-FTS	*99*		*50 - 200*
13C2-6:2-FTS	*101*		*50 - 200*
13C2-8:2-FTS	*99*		*50 - 200*

Lab Sample ID: MBL 810-51061/1-A
Matrix: Water
Analysis Batch: 51292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51061

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluorohexanoic acid (PFHxA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluorobutanoic acid (PFBA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1

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

Lab Sample ID: MBL 810-51061/1-A
Matrix: Water
Analysis Batch: 51292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51061

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluoropentanoic acid (PFPeA)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0		ng/L		03/10/23 06:24	03/13/23 15:58	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*93*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C6 PFDA	*93*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C5 PFHxA	*100*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C4 PFHpA	*97*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C8 PFOA	*93*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C9 PFNA	*99*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C7 PFUnA	*91*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C2 PFDoA	*88*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C4 PFBA	*94*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C5 PFPeA	*91*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C3 PFBS	*90*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C3 PFHxS	*95*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C8 PFOS	*87*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C2-4:2-FTS	*102*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C2-6:2-FTS	*92*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*
13C2-8:2-FTS	*89*		*50 - 200*	*03/10/23 06:24*	*03/13/23 15:58*	*1*

Lab Sample ID: LLCS 810-51061/2-A
Matrix: Water
Analysis Batch: 51292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51061

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			1.89	1.72	J	ng/L		91	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			1.87	1.74	J	ng/L		93	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			1.89	1.81	J	ng/L		96	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			2.00	1.95	J	ng/L		97	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			1.78	1.46	J	ng/L		82	50 - 150		
Perfluorodecanoic acid (PFDA)			2.00	1.85	J	ng/L		93	50 - 150		
Perfluorododecanoic acid (PFDoA)			2.00	1.91	J	ng/L		95	50 - 150		

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

Lab Sample ID: LLCS 810-51061/2-A
Matrix: Water
Analysis Batch: 51292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51061

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroheptanoic acid (PFHpA)	2.00	1.93	J	ng/L		97	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.67	J	ng/L		92	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.91	J	ng/L		95	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.87	J	ng/L		93	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	1.86	J	ng/L		100	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.91	J	ng/L		96	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	1.94	J	ng/L		97	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.92	2.05		ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.88	2.19		ng/L		117	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.90	1.85	J	ng/L		97	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.83	J	ng/L		91	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	1.78	1.51	J	ng/L		84	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.92	J	ng/L		96	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.86	J	ng/L		93	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.84	J	ng/L		92	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.91	1.75	J	ng/L		92	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.79	J	ng/L		95	50 - 150

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C3 HFPO-DA	*98*		*50 - 200*
13C6 PFDA	*98*		*50 - 200*
13C5 PFHxA	*103*		*50 - 200*
13C4 PFHpA	*93*		*50 - 200*
13C8 PFOA	*98*		*50 - 200*
13C9 PFNA	*102*		*50 - 200*
13C7 PFUnA	*96*		*50 - 200*
13C2 PFDoA	*95*		*50 - 200*
13C4 PFBA	*102*		*50 - 200*
13C5 PFPeA	*99*		*50 - 200*
13C3 PFBS	*108*		*50 - 200*
13C3 PFHxS	*97*		*50 - 200*
13C8 PFOS	*95*		*50 - 200*
13C2-4:2-FTS	*102*		*50 - 200*
13C2-6:2-FTS	*98*		*50 - 200*
13C2-8:2-FTS	*97*		*50 - 200*

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

Lab Sample ID: 810-54045-E-2-A LMS
Matrix: Water
Analysis Batch: 51292

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 51061

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.76	1.67	J	ng/L		95	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.74	1.61	J	ng/L		93	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.76	1.63	J	ng/L		93	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.86	2.03		ng/L		109	50 - 150
Perfluorobutanesulfonic acid (PFBS)	6.2		1.65	7.67		ng/L		87	50 - 150
Perfluorodecanoic acid (PFDA)	ND		1.86	2.22		ng/L		99	50 - 150
Perfluorododecanoic acid (PFDoA)	ND		1.86	2.08		ng/L		112	50 - 150
Perfluoroheptanoic acid (PFHpA)	ND		1.86	3.62		ng/L		97	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	3.4		1.70	5.66		ng/L		131	50 - 150
Perfluorohexanoic acid (PFHxA)	5.4		1.86	7.44		ng/L		109	50 - 150
Perfluorononanoic acid (PFNA)	ND		1.86	2.24		ng/L		91	50 - 150
Perfluorooctanesulfonic acid (PFOS)	4.7		1.73	6.40		ng/L		96	50 - 150
Perfluorooctanoic acid (PFOA)	3.5		1.86	5.15		ng/L		90	50 - 150
Perfluoroundecanoic acid (PFUnA)	ND		1.86	2.00		ng/L		108	50 - 150
Perfluorobutanoic acid (PFBA)	7.3		1.86	9.75		ng/L		130	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.79	2.02		ng/L		113	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.74	1.92		ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.77	1.82	J	ng/L		103	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.86	1.95		ng/L		105	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		1.66	1.61	J	ng/L		97	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.86	2.31		ng/L		124	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.86	1.76	J	ng/L		95	50 - 150
Perfluoropentanoic acid (PFPeA)	7.6		1.86	9.30	4	ng/L		94	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.77	1.85	J	ng/L		104	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	ND		1.75	2.26		ng/L		102	50 - 150

Isotope Dilution	*LMS %Recovery*	*LMS Qualifier*	*Limits*
13C3 HFPO-DA	*82*		*50 - 200*
13C6 PFDA	*84*		*50 - 200*
13C5 PFHxA	*93*		*50 - 200*
13C4 PFHpA	*87*		*50 - 200*
13C8 PFOA	*89*		*50 - 200*
13C9 PFNA	*87*		*50 - 200*

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

Lab Sample ID: 810-54045-E-2-A LMS
Matrix: Water
Analysis Batch: 51292

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 51061

Isotope Dilution	LMS %Recovery	LMS Qualifier	Limits
13C7 PFUnA	82		50 - 200
13C2 PFDoA	84		50 - 200
13C4 PFBA	93		50 - 200
13C5 PFPeA	118		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	91		50 - 200
13C8 PFOS	92		50 - 200
13C2-4:2-FTS	114		50 - 200
13C2-6:2-FTS	112		50 - 200
13C2-8:2-FTS	115		50 - 200

Lab Sample ID: 380-37894-3 DU
Matrix: Drinking Water
Analysis Batch: 51292

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Prep Type: Total/NA
Prep Batch: 51061

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND			ND		ng/L				NC	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND			ND		ng/L				NC	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND			ND		ng/L				NC	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND			ND		ng/L				NC	30
Perfluorobutanesulfonic acid (PFBS)	ND			ND		ng/L				NC	30
Perfluorodecanoic acid (PFDA)	ND			ND		ng/L				NC	30
Perfluorododecanoic acid (PFDoA)	ND			ND		ng/L				NC	30
Perfluoroheptanoic acid (PFHpA)	ND			ND		ng/L				NC	30
Perfluorohexanesulfonic acid (PFHxS)	2.4			2.25		ng/L				5	30
Perfluorohexanoic acid (PFHxA)	2.0			ND		ng/L				NC	30
Perfluorononanoic acid (PFNA)	ND			ND		ng/L				NC	30
Perfluorooctanesulfonic acid (PFOS)	2.1			2.12		ng/L				1	30
Perfluorooctanoic acid (PFOA)	2.0			2.12		ng/L				4	30
Perfluoroundecanoic acid (PFUnA)	ND			ND		ng/L				NC	30
Perfluorobutanoic acid (PFBA)	ND			ND		ng/L				NC	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND			ND		ng/L				NC	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND			ND		ng/L				NC	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND			ND		ng/L				NC	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND			ND		ng/L				NC	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND			ND		ng/L				NC	30

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

Lab Sample ID: 380-37894-3 DU
Matrix: Drinking Water
Analysis Batch: 51292

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Prep Type: Total/NA
Prep Batch: 51061

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND			ND		ng/L				NC	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND			ND		ng/L				NC	30
Perfluoropentanoic acid (PFPeA)	2.1			2.18		ng/L				2	30
Perfluoroheptanesulfonic acid (PFHpS)	ND			ND		ng/L				NC	30
Perfluoropentanesulfonic acid (PFPeS)	ND			ND		ng/L				NC	30

Isotope Dilution	*DU %Recovery*	*DU Qualifier*	*Limits*
13C3 HFPO-DA	*65*		*50 - 200*
13C6 PFDA	*63*		*50 - 200*
13C5 PFHxA	*74*		*50 - 200*
13C4 PFHpA	*65*		*50 - 200*
13C8 PFOA	*65*		*50 - 200*
13C9 PFNA	*65*		*50 - 200*
13C7 PFUnA	*62*		*50 - 200*
13C2 PFDoA	*63*		*50 - 200*
13C4 PFBA	*76*		*50 - 200*
13C5 PFPeA	*76*		*50 - 200*
13C3 PFBS	*93*		*50 - 200*
13C3 PFHxS	*99*		*50 - 200*
13C8 PFOS	*89*		*50 - 200*
13C2-4:2-FTS	*88*		*50 - 200*
13C2-6:2-FTS	*90*		*50 - 200*
13C2-8:2-FTS	*90*		*50 - 200*

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

Lab Sample ID: MBL 810-49184/1-A
Matrix: Water
Analysis Batch: 49286

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49184

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
Perfluorohexanoic acid (PFHxA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1

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

Lab Sample ID: MBL 810-49184/1-A
Matrix: Water
Analysis Batch: 49286

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49184

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0		ng/L		02/24/23 07:29	02/26/23 16:03	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*110*		*70 - 130*	*02/24/23 07:29*	*02/26/23 16:03*	*1*
13C2 PFDA	*105*		*70 - 130*	*02/24/23 07:29*	*02/26/23 16:03*	*1*
d5-NEtFOSAA	*84*		*70 - 130*	*02/24/23 07:29*	*02/26/23 16:03*	*1*

Lab Sample ID: LLCS 810-49184/2-A
Matrix: Water
Analysis Batch: 49286

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49184

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.32		ng/L		116	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.40		ng/L		120	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.52		ng/L		126	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.22		ng/L		111	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.33		ng/L		117	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.62		ng/L		131	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.53		ng/L		126	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.42		ng/L		121	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.31		ng/L		116	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.47		ng/L		124	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.52		ng/L		126	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.59		ng/L		129	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.59		ng/L		130	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.60		ng/L		130	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.33		ng/L		116	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.54		ng/L		127	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.70		ng/L		135	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.61		ng/L		130	50 - 150

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

Lab Sample ID: LLCS 810-49184/2-A
Matrix: Water
Analysis Batch: 49286

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49184

Surrogate	LLCS %Recovery	LLCS Qualifier	Limits
13C2 PFHxA	112		70 - 130
13C2 PFDA	115		70 - 130
d5-NEtFOSAA	106		70 - 130

Lab Sample ID: 810-53932-B-1-A MS
Matrix: Water
Analysis Batch: 49286

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49184

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)	ND		98.3	95.7		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		98.3	99.7		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		98.3	104		ng/L		106	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		98.3	101		ng/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	ND		98.3	104		ng/L		106	70 - 130
Perfluorodecanoic acid (PFDA)	ND		98.3	102		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	ND		98.3	99.9		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	ND		98.3	98.1		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	ND		98.3	101		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	ND		98.3	107		ng/L		108	70 - 130
Perfluorononanoic acid (PFNA)	ND		98.3	105		ng/L		107	70 - 130
Perfluorooctanesulfonic acid (PFOS)	ND		98.3	99.4		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	ND		98.3	108		ng/L		110	70 - 130
Perfluoroundecanoic acid (PFUnA)	ND		98.3	106		ng/L		108	70 - 130
Perfluorotetradecanoic acid (PFTA)	ND		98.3	94.9		ng/L		97	70 - 130
Perfluorotridecanoic acid (PFTrDA)	ND		98.3	101		ng/L		103	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		98.3	97.6		ng/L		99	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		98.3	95.2		ng/L		97	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
13C2 PFHxA	115		70 - 130
13C2 PFDA	111		70 - 130
d5-NEtFOSAA	106		70 - 130

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

Lab Sample ID: 810-53932-D-3-A DU
Matrix: Water
Analysis Batch: 49286

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 49184

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND			ND		ng/L				NC	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND			ND		ng/L				NC	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND			ND		ng/L				NC	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND			ND		ng/L				NC	30
Perfluorobutanesulfonic acid (PFBS)	ND			ND		ng/L				NC	30
Perfluorodecanoic acid (PFDA)	ND			ND		ng/L				NC	30
Perfluorododecanoic acid (PFDoA)	ND			ND		ng/L				NC	30
Perfluoroheptanoic acid (PFHpA)	ND			ND		ng/L				NC	30
Perfluorohexanesulfonic acid (PFHxS)	ND			ND		ng/L				NC	30
Perfluorohexanoic acid (PFHxA)	ND			ND		ng/L				NC	30
Perfluorononanoic acid (PFNA)	ND			ND		ng/L				NC	30
Perfluorooctanesulfonic acid (PFOS)	ND			ND		ng/L				NC	30
Perfluorooctanoic acid (PFOA)	ND			ND		ng/L				NC	30
Perfluoroundecanoic acid (PFUnA)	ND			ND		ng/L				NC	30
Perfluorotetradecanoic acid (PFTA)	ND			ND		ng/L				NC	30
Perfluorotridecanoic acid (PFTrDA)	ND			ND		ng/L				NC	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND			ND		ng/L				NC	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND			ND		ng/L				NC	30

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
13C2 PFHxA	*108*		*70 - 130*
13C2 PFDA	*106*		*70 - 130*
d5-NEtFOSAA	*92*		*70 - 130*

Lab Sample ID: MBL 810-49187/10-A
Matrix: Water
Analysis Batch: 49280

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49187

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1

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

Lab Sample ID: MBL 810-49187/10-A
Matrix: Water
Analysis Batch: 49280

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49187

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
Perfluorohexanoic acid (PFHxA)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0		ng/L		02/24/23 07:41	02/26/23 00:27	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*108*		*70 - 130*	*02/24/23 07:41*	*02/26/23 00:27*	*1*
13C2 PFDA	*110*		*70 - 130*	*02/24/23 07:41*	*02/26/23 00:27*	*1*
d5-NEtFOSAA	*102*		*70 - 130*	*02/24/23 07:41*	*02/26/23 00:27*	*1*

Lab Sample ID: LCS 810-49187/11-A
Matrix: Water
Analysis Batch: 49280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49187

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			100	105		ng/L		105	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			100	112		ng/L		112	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			100	112		ng/L		112	70 - 130		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			100	109		ng/L		109	70 - 130		
Perfluorobutanesulfonic acid (PFBS)			100	104		ng/L		104	70 - 130		
Perfluorodecanoic acid (PFDA)			100	109		ng/L		109	70 - 130		
Perfluorododecanoic acid (PFDoA)			100	105		ng/L		105	70 - 130		
Perfluoroheptanoic acid (PFHpA)			100	108		ng/L		108	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)			100	114		ng/L		114	70 - 130		
Perfluorohexanoic acid (PFHxA)			100	114		ng/L		114	70 - 130		
Perfluorononanoic acid (PFNA)			100	112		ng/L		112	70 - 130		
Perfluorooctanesulfonic acid (PFOS)			100	112		ng/L		112	70 - 130		
Perfluorooctanoic acid (PFOA)			100	114		ng/L		114	70 - 130		
Perfluoroundecanoic acid (PFUnA)			100	108		ng/L		108	70 - 130		

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

Lab Sample ID: LCS 810-49187/11-A
Matrix: Water
Analysis Batch: 49280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49187

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotetradecanoic acid (PFTA)	100	98.2		ng/L		98	70 - 130
Perfluorotridecanoic acid (PFTrDA)	100	102		ng/L		102	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	100	103		ng/L		103	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	100	109		ng/L		109	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C2 PFHxA	*106*		*70 - 130*
13C2 PFDA	*114*		*70 - 130*
d5-NEtFOSAA	*103*		*70 - 130*

Lab Sample ID: LLCS 810-49187/9-A
Matrix: Water
Analysis Batch: 49280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49187

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.17		ng/L		108	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.44		ng/L		122	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.38		ng/L		119	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.43		ng/L		122	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.34		ng/L		117	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.52		ng/L		126	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.21		ng/L		111	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.70		ng/L		135	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.43		ng/L		121	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.67		ng/L		134	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.47		ng/L		124	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.55		ng/L		127	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.50		ng/L		125	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.48		ng/L		124	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.08		ng/L		104	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.24		ng/L		112	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.46		ng/L		123	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.48		ng/L		124	50 - 150

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

Lab Sample ID: LLCS 810-49187/9-A
Matrix: Water
Analysis Batch: 49280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49187

Surrogate	LLCS %Recovery	LLCS Qualifier	Limits
13C2 PFHxA	117		70 - 130
13C2 PFDA	112		70 - 130
d5-NEtFOSAA	103		70 - 130

Lab Sample ID: 810-53841-B-1-A LMS
Matrix: Water
Analysis Batch: 49280

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49187

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.87	2.13		ng/L		114	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.87	2.33		ng/L		125	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.87	2.20		ng/L		118	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.87	2.16		ng/L		116	50 - 150
Perfluorobutanesulfonic acid (PFBS)	ND		1.87	3.09		ng/L		109	50 - 150
Perfluorodecanoic acid (PFDA)	ND		1.87	2.09		ng/L		112	50 - 150
Perfluorododecanoic acid (PFDoA)	ND		1.87	2.02		ng/L		108	50 - 150
Perfluoroheptanoic acid (PFHpA)	ND		1.87	2.16		ng/L		116	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	ND		1.87	2.98		ng/L		111	50 - 150
Perfluorohexanoic acid (PFHxA)	ND		1.87	2.29		ng/L		123	50 - 150
Perfluorononanoic acid (PFNA)	ND		1.87	2.09		ng/L		112	50 - 150
Perfluorooctanesulfonic acid (PFOS)	ND		1.87	2.42		ng/L		130	50 - 150
Perfluorooctanoic acid (PFOA)	ND		1.87	2.16		ng/L		116	50 - 150
Perfluoroundecanoic acid (PFUnA)	ND		1.87	1.95		ng/L		104	50 - 150
Perfluorotetradecanoic acid (PFTA)	ND		1.87	1.73	J	ng/L		93	50 - 150
Perfluorotridecanoic acid (PFTrDA)	ND		1.87	1.86	J	ng/L		99	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.87	2.38		ng/L		127	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.87	2.15		ng/L		115	50 - 150

Surrogate	LMS %Recovery	LMS Qualifier	Limits
13C2 PFHxA	110		70 - 130
13C2 PFDA	111		70 - 130
d5-NEtFOSAA	106		70 - 130

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

Lab Sample ID: 810-53482-B-1-A DU
Matrix: Water
Analysis Batch: 49280

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 49187

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND			ND		ng/L				NC	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND			ND		ng/L				NC	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND			ND		ng/L				NC	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND			ND		ng/L				NC	30
Perfluorobutanesulfonic acid (PFBS)	4.2			4.32		ng/L				2	30
Perfluorodecanoic acid (PFDA)	ND			ND		ng/L				NC	30
Perfluorododecanoic acid (PFDoA)	ND			ND		ng/L				NC	30
Perfluoroheptanoic acid (PFHpA)	4.8			4.66		ng/L				3	30
Perfluorohexanesulfonic acid (PFHxS)	12			11.5		ng/L				1	30
Perfluorohexanoic acid (PFHxA)	6.3			6.81		ng/L				8	30
Perfluorononanoic acid (PFNA)	ND			ND		ng/L				NC	30
Perfluorooctanesulfonic acid (PFOS)	15			14.3		ng/L				1	30
Perfluorooctanoic acid (PFOA)	16			16.6		ng/L				3	30
Perfluoroundecanoic acid (PFUnA)	ND			ND		ng/L				NC	30
Perfluorotetradecanoic acid (PFTA)	ND			ND		ng/L				NC	30
Perfluorotridecanoic acid (PFTrDA)	ND			ND		ng/L				NC	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND			ND		ng/L				NC	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND			ND		ng/L				NC	30

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
13C2 PFHxA	*109*		*70 - 130*
13C2 PFDA	*113*		*70 - 130*
d5-NEtFOSAA	*98*		*70 - 130*

Lab Sample ID: MBL 810-49433/1-A
Matrix: Water
Analysis Batch: 49481

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49433

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1

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

Lab Sample ID: MBL 810-49433/1-A
Matrix: Water
Analysis Batch: 49481

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49433

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
Perfluorohexanoic acid (PFHxA)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0		ng/L		02/27/23 06:15	02/28/23 03:22	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*97*		*70 - 130*	*02/27/23 06:15*	*02/28/23 03:22*	*1*
13C2 PFDA	*93*		*70 - 130*	*02/27/23 06:15*	*02/28/23 03:22*	*1*
d5-NEtFOSAA	*86*		*70 - 130*	*02/27/23 06:15*	*02/28/23 03:22*	*1*
13C3 HFPO-DA	*91*		*70 - 130*	*02/27/23 06:15*	*02/28/23 03:22*	*1*

Lab Sample ID: LCS 810-49433/3-A
Matrix: Water
Analysis Batch: 49481

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49433

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	100	91.4		ng/L		91	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	100	92.3		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	100	93.4		ng/L		93	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	100	87.7		ng/L		88	70 - 130
Perfluorobutanesulfonic acid (PFBS)	100	79.4		ng/L		79	70 - 130
Perfluorodecanoic acid (PFDA)	100	94.3		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	100	89.9		ng/L		90	70 - 130
Perfluoroheptanoic acid (PFHpA)	100	98.2		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	100	99.9		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	100	86.4		ng/L		86	70 - 130
Perfluorononanoic acid (PFNA)	100	97.2		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	100	94.3		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	100	94.8		ng/L		95	70 - 130

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

Lab Sample ID: LCS 810-49433/3-A
Matrix: Water
Analysis Batch: 49481

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49433

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	100	92.4		ng/L		92	70 - 130
Perfluorotetradecanoic acid (PFTA)	100	80.1		ng/L		80	70 - 130
Perfluorotridecanoic acid (PFTrDA)	100	81.2		ng/L		81	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	100	91.4		ng/L		91	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	100	90.0		ng/L		90	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C2 PFHxA	*96*		*70 - 130*
13C2 PFDA	*98*		*70 - 130*
d5-NEtFOSAA	*92*		*70 - 130*
13C3 HFPO-DA	*99*		*70 - 130*

Lab Sample ID: LLCS 810-49433/2-A
Matrix: Water
Analysis Batch: 49481

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49433

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.19		ng/L		110	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.35		ng/L		118	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.06		ng/L		103	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.88	J	ng/L		94	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.03		ng/L		102	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.18		ng/L		109	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.08		ng/L		104	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.29		ng/L		115	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.36		ng/L		118	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.21		ng/L		111	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.22		ng/L		111	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.40		ng/L		120	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.30		ng/L		115	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.21		ng/L		110	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.75	J	ng/L		88	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.24		ng/L		112	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.24		ng/L		112	50 - 150

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

Lab Sample ID: LLCS 810-49433/2-A
Matrix: Water
Analysis Batch: 49481

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49433

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.22		ng/L		111	50 - 150

Surrogate	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C2 PFHxA	*100*		*70 - 130*
13C2 PFDA	*103*		*70 - 130*
d5-NEtFOSAA	*93*		*70 - 130*
13C3 HFPO-DA	*105*		*70 - 130*

Lab Sample ID: 810-53735-B-1-A MS
Matrix: Water
Analysis Batch: 49481

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49433

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)	ND		94.1	91.8		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		94.1	91.4		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		94.1	92.1		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		94.1	89.4		ng/L		95	70 - 130
Perfluorobutanesulfonic acid (PFBS)	2.7		94.1	92.3		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	ND		94.1	92.2		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	ND		94.1	88.8		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	ND		94.1	93.4		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	9.5		94.1	108		ng/L		105	70 - 130
Perfluorohexanoic acid (PFHxA)	3.1		94.1	89.7		ng/L		92	70 - 130
Perfluorononanoic acid (PFNA)	ND		94.1	97.9		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	19		94.1	119		ng/L		106	70 - 130
Perfluorooctanoic acid (PFOA)	3.4		94.1	97.6		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	ND		94.1	93.3		ng/L		99	70 - 130
Perfluorotetradecanoic acid (PFTA)	ND		94.1	81.4		ng/L		87	70 - 130
Perfluorotridecanoic acid (PFTrDA)	ND		94.1	82.0		ng/L		87	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		94.1	89.6		ng/L		95	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		94.1	90.6		ng/L		96	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
13C2 PFHxA	*91*		*70 - 130*
13C2 PFDA	*97*		*70 - 130*
d5-NEtFOSAA	*89*		*70 - 130*

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

Lab Sample ID: 810-53735-B-1-A MS
Matrix: Water
Analysis Batch: 49481

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49433

Surrogate	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	102		70 - 130

Lab Sample ID: 810-53529-Z-1-A DU
Matrix: Water
Analysis Batch: 49481

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 49433

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		ND		ng/L		NC	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		ND		ng/L		NC	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		ND		ng/L		NC	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		ND		ng/L		NC	30
Perfluorobutanesulfonic acid (PFBS)	3.0		2.92		ng/L		3	30
Perfluorodecanoic acid (PFDA)	ND		ND		ng/L		NC	30
Perfluorododecanoic acid (PFDoA)	ND		ND		ng/L		NC	30
Perfluoroheptanoic acid (PFHpA)	2.3		2.10		ng/L		8	30
Perfluorohexanesulfonic acid (PFHxS)	ND		ND		ng/L		NC	30
Perfluorohexanoic acid (PFHxA)	18		16.3		ng/L		8	30
Perfluorononanoic acid (PFNA)	ND		ND		ng/L		NC	30
Perfluorooctanesulfonic acid (PFOS)	2.0		ND		ng/L		NC	30
Perfluorooctanoic acid (PFOA)	6.8		6.75		ng/L		0.8	30
Perfluoroundecanoic acid (PFUnA)	ND		ND		ng/L		NC	30
Perfluorotetradecanoic acid (PFTA)	ND		ND		ng/L		NC	30
Perfluorotridecanoic acid (PFTrDA)	ND		ND		ng/L		NC	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		ND		ng/L		NC	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		ND		ng/L		NC	30

Surrogate	DU %Recovery	DU Qualifier	Limits
13C2 PFHxA	92		70 - 130
13C2 PFDA	92		70 - 130
d5-NEtFOSAA	94		70 - 130
13C3 HFPO-DA	98		70 - 130

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Lab Sample ID: 104254-B1
Matrix: BlankMatrix
Analysis Batch: O-40132

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40132_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Acenaphthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Acenaphthylene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Anthracene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Biphenyl	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Chrysene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Dibenzothiophene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		02/16/23 00:00	02/26/23 01:49	1
Fluoranthene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Fluorene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Naphthalene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Perylene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Phenanthrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1
Pyrene	ND		0.005	0.001	µg/L		02/16/23 00:00	02/26/23 01:49	1

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*88*		*27 - 133*	*02/16/23 00:00*	*02/26/23 01:49*	*1*
(d10-Phenanthrene)	*93*		*43 - 129*	*02/16/23 00:00*	*02/26/23 01:49*	*1*
(d12-Chrysene)	*96*		*52 - 144*	*02/16/23 00:00*	*02/26/23 01:49*	*1*
(d12-Perylene)	*93*		*36 - 161*	*02/16/23 00:00*	*02/26/23 01:49*	*1*
(d8-Naphthalene)	*86*		*25 - 125*	*02/16/23 00:00*	*02/26/23 01:49*	*1*

Lab Sample ID: 104254-BS1
Matrix: BlankMatrix
Analysis Batch: O-40132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40132_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.504		µg/L		101	31 - 128
1-Methylphenanthrene	0.5	0.515		µg/L		103	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.528		µg/L		106	55 - 122
2,6-Dimethylnaphthalene	0.5	0.52		µg/L		104	48 - 120
2-Methylnaphthalene	0.5	0.512		µg/L		102	47 - 130
Acenaphthene	0.5	0.525		µg/L		105	53 - 131
Acenaphthylene	0.5	0.515		µg/L		103	43 - 140
Anthracene	0.5	0.519		µg/L		104	58 - 135

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 104254-BS1
Matrix: BlankMatrix
Analysis Batch: O-40132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40132_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benz[a]anthracene			0.5	0.502		µg/L		100	55 - 145		
Benzo[a]pyrene			0.5	0.51		µg/L		102	51 - 143		
Benzo[b]fluoranthene			0.5	0.549		µg/L		110	46 - 165		
Benzo[e]pyrene			0.5	0.542		µg/L		108	42 - 152		
Benzo[g,h,i]perylene			1	0.913		µg/L		91	63 - 133		
Benzo[k]fluoranthene			0.5	0.526		µg/L		105	56 - 145		
Biphenyl			0.5	0.524		µg/L		105	56 - 119		
Chrysene			0.5	0.497		µg/L		99	56 - 141		
Dibenz[a,h]anthracene			1	0.986		µg/L		99	55 - 150		
Dibenzo[a,l]pyrene			0.5	0.488		µg/L		98	50 - 150		
Dibenzothiophene			0.5	0.532		µg/L		106	46 - 126		
Disalicylidenepropanediamine			50	41.2		µg/L		82	50 - 150		
Fluoranthene			0.5	0.502		µg/L		100	60 - 146		
Fluorene			0.5	0.523		µg/L		105	58 - 131		
Indeno[1,2,3-cd]pyrene			1	0.898		µg/L		90	50 - 151		
Naphthalene			0.5	0.5		µg/L		100	41 - 126		
Perylene			0.5	0.51		µg/L		102	48 - 141		
Phenanthrene			0.5	0.522		µg/L		104	67 - 127		
Pyrene			0.5	0.495		µg/L		99	54 - 156		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*104*		*27 - 133*
(d10-Phenanthrene)	*106*		*43 - 129*
(d12-Chrysene)	*105*		*52 - 144*
(d12-Perylene)	*108*		*36 - 161*
(d8-Naphthalene)	*96*		*25 - 125*

Lab Sample ID: 104254-BS2
Matrix: BlankMatrix
Analysis Batch: O-40132

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40132_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			0.5	0.478		µg/L		96	31 - 128	5	30
1-Methylphenanthrene			0.5	0.524		µg/L		105	66 - 127	2	30
2,3,5-Trimethylnaphthalene			0.5	0.52		µg/L		104	55 - 122	2	30
2,6-Dimethylnaphthalene			0.5	0.495		µg/L		99	48 - 120	5	30
2-Methylnaphthalene			0.5	0.484		µg/L		97	47 - 130	5	30
Acenaphthene			0.5	0.512		µg/L		102	53 - 131	3	30
Acenaphthylene			0.5	0.506		µg/L		101	43 - 140	2	30
Anthracene			0.5	0.508		µg/L		102	58 - 135	2	30
Benz[a]anthracene			0.5	0.515		µg/L		103	55 - 145	3	30
Benzo[a]pyrene			0.5	0.504		µg/L		101	51 - 143	1	30
Benzo[b]fluoranthene			0.5	0.546		µg/L		109	46 - 165	1	30
Benzo[e]pyrene			0.5	0.537		µg/L		107	42 - 152	1	30
Benzo[g,h,i]perylene			1	0.914		µg/L		91	63 - 133	0	30
Benzo[k]fluoranthene			0.5	0.525		µg/L		105	56 - 145	0	30
Biphenyl			0.5	0.502		µg/L		100	56 - 119	5	30
Chrysene			0.5	0.523		µg/L		105	56 - 141	6	30

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 104254-BS2
Matrix: BlankMatrix
Analysis Batch: O-40132

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40132_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dibenz[a,h]anthracene			1	0.969		µg/L		97	55 - 150	2	30
Dibenzo[a,l]pyrene			0.5	0.421		µg/L		84	50 - 150	15	30
Dibenzothiophene			0.5	0.534		µg/L		107	46 - 126	1	30
Disalicylidenepropanediamine			50	41.4		µg/L		83	50 - 150	1	30
Fluoranthene			0.5	0.514		µg/L		103	60 - 146	3	30
Fluorene			0.5	0.518		µg/L		104	58 - 131	1	30
Indeno[1,2,3-cd]pyrene			1	0.881		µg/L		88	50 - 151	2	30
Naphthalene			0.5	0.46		µg/L		92	41 - 126	8	30
Perylene			0.5	0.509		µg/L		102	48 - 141	0	30
Phenanthrene			0.5	0.527		µg/L		105	67 - 127	1	30
Pyrene			0.5	0.513		µg/L		103	54 - 156	4	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*98*		*27 - 133*
(d10-Phenanthrene)	*106*		*43 - 129*
(d12-Chrysene)	*108*		*52 - 144*
(d12-Perylene)	*106*		*36 - 161*
(d8-Naphthalene)	*88*		*25 - 125*

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Lab Sample ID: 23VG39B12B
Matrix: WATER
Analysis Batch: 23VG39B12

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			02/17/23 12:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE					*02/17/23 12:29*	*1*

Lab Sample ID: 23VG39B12L
Matrix: WATER
Analysis Batch: 23VG39B12

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
GASOLINE			0.500	0.452		mg/L		90	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOFLUOROBENZENE	*118*		*70 - 130*

Lab Sample ID: 23B194-01M
Matrix: WATER
Analysis Batch: 23VG39B12

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
GASOLINE	ND		0.500	0.440		mg/L		88	50 - 130

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics (Continued)

Lab Sample ID: 23B194-01M
Matrix: WATER
Analysis Batch: 23VG39B12

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

Surrogate	MS %Recovery	MS Qualifier	Limits
BROMOFLUOROBENZENE	106		60 - 140

Lab Sample ID: 23B194-01S
Matrix: WATER
Analysis Batch: 23VG39B12

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
GASOLINE	ND		0.500	0.439		mg/L		88	50 - 130	0	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
BROMOFLUOROBENZENE	102		60 - 140

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Lab Sample ID: 23DSB031WB
Matrix: WATER
Analysis Batch: 23DSB031W

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			02/20/23 12:26	1
JP5	ND	U	0.050		mg/L			02/20/23 12:26	1
JP8	ND	U	0.050		mg/L			02/20/23 12:26	1
MOTOR OIL	ND	U	0.050		mg/L			02/20/23 12:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE					02/20/23 12:26	1
HEXACOSANE					02/20/23 12:26	1

Lab Sample ID: 23DSB031WL
Matrix: WATER
Analysis Batch: 23DSB031W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
DIESEL			2.50	2.53		mg/L		101	50 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	108		60 - 130
HEXACOSANE	99		60 - 130

Lab Sample ID: 23J5B031WL
Matrix: WATER
Analysis Batch: 23DSB031W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
JP5			2.50	1.71		mg/L		68	30 - 160		

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO (Continued)

Lab Sample ID: 23J5B031WL
Matrix: WATER
Analysis Batch: 23DSB031W

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	96		60 - 130
HEXACOSANE	94		60 - 130

Lab Sample ID: 23J8B031WL
Matrix: WATER
Analysis Batch: 23DSB031W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
JP8			2.50	2.27		mg/L		91	30 - 160		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	109		60 - 130
HEXACOSANE	106		60 - 130

GC/MS Semi VOA

Prep Batch: 49442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-1 - RA	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	
380-37894-2 - RA	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	525.2	
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	
380-37894-3 - RA	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	
MB 810-49442/1-A - RA	Method Blank	Total/NA	Water	525.2	
MB 810-49442/1-A	Method Blank	Total/NA	Water	525.2	
LCS 810-49442/2-A	Lab Control Sample	Total/NA	Water	525.2	
LLCS 810-49442/3-A	Lab Control Sample	Total/NA	Water	525.2	
810-53831-E-1-A MS - RA	Matrix Spike	Total/NA	Water	525.2	
380-37894-2 DU - RA	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	525.2	

Analysis Batch: 50096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-1 - RA	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	49442
380-37894-2 - RA	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	525.2	49442
380-37894-3 - RA	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	49442
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	49442
MB 810-49442/1-A	Method Blank	Total/NA	Water	525.2	49442
MB 810-49442/1-A - RA	Method Blank	Total/NA	Water	525.2	49442
LCS 810-49442/2-A	Lab Control Sample	Total/NA	Water	525.2	49442
LLCS 810-49442/3-A	Lab Control Sample	Total/NA	Water	525.2	49442
810-53831-E-1-A MS - RA	Matrix Spike	Total/NA	Water	525.2	49442
380-37894-2 DU - RA	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	525.2	49442

LCMS

Prep Batch: 49184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1 DW	
MBL 810-49184/1-A	Method Blank	Total/NA	Water	537.1 DW	
LLCS 810-49184/2-A	Lab Control Sample	Total/NA	Water	537.1 DW	
810-53932-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
810-53932-D-3-A DU	Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 49187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	537.1 DW	
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1 DW	
MBL 810-49187/10-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 810-49187/11-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LLCS 810-49187/9-A	Lab Control Sample	Total/NA	Water	537.1 DW	
810-53841-B-1-A LMS	Matrix Spike	Total/NA	Water	537.1 DW	
810-53482-B-1-A DU	Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 49280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	537.1	49187
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1	49187
MBL 810-49187/10-A	Method Blank	Total/NA	Water	537.1	49187
LCS 810-49187/11-A	Lab Control Sample	Total/NA	Water	537.1	49187
LLCS 810-49187/9-A	Lab Control Sample	Total/NA	Water	537.1	49187

LCMS (Continued)

Analysis Batch: 49280 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-53841-B-1-A LMS	Matrix Spike	Total/NA	Water	537.1	49187
810-53482-B-1-A DU	Duplicate	Total/NA	Water	537.1	49187

Analysis Batch: 49286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1	49184
MBL 810-49184/1-A	Method Blank	Total/NA	Water	537.1	49184
LLCS 810-49184/2-A	Lab Control Sample	Total/NA	Water	537.1	49184
810-53932-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	49184
810-53932-D-3-A DU	Duplicate	Total/NA	Water	537.1	49184

Prep Batch: 49433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	537.1 DW	
MBL 810-49433/1-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 810-49433/3-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LLCS 810-49433/2-A	Lab Control Sample	Total/NA	Water	537.1 DW	
810-53735-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
810-53529-Z-1-A DU	Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 49481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	537.1	49433
MBL 810-49433/1-A	Method Blank	Total/NA	Water	537.1	49433
LCS 810-49433/3-A	Lab Control Sample	Total/NA	Water	537.1	49433
LLCS 810-49433/2-A	Lab Control Sample	Total/NA	Water	537.1	49433
810-53735-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	49433
810-53529-Z-1-A DU	Duplicate	Total/NA	Water	537.1	49433

Prep Batch: 50545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	533	
MBL 810-50545/1-A	Method Blank	Total/NA	Water	533	
LLCS 810-50545/2-A	Lab Control Sample	Total/NA	Water	533	

Analysis Batch: 50681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	533	50545
MBL 810-50545/1-A	Method Blank	Total/NA	Water	533	50545
LLCS 810-50545/2-A	Lab Control Sample	Total/NA	Water	533	50545

Prep Batch: 51061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400	Total/NA	Drinking Water	533	
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	
MBL 810-51061/1-A	Method Blank	Total/NA	Water	533	
LLCS 810-51061/2-A	Lab Control Sample	Total/NA	Water	533	
810-54045-E-2-A LMS	Matrix Spike	Total/NA	Water	533	
380-37894-3 DU	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	

QC Association Summary

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

Job ID: 380-37894-1

LCMS

Analysis Batch: 51292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	51061
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	533	51061
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	51061
MBL 810-51061/1-A	Method Blank	Total/NA	Water	533	51061
LLCS 810-51061/2-A	Lab Control Sample	Total/NA	Water	533	51061
810-54045-E-2-A LMS	Matrix Spike	Total/NA	Water	533	51061
380-37894-3 DU	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	51061

Subcontract

Analysis Batch: O-40132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40132_P
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40132_P
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40132_P
104254-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40132_P
104254-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40132_P
104254-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40132_P

Analysis Batch: 23DSB031W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/JP8	
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/JP8	
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/JP8	
23DSB031WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
23DSB031WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
23J5B031WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
23J8B031WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	

Analysis Batch: 23VG39B12

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	

Subcontract (Continued)

Analysis Batch: 23VG39B12 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-37894-4	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-37894-5	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-37894-6	TB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VG39B12B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VG39B12L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23B194-01M	Matrix Spike	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23B194-01S	Matrix Spike Duplicate	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-40132_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-37894-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	EPA_625	
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	EPA_625	
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	EPA_625	
104254-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
104254-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
104254-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-37894-1

Date Collected: 02/13/23 11:02

Matrix: Drinking Water

Date Received: 02/15/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2	RA		49442	HB	EA SB	02/27/23 07:10
Total/NA	Analysis	525.2	RA	1	50096	CG	EA SB	03/03/23 08:18
Total/NA	Prep	533			51061	NR	EA SB	03/10/23 06:24
Total/NA	Analysis	533		1	51292	CM	EA SB	03/13/23 20:27
Total/NA	Prep	537.1 DW			49184	AD	EA SB	02/24/23 07:29
Total/NA	Analysis	537.1		1	49286	MH	EA SB	02/26/23 19:45
Total/NA	Prep	EPA_625		1	O-40132_P			02/16/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40132	YC		02/26/23 08:39
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39B12	SCerva		02/17/23 16:05
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSB031W	SDees		02/20/23 15:50

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-37894-2

Date Collected: 02/13/23 10:32

Matrix: Drinking Water

Date Received: 02/15/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2	RA		49442	HB	EA SB	02/27/23 07:10
Total/NA	Analysis	525.2	RA	1	50096	CG	EA SB	03/03/23 08:44
Total/NA	Prep	533			51061	NR	EA SB	03/10/23 06:24
Total/NA	Analysis	533		1	51292	CM	EA SB	03/13/23 20:41
Total/NA	Prep	537.1 DW			49187	SS	EA SB	02/24/23 07:41
Total/NA	Analysis	537.1		1	49280	MH	EA SB	02/26/23 00:58
Total/NA	Prep	EPA_625		1	O-40132_P			02/16/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40132	YC		02/26/23 10:22
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39B12	SCerva		02/17/23 18:30
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSB031W	SDees		02/20/23 16:09

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-37894-3

Date Collected: 02/13/23 10:07

Matrix: Drinking Water

Date Received: 02/15/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2	RA		49442	HB	EA SB	02/27/23 07:10
Total/NA	Analysis	525.2	RA	1	50096	CG	EA SB	03/03/23 09:37
Total/NA	Prep	525.2			49442	HB	EA SB	02/27/23 07:10
Total/NA	Analysis	525.2		1	50096	CG	EA SB	03/03/23 14:59

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-37894-3

Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			51061	NR	EA SB	03/10/23 06:24
Total/NA	Analysis	533		1	51292	CM	EA SB	03/13/23 20:54
Total/NA	Prep	537.1 DW			49187	SS	EA SB	02/24/23 07:41
Total/NA	Analysis	537.1		1	49280	MH	EA SB	02/26/23 01:09
Total/NA	Prep	EPA_625		1	O-40132_P			02/16/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40132	YC		02/26/23 12:05
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39B12	SCerva		02/17/23 19:06
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSB031W	SDees		02/20/23 16:27

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-37894-4

Date Collected: 02/13/23 11:02
Date Received: 02/15/23 10:30

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39B12	SCerva		02/17/23 19:42

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-37894-5

Date Collected: 02/13/23 10:32
Date Received: 02/15/23 10:30

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39B12	SCerva		02/17/23 20:18

Client Sample ID: TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-37894-6

Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39B12	SCerva		02/17/23 20:54

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-37894-9

Date Collected: 02/13/23 10:07
Date Received: 02/15/23 10:30

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			50545	NR	EA SB	03/07/23 06:27
Total/NA	Analysis	533		1	50681	CM	EA SB	03/09/23 04:25

Lab Chronicle

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

Job ID: 380-37894-1

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-37894-9

Date Collected: 02/13/23 10:07

Matrix: Water

Date Received: 02/15/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			49433	AD	EA SB	02/27/23 06:15
Total/NA	Analysis	537.1		1	49481	MH	EA SB	02/28/23 07:10

Laboratory References:

= Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806

EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Accreditation/Certification Summary

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

Job ID: 380-37894-1

Laboratory: Eurofins Eaton Analytical South Bend

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	ISO/IEC 17025	5794.01	07-31-24
Alabama	State	40700	06-30-23
Alaska	State	IN00035	06-30-23
Arizona	State	AZ0432	07-26-23
Arkansas (DW)	State	EPA IN00035	06-30-23
California	State	2920	06-30-23
Colorado	State	IN00035	02-29-24
Connecticut	State	PH-0132	03-31-22 *
Delaware (DW)	State	IN00035	06-30-23
Florida	NELAP	E87775	06-30-23
Georgia (DW)	State	929	06-30-23
Hawaii	State	IN035	06-30-23
Idaho (DW)	State	IN00035	12-31-23
IL Dept. of Public Health (Micro)	State	17767	06-30-23
Illinois	NELAP	200001	09-30-23
Indiana	State	C-71-01	12-31-25
Indiana (Micro)	State	M-76-07	12-31-25
Iowa	State	IA Lab #098	11-01-23
Kansas	NELAP	E-10233	10-31-23
Kentucky (DW)	State	KY90056	12-31-22 *
Louisiana (DW)	State	LA014	12-31-23
Maine	State	IN00035	05-01-23
Maryland	State	209	03-31-23
Massachusetts	State	M-IN035	06-30-23
MI - RadChem Recognition	State	9926	06-30-23
Michigan	State	9926	03-31-23
Minnesota	NELAP	1989807	12-31-23
Mississippi	State	IN00035	06-30-22 *
Missouri	State	880	09-30-24
Montana (DW)	State	CERT0026	01-02-24
Nebraska	State	NE-OS-05-04	06-30-23
Nevada	State	IN000352021-2	07-31-23
New Hampshire	NELAP	2124	11-05-23
New Jersey	NELAP	IN598	06-30-23
New Mexico	State	IN00035	06-30-23
New York	NELAP	11398	03-29-23
North Carolina (DW)	State	18700	07-31-23
North Dakota	State	R-035	06-30-23
Ohio	State	87775	06-30-23
Oklahoma	NELAP	D9508	08-31-23
Oregon	NELAP	4156	09-16-23
Pennsylvania	NELAP	68-00466	04-30-23
Puerto Rico	State	IN00035	04-01-24
Rhode Island	State	LAO00343	12-30-23
South Carolina	State	95005001	06-30-23
South Dakota (DW)	State	IN00035	06-30-23
Tennessee	State	TN02973	06-30-23
Texas	NELAP	T104704187-22-16	12-31-23
Texas	TCEQ Water Supply	TX207	06-30-23
USEPA Reg X SDWA	US Federal Programs	IN00035	08-20-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

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

Job ID: 380-37894-1

Laboratory: Eurofins Eaton Analytical South Bend (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
USEPA UCMR 5	US Federal Programs	IN00035	12-31-25
Utah	NELAP	IN00035	07-31-23
Vermont	State	VT-8775	11-15-23
Virginia	NELAP	460275	03-14-23
Washington	State	C837	01-01-24
West Virginia (DW)	State	9927 C	12-31-23
Wisconsin	State	999766900	08-31-23
Wisconsin (Micro)	State	10121	12-31-22 *
Wyoming	State	8TMS-L	06-30-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

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

Job ID: 380-37894-1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA SB
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA SB
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA SB
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
8015	8015 - TPH DRO/ORO	EPA	
8015B	SW846 8015B Gasoline Range Organics	SW846	
525.2	Extraction of Semivolatile Compounds	EPA	EA SB
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA SB
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA SB

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

= Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806

EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Sample Summary

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

Job ID: 380-37894-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-37894-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	02/13/23 11:02	02/15/23 10:30	HI0000331
380-37894-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	02/13/23 10:32	02/15/23 10:30	HI0000331
380-37894-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Drinking Water	02/13/23 10:07	02/15/23 10:30	HI0000331
380-37894-4	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Water	02/13/23 11:02	02/15/23 10:30	
380-37894-5	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	02/13/23 10:32	02/15/23 10:30	
380-37894-6	TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	Water	02/13/23 10:07	02/15/23 10:30	
380-37894-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	Water	02/13/23 10:07	02/15/23 10:30	

EMAX LABORATORIES, INC.
3051 Fujita Street
Torrance, CA 90505
Tel: (310)-618-8889

Date: 03-13-2023
EMAX Batch No.: 23B194

Attn: Jackie Contreras

Eurofins Eaton Analytical
750 Royal Oaks Dr., Suite 100
Monrovia, CA 91016-3629

Subject: Laboratory Report
Project: 380-37894

Enclosed is the Laboratory report for samples received on 02/16/23.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-37894-1	B194-01	02/13/23	WATER	TPH GASOLINE
				TPH
380-37894-2	B194-02	02/13/23	WATER	TPH GASOLINE
				TPH
380-37B94-3	B194-03	02/13/23	WATER	TPH GASOLINE
				TPH
380-37894-4	B194-04	02/13/23	WATER	TPH GASOLINE
380-37894-5	B194-05	02/13/23	WATER	TPH GASOLINE
3B0-37894-6	B194-06	02/13/23	WATER	TPH GASOLINE
380-37894-1MS	B194-01M	02/13/23	WATER	TPH GASOLINE
380-37894-1MSD	B194-01S	02/13/23	WATER	TPH GASOLINE

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912022-22
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

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

Chain of Custody Record 23B194

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-40103.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: EMAX Laboratories Inc		Accreditations Required (See note): State - Hawaii		Job #: 380-37894-1
Address: 3051 Fujita Street, ,	Due Date Requested: 3/1/2023			
City: Torrance	TAT Requested (days):			
State, Zip: CA, 90505				
Phone:	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

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:

Analysis Requested

	Sample Identification - Client ID (Lab ID)	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)	SUB (8015 Gas (Purgeable) LL (EAL))/ 8015 Gas (Purgeable) LL (EAL)	SUB (8015 LL DRO/MRO/JP5/JP8)/ 8015 LL DRO/MRO/JP5/JP8	Total Number of containers	Special Instructions/Note:
				Preservation Code:							
1	AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-37894-1)	2/13/23	11:02 Hawaiian		Water			X	X	6	See Attached Instructions
2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-37894-2)	2/13/23	10:32 Hawaiian		Water			X	X	6	See Attached Instructions
3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-37894-3)	2/13/23	10:07 Hawaiian		Water			X	X	6	See Attached Instructions
4	TB:AIEA GULCH WELLS P2 (331-202-TP072) (380-37894-4)	2/13/23	11:02 Hawaiian		Water			X		2	See Attached Instructions
5	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-3789	2/13/23	10:32 Hawaiian		Water			X		2	See Attached Instructions
6	TB: HALAWA WELLS UNITS 1&2 (331-206-TP065) (380-37894-6	2/13/23	10:07 Hawaiian		Water			X		2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	G.REITNER	02/16/2023 13:19	EEA	Arnold Vasquez	2/16/23 13:17	DCS
2		2/16/23 2:30	DCS		2/16/23 14:35	EMAX
3						

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

EMAX LABORATORIES, INC.

REFERENCE: EMAX-SM02 Rev. 12

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 23B194 Cecilia Chavez
☐ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient ~~Maria Rivera~~ MR 2/16/23
☐ EMAX Courier ☒ Client Delivery		Date 02/16/23 Time 14:30

COC INSPECTION

☒ Client Name	☒ Client PM/FC	☐ Sampler Name	☒ Sampling Date/Time	☒ Sample ID	☒ Matrix
☒ Address	☒ Tel # / Fax #	☐ Courier Signature	☒ Analysis Required	☐ Preservative (if any)	☒ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☒ Cooler	☐ Box	☐ Other		
Condition correction	☐ Custody Seal	☐ Intact	☐ Damaged		
Packaging factor: -0.2	☒ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☒ Cooler 1 1.3/1.1 °C	☐ Cooler 2 _____ °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	*A - S/N* 221052768	*B - S/N* 210760237	*C - S/N* _____	*D - S/N* _____	

Comments: ☐ Temperature is out of range. PM was informed IMMEDIATELY.

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1-3	5,6,11,12,17,18	D1	JP5 / JP8 not indicated on label	R1
4-6	19-21,23	D22	2nd Date/time reads: 2/9/23 at 10:13	

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. MB 2/23/23

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? ☐ YES ☐ NO

☐ Continue to next page.

LEGEND:

Code	Description- Sample Management
D1	Analysis is not indicated in label
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	2nd Date/time on label is incorrect
D23	_____
D24	_____

Code	Description-Sample Management
R1	Proceed as indicated in ☒ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	_____
R9	_____
R10	_____
R11	_____
R12	_____

REVIEWS:

Sample Labeling Maria Rivera Date 02/16/23

SRF Cecilia Date 2/17/23

PM MB Date 2/23/23

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL1

380-37894

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 23B194

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-37894

SDG : 23B194

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of six(6) water samples were received on 02/16/23 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method 5030B/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VG39B12B - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. VG39B12L/VG39B12C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Gasoline was within MS QC limits in B194-01M/B194-01S. Refer to Matrix QC summary form for details.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL
Project : 380-37894

SDG NO. : 23B194
Instrument ID : GCT039

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VG39B12B	1	NA	02/17/2312:29	02/17/2312:29	EB17005A	EB17004A	23VG39B12	Method Blank
LCS1W	VG39B12L	1	NA	02/17/2313:05	02/17/2313:05	EB17006A	EB17004A	23VG39B12	Lab Control Sample (LCS)
LCD1W	VG39B12C	1	NA	02/17/2313:41	02/17/2313:41	EB17007A	EB17004A	23VG39B12	LCS Duplicate
380-37894-1	B194-01	1	NA	02/17/2316:05	02/17/2316:05	EB17011A	EB17004A	23VG39B12	Field Sample
380-37894-1MS	B194-01M	1	NA	02/17/2316:41	02/17/2316:41	EB17012A	EB17004A	23VG39B12	Matrix Spike Sample (MS)
380-37894-1MSD	B194-01S	1	NA	02/17/2317:17	02/17/2317:17	EB17013A	EB17004A	23VG39B12	MS Duplicate (MSD)
380-37894-2	B194-02	1	NA	02/17/2318:30	02/17/2318:30	EB17015A	EB17014A	23VG39B12	Field Sample
380-37894-3	B194-03	1	NA	02/17/2319:06	02/17/2319:06	EB17016A	EB17014A	23VG39B12	Field Sample
380-37894-4	B194-04	1	NA	02/17/2319:42	02/17/2319:42	EB17017A	EB17014A	23VG39B12	Field Sample
380-37894-5	B194-05	1	NA	02/17/2320:18	02/17/2320:18	EB17018A	EB17014A	23VG39B12	Field Sample
380-37894-6	B194-06	1	NA	02/17/2320:54	02/17/2320:54	EB17019A	EB17014A	23VG39B12	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/13/23 11:02
Project	: 380-37894	Date Received:	02/16/23
Batch No.	: 23B194	Date Extracted:	02/17/23 16:05
Sample ID	: 380-37894-1	Date Analyzed:	02/17/23 16:05
Lab Samp ID:	B194-01	Dilution Factor:	1
Lab File ID:	EB17011A	Matrix:	WATER
Ext Btch ID:	23VG39B12	% Moisture:	NA
Calib. Ref.:	EB17004A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0339	0.0400	85	60-140

Notes:
Parameter H-C Range
Gasoline C6-C10
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/13/23 10:32
Project	: 380-37894	Date Received:	02/16/23
Batch No.	: 23B194	Date Extracted:	02/17/23 18:30
Sample ID	: 380-37894-2	Date Analyzed:	02/17/23 18:30
Lab Samp ID:	B194-02	Dilution Factor:	1
Lab File ID:	EB17015A	Matrix:	WATER
Ext Btch ID:	23VG39B12	% Moisture:	NA
Calib. Ref.:	EB17014A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0335	0.0400	84	60-140

Notes:
Parameter H-C Range
Gasoline C6-C10
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/13/23 10:07
Project	: 380-37894	Date Received:	02/16/23
Batch No.	: 23B194	Date Extracted:	02/17/23 19:06
Sample ID	: 380-37894-3	Date Analyzed:	02/17/23 19:06
Lab Samp ID:	B194-03	Dilution Factor:	1
Lab File ID:	EB17016A	Matrix:	WATER
Ext Btch ID:	23VG39B12	% Moisture:	NA
Calib. Ref.:	EB17014A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0325	0.0400	81	60-140

Notes:
Parameter H-C Range
Gasoline C6-C10
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/13/23 11:02
Project	: 380-37894	Date Received:	02/16/23
Batch No.	: 23B194	Date Extracted:	02/17/23 19:42
Sample ID	: 380-37894-4	Date Analyzed:	02/17/23 19:42
Lab Samp ID:	B194-04	Dilution Factor:	1
Lab File ID:	EB17017A	Matrix:	WATER
Ext Btch ID:	23VG39B12	% Moisture:	NA
Calib. Ref.:	EB17014A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0329	0.0400	82	60-140

Notes:

Parameter	H-C Range
Gasoline	C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 5ml	Final Volume	: 5ml
Prepared by	: SCerva	Analyzed by	: SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/13/23 10:32
Project : 380-37894	Date Received: 02/16/23
Batch No. : 23B194	Date Extracted: 02/17/23 20:18
Sample ID : 380-37894-5	Date Analyzed: 02/17/23 20:18
Lab Samp ID: B194-05	Dilution Factor: 1
Lab File ID: EB17018A	Matrix: WATER
Ext Btch ID: 23VG39B12	% Moisture: NA
Calib. Ref.: EB17014A	Instrument ID: 39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0330	0.0400	82	60-140

Notes:
Parameter H-C Range
Gasoline C6-C10
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/13/23 10:07
Project	: 380-37894	Date Received:	02/16/23
Batch No.	: 23B194	Date Extracted:	02/17/23 20:54
Sample ID	: 380-37894-6	Date Analyzed:	02/17/23 20:54
Lab Samp ID:	B194-06	Dilution Factor:	1
Lab File ID:	EB17019A	Matrix:	WATER
Ext Btch ID:	23VG39B12	% Moisture:	NA
Calib. Ref.:	EB17014A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0324	0.0400	81	60-140

Notes:
Parameter H-C Range
Gasoline C6-C10
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

QC SUMMARIES

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/17/23 12:29
Project	: 380-37894	Date Received:	02/17/23
Batch No.	: 23B194	Date Extracted:	02/17/23 12:29
Sample ID	: MBLK1W	Date Analyzed:	02/17/23 12:29
Lab Samp ID:	VG39B12B	Dilution Factor:	1
Lab File ID:	EB17005A	Matrix:	WATER
Ext Btch ID:	23VG39B12	% Moisture:	NA
Calib. Ref.:	EB17004A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0334	0.0400	83	60-140

Notes:
Parameter H-C Range
Gasoline C6-C10
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-37894
BATCH NO. : 23B194
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VG39B12B	VG39B12L	VG39B12C
LAB FILE ID	: EB17005A	EB17006A	EB17007A
DATE PREPARED	: 02/17/23 12:29	02/17/23 13:05	02/17/23 13:41
DATE ANALYZED	: 02/17/23 12:29	02/17/23 13:05	02/17/23 13:41
PREP BATCH	: 23VG39B12	23VG39B12	23VG39B12
CALIBRATION REF	: EB17004A	EB17004A	EB17004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.452	90	0.500	0.459	92	2	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0470	118	0.0400	0.0438	110	70-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-37894
BATCH NO. : 23B194
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 380-37894-1	380-37894-1MS	380-37894-1MSD
LAB SAMPLE ID	: B194-01	B194-01M	B194-01S
LAB FILE ID	: EB17011A	EB17012A	EB17013A
DATE PREPARED	: 02/17/23 16:05	02/17/23 16:41	02/17/23 17:17
DATE ANALYZED	: 02/17/23 16:05	02/17/23 16:41	02/17/23 17:17
PREP BATCH	: 23VG39B12	23VG39B12	23VG39B12
CALIBRATION REF	: EB17004A	EB17004A	EB17004A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.440	88	0.500	0.439	88	0	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0423	106	0.0400	0.0409	102	60-140

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL1

380-37894

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23B194

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-37894

SDG : 23B194

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

A total of three(3) water samples were received on 02/16/23 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSB031WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. DSB031WL/DSB031WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-37894

SDG : 23B194

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of three(3) water samples were received on 02/16/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSB031WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. J5B031WL/J5B031WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-37894

SDG : 23B194

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of three(3) water samples were received on 02/16/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSB031WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. J8B031WL/J8B031WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-37894

SDG NO. : 23B194
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSB031WB	1	NA	02/20/2312:26	02/17/2313:15	LB20010A	LB20004A	23DSB031W	Method Blank
LCS1W	DSB031WL	1	NA	02/20/2312:44	02/17/2313:15	LB20011A	LB20004A	23DSB031W	Lab Control Sample (LCS)
LCD1W	DSB031WC	1	NA	02/20/2313:03	02/17/2313:15	LB20012A	LB20004A	23DSB031W	LCS Duplicate
380-37894-1	B194-01	1	NA	02/20/2315:50	02/17/2313:15	LB20021A	LB20004A	23DSB031W	Field Sample
380-37894-2	B194-02	1	NA	02/20/2316:09	02/17/2313:15	LB20022A	LB20004A	23DSB031W	Field Sample
380-37894-3	B194-03	1	NA	02/20/2316:27	02/17/2313:15	LB20023A	LB20004A	23DSB031W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-37894

SDG NO. : 23B194
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSB031WB	1	NA	02/20/2312:26	02/17/2313:15	LB20010A	LB20005A	23DSB031W	Method Blank
LCS1W	J5B031WL	1	NA	02/20/2313:22	02/17/2313:15	LB20013A	LB20005A	23DSB031W	Lab Control Sample (LCS)
LCD1W	J5B031WC	1	NA	02/20/2313:40	02/17/2313:15	LB20014A	LB20005A	23DSB031W	LCS Duplicate
380-37894-1	B194-01	1	NA	02/20/2315:50	02/17/2313:15	LB20021A	LB20005A	23DSB031W	Field Sample
380-37894-2	B194-02	1	NA	02/20/2316:09	02/17/2313:15	LB20022A	LB20005A	23DSB031W	Field Sample
380-37894-3	B194-03	1	NA	02/20/2316:27	02/17/2313:15	LB20023A	LB20005A	23DSB031W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-37894

SDG NO. : 23B194
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSB031WB	1	NA	02/20/2312:26	02/17/2313:15	LB20010A	LB20006A	23DSB031W	Method Blank
LCS1W	J8B031WL	1	NA	02/20/2313:59	02/17/2313:15	LB20015A	LB20006A	23DSB031W	Lab Control Sample (LCS)
LCD1W	J8B031WC	1	NA	02/20/2314:17	02/17/2313:15	LB20016A	LB20006A	23DSB031W	LCS Duplicate
380-37894-1	B194-01	1	NA	02/20/2315:50	02/17/2313:15	LB20021A	LB20006A	23DSB031W	Field Sample
380-37894-2	B194-02	1	NA	02/20/2316:09	02/17/2313:15	LB20022A	LB20006A	23DSB031W	Field Sample
380-37894-3	B194-03	1	NA	02/20/2316:27	02/17/2313:15	LB20023A	LB20006A	23DSB031W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/13/23 11:02
Project : 380-37894	Date Received: 02/16/23
Batch No. : 23B194	Date Extracted: 02/17/23 13:15
Sample ID : 380-37894-1	Date Analyzed: 02/20/23 15:50
Lab Samp ID: 23B194-01	Dilution Factor: 1
Lab File ID: LB20021A	Matrix: WATER
Ext Btch ID: 23DSB031W	% Moisture: NA
Calib. Ref.: LB20004A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.028	0.014
Motor Oil	ND	0.056	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.461	0.555	83	60-130
Hexacosane	0.121	0.139	87	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 900ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/13/23 11:02
Project : 380-37894	Date Received: 02/16/23
Batch No. : 23B194	Date Extracted: 02/17/23 13:15
Sample ID : 380-37894-1	Date Analyzed: 02/20/23 15:50
Lab Samp ID: 23B194-01	Dilution Factor: 1
Lab File ID: LB20021A	Matrix: WATER
Ext Btch ID: 23DSB031W	% Moisture: NA
Calib. Ref.: LB20005A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.056	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.461	0.555	83	60-130
Hexacosane	0.121	0.139	87	60-130

Notes:
RL : Reporting Limit

Parameter	H-C Range
JP5	C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 900ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/13/23 11:02
Project : 380-37894	Date Received: 02/16/23
Batch No. : 23B194	Date Extracted: 02/17/23 13:15
Sample ID : 380-37894-1	Date Analyzed: 02/20/23 15:50
Lab Samp ID: 23B194-01	Dilution Factor: 1
Lab File ID: LB20021A	Matrix: WATER
Ext Btch ID: 23DSB031W	% Moisture: NA
Calib. Ref.: LB20006A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.056	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.461	0.555	83	60-130
Hexacosane	0.121	0.139	87	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP8 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 900ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/13/23 10:32
Project : 380-37894	Date Received: 02/16/23
Batch No. : 23B194	Date Extracted: 02/17/23 13:15
Sample ID : 380-37894-2	Date Analyzed: 02/20/23 16:09
Lab Samp ID: 23B194-02	Dilution Factor: 1
Lab File ID: LB20022A	Matrix: WATER
Ext Btch ID: 23DSB031W	% Moisture: NA
Calib. Ref.: LB20004A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.026	0.013
Motor Oil	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.473	0.525	90	60-130
Hexacosane	0.137	0.131	104	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 950ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/13/23 10:32
Project : 380-37894	Date Received: 02/16/23
Batch No. : 23B194	Date Extracted: 02/17/23 13:15
Sample ID : 380-37894-2	Date Analyzed: 02/20/23 16:09
Lab Samp ID: 23B194-02	Dilution Factor: 1
Lab File ID: LB20022A	Matrix: WATER
Ext Btch ID: 23DSB031W	% Moisture: NA
Calib. Ref.: LB20005A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.473	0.525	90	60-130
Hexacosane	0.137	0.131	104	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP5 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 950ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/13/23 10:32
Project : 380-37894	Date Received: 02/16/23
Batch No. : 23B194	Date Extracted: 02/17/23 13:15
Sample ID : 380-37894-2	Date Analyzed: 02/20/23 16:09
Lab Samp ID: 23B194-02	Dilution Factor: 1
Lab File ID: LB20022A	Matrix: WATER
Ext Btch ID: 23DSB031W	% Moisture: NA
Calib. Ref.: LB20006A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.473	0.525	90	60-130
Hexacosane	0.137	0.131	104	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP8 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 950ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/13/23 10:07
Project : 380-37894	Date Received: 02/16/23
Batch No. : 23B194	Date Extracted: 02/17/23 13:15
Sample ID : 380-37894-3	Date Analyzed: 02/20/23 16:27
Lab Samp ID: 23B194-03	Dilution Factor: 1
Lab File ID: LB20023A	Matrix: WATER
Ext Btch ID: 23DSB031W	% Moisture: NA
Calib. Ref.: LB20004A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.025	0.013
Motor Oil	ND	0.051	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.419	0.505	83	60-130
Hexacosane	0.117	0.126	93	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 990ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/13/23 10:07
Project	: 380-37894	Date Received:	02/16/23
Batch No.	: 23B194	Date Extracted:	02/17/23 13:15
Sample ID	: 380-37894-3	Date Analyzed:	02/20/23 16:27
Lab Samp ID:	23B194-03	Dilution Factor:	1
Lab File ID:	LB20023A	Matrix:	WATER
Ext Btch ID:	23DSB031W	% Moisture:	NA
Calib. Ref.:	LB20005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.051	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.419	0.505	83	60-130
Hexacosane	0.117	0.126	93	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP5 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 990ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/13/23 10:07
Project : 380-37894	Date Received: 02/16/23
Batch No. : 23B194	Date Extracted: 02/17/23 13:15
Sample ID : 380-37894-3	Date Analyzed: 02/20/23 16:27
Lab Samp ID: 23B194-03	Dilution Factor: 1
Lab File ID: LB20023A	Matrix: WATER
Ext Btch ID: 23DSB031W	% Moisture: NA
Calib. Ref.: LB20006A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.051	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.419	0.505	83	60-130
Hexacosane	0.117	0.126	93	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP8 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 990ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/17/23 13:15
Project	: 380-37894	Date Received:	02/17/23
Batch No.	: 23B194	Date Extracted:	02/17/23 13:15
Sample ID	: MBLK1W	Date Analyzed:	02/20/23 12:26
Lab Samp ID:	DSB031WB	Dilution Factor:	1
Lab File ID:	LB20010A	Matrix:	WATER
Ext Btch ID:	23DSB031W	% Moisture:	NA
Calib. Ref.:	LB20004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.025	0.012
Motor Oil	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.437	0.500	87	60-130
Hexacosane	0.114	0.125	91	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml Final Volume : 5ml

Prepared by : POreto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-37894
BATCH NO. : 23B194
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSB031WB	DSB031WL	DSB031WC
LAB FILE ID	: LB20010A	LB20011A	LB20012A
DATE PREPARED	: 02/17/23 13:15	02/17/23 13:15	02/17/23 13:15
DATE ANALYZED	: 02/20/23 12:26	02/20/23 12:44	02/20/23 13:03
PREP BATCH	: 23DSB031W	23DSB031W	23DSB031W
CALIBRATION REF:	LB20004A	LB20004A	LB20004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.50	2.53	101	2.50	2.74	110	8	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.542	108	0.500	0.432	86	60-130
Hexacosane	0.125	0.124	99	0.125	0.131	105	60-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/17/23 13:15
Project	: 380-37894	Date Received:	02/17/23
Batch No.	: 23B194	Date Extracted:	02/17/23 13:15
Sample ID	: MBLK1W	Date Analyzed:	02/20/23 12:26
Lab Samp ID:	DSB031WB	Dilution Factor:	1
Lab File ID:	LB20010A	Matrix:	WATER
Ext Btch ID:	23DSB031W	% Moisture:	NA
Calib. Ref.:	LB20005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.437	0.500	87	60-130
Hexacosane	0.114	0.125	91	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP5 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 1000ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-37894
BATCH NO. : 23B194
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSB031WB	J5B031WL	J5B031WC
LAB FILE ID	: LB20010A	LB20013A	LB20014A
DATE PREPARED	: 02/17/23 13:15	02/17/23 13:15	02/17/23 13:15
DATE ANALYZED	: 02/20/23 12:26	02/20/23 13:22	02/20/23 13:40
PREP BATCH	: 23DSB031W	23DSB031W	23DSB031W
CALIBRATION REF	: LB20005A	LB20005A	LB20005A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.50	1.71	68	2.50	1.81	72	6	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.482	96	0.500	0.505	101	60-130
Hexacosane	0.125	0.118	94	0.125	0.126	101	60-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/17/23 13:15
Project : 380-37894	Date Received: 02/17/23
Batch No. : 23B194	Date Extracted: 02/17/23 13:15
Sample ID : MBLK1W	Date Analyzed: 02/20/23 12:26
Lab Samp ID: DSB031WB	Dilution Factor: 1
Lab File ID: LB20010A	Matrix: WATER
Ext Btch ID: 23DSB031W	% Moisture: NA
Calib. Ref.: LB20006A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.437	0.500	87	60-130
Hexacosane	0.114	0.125	91	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP8 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 1000ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-37894
BATCH NO. : 23B194
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSB031WB	J8B031WL	J8B031WC
LAB FILE ID	: LB20010A	LB20015A	LB20016A
DATE PREPARED	: 02/17/23 13:15	02/17/23 13:15	02/17/23 13:15
DATE ANALYZED	: 02/20/23 12:26	02/20/23 13:59	02/20/23 14:17
PREP BATCH	: 23DSB031W	23DSB031W	23DSB031W
CALIBRATION REF	: LB20006A	LB20006A	LB20006A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP8	ND	2.50	2.27	91	2.50	1.86	74	20	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.543	109	0.500	0.537	107	60-130
Hexacosane	0.125	0.133	106	0.125	0.121	97	60-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

PHYSIS
TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

February 27, 2023

Rachelle Arada
Eurofins Eaton Analytical
750 Royal Oaks Drive
Suite 100
Monrovia, CA 91016-

Project Name: RED-HILL Project # 38001111 Job # 380-37894-1
Physis Project ID: 1407003-378

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 2/16/2023. A total of 3 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

Organics
Polynuclear Aromatic Hydrocarbons by EPA 625.1
Disalicylidenepropanediamine by EPA 625.1
Dibenzo [a,l] Pyrene w/ PAHs by EPA 625.1

Analytical results in this report apply only to samples submitted to PHYSIS in accordance with the COC and are intended to be considered in their entirety.

Please feel free to contact me at any time with any questions. PHYSIS appreciates the opportunity to provide you with our analytical and support services.

Regards,

Misty Mercier
714 602-5320
Extension 202
mistymercier@physislabs.com

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-378

RED-HILL Project # 38001111 Job # 380-37894-1

Total Samples: 3

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
104255	AIEA GULCH WELLS PUMP 2	331-202-TP072 (380-37894-1)	2/13/2023	11:02	Samplewater	Not Specified
104256	AIEA WELLS PUMPS 1&2 (2683)	331-203-TP400 (380-37894-2)	2/13/2023	10:32	Samplewater	Not Specified
104257	HALAWA WELLS UNITS 1&2	331-206TP065 (380-37894-3)	2/13/2023	10:07	Samplewater	Not Specified

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ABBREVIATIONS and ACRONYMS

QM	Quality Manual
QA	Quality Assurance
QC	Quality Control
MDL	method detection limit
RL	reporting limit
R1	project sample
R2	project sample replicate
MS1	matrix spike
MS2	matrix spike replicate
B1	procedural blank
B2	procedural blank replicate
BS1	blank spike
BS2	blank spike replicate
LCS1	laboratory control spike
LCS2	laboratory control spike replicate
LCM1	laboratory control material
LCM2	laboratory control material replicate
CRM1	certified reference material
CRM2	certified reference material replicate
RPD	relative percent difference
LMW	low molecular weight
HMW	high molecular weight

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QUALITY ASSURANCE SUMMARY

LABORATORY BATCH: Physis' QM defines a laboratory batch as a group of 20 or fewer project samples of similar matrix, processed together under the same conditions and with the same reagents. QC samples are associated with each batch and were used to assess the validity of the sample analyses.

PROCEDURAL BLANK: Laboratory contamination introduced during method use is assessed through the preparation and analysis of procedural blanks is provided at a minimum frequency of one per batch.

ACCURACY: Accuracy of analytical measurements is the degree of closeness based on percent recovery calculations between measured values and the actual or true value and includes a combination of reproducibility error and systematic bias due to sampling and analytical operations. Accuracy of the project data was indicated by analysis of MS, BS, LCS, LCM, CRM, and/or surrogate spikes on a minimum frequency of one per batch. Physis' QM requires that 95% of the target compounds greater than 10 times the MDL be within the specified acceptance limits.

PRECISION: Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS1/MS2, BS1/BS2, LCS1/LCS2, LCM1/LCM2, CRM1/CRM2, surrogate spikes and/or replicate project sample analysis (R1/R2) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

BLANK SPIKES: BS is the introduction of a known concentration of analyte into the procedural blank. BS demonstrates performance of the preparation and analytical methods on a clean matrix void of potential matrix related interferences. The BS is performed in laboratory deionized water, making these recoveries a better indicator of the efficiency of the laboratory method per se.

MATRIX SPIKES: MS is the introduction of a known concentration of analyte into a sample. MS samples demonstrate the effect a particular project sample matrix has on the accuracy of a measurement. Individually, MS samples also indicate the bias of analytical measurements due to chemical interferences inherent in the in the specific project sample spiked. Intrinsic target analyte concentration in the specific project sample can also significantly impact MS recovery.

CERTIFIED REFERENCE MATERIALS: CRMs are materials of various matrices for which analytical information has been determined and certified by a recognized authority. These are used to provide a quantitative assessment of the accuracy of an analytical method. CRMs provide evidence that the laboratory preparation and analysis produces results that are comparable to those obtained by an independent organization.

LABORATORY CONTROL MATERIAL: LCM is provided because a suitable natural seawater CRM is not available and can be used to indicate accuracy of the method. Physis' internal LCM is seawater collected at ~800 meters in the Southern California San Pedro Basin and can be used as a reference for background concentrations in clean, natural seawater for comparison to project samples.

LABORATORY CONTROL SPIKES: LCS is the introduction of a known concentration of analyte into Physis' LCM. LCS samples were employed to assess the effect the seawater matrix has on the accuracy of a measurement. LCS also indicate the bias of this method due to chemical interferences inherent in the in the seawater matrix. Intrinsic LCM concentration can also significantly impact LCS recovery.

SURROGATES: A surrogate is a pure analyte unlikely to be found in any project sample, behaves similarly to

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the target analyte and most often used with organic analytical procedures. Surrogates are added in known concentration to all samples and are measured to indicate overall efficiency of the method including processing and analyses.

HOLDING TIME: Method recommended holding times are the length of time a project sample can be stored under specific conditions after collection and prior to analysis without significantly affecting the analyte's concentration. Holding times can be extended if preservation techniques are employed to reduce biodegradation, volatilization, oxidation, sorption, precipitation, and other physical and chemical processes.

SAMPLE STORAGE/RETENTION: In order to maintain chemical integrity prior to analysis, all samples submitted to Physis are refrigerated (liquids) or frozen (solids) upon receipt unless otherwise recommended by applicable methods. Solid samples are retained for 1 year from collection while liquid samples are retained until method recommended holding times elapse.

TOTAL/DISSOLVED FRACTION: In some instances, the results for the dissolved fraction may be higher than the total fraction for a particular analyte (e.g. trace metals). This is typically caused by the analytical variation for each result and indicates that the target analyte is primarily in the dissolved phase, within the sample.

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PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	analyte was detected in the procedural blank greater than 10 times the MDL
E	analyte concentration exceeds the upper limit of the linear calibration range, reported value is estimated
H	sample received and/or analyzed past the recommended holding time
J	analyte was detected at a concentration below the RL and above the MDL, reported value is estimated
N	insufficient sample, analysis could not be performed
M	analyte was outside the specified accuracy and/or precision acceptance limits due to matrix interference. The associated B/BS were within limits, therefore the sample data was reported without further clarification
SH	analyte concentration in the project sample exceeded the spike concentration, therefore accuracy and/or precision acceptance limits do not apply
SL	analyte results were lower than 10 times the MDL, therefore accuracy and/or precision acceptance limits do not apply
NH	project sample was heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices, therefore accuracy and/or precision acceptance limits do not apply
Q	analyte was outside the specified QAPP acceptance limits for precision and/or accuracy but within Physis derived acceptance limits, therefore the sample data was reported without further clarification
R	Physis' QM allows for 5% of the target compounds greater than 10 times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and does not indicate any significant problems with the analysis of these project samples

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CASE NARRATIVE

QUALIFIER NOTES

In addition to the use of analyte specific Physis Qualifier Codes where applicable, the following were also noted.

ND

MDL is listed due to report format restrictions; it is not used in reporting. Analytical results reported are ND at the RL.

ANALYTICAL REPORT

PHYSIS Project ID: 1407003-378
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-37894-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104255-R1	**AIEA GULCH WELLS PUMP 2 331-20**	**Matrix:**	**Samplewater**					**Sampled:**	**13-Feb-23 11:02**	**Received:**	**16-Feb-23**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40132	16-Feb-23	26-Feb-23
Sample ID: 104256-R1	**AIEA WELLS PUMPS 1&2 (260) 331-**	**Matrix:**	**Samplewater**					**Sampled:**	**13-Feb-23 10:32**	**Received:**	**16-Feb-23**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40132	16-Feb-23	26-Feb-23
Sample ID: 104257-R1	**HALAWA WELLS UNITS 1&2 331-20**	**Matrix:**	**Samplewater**					**Sampled:**	**13-Feb-23 10:07**	**Received:**	**16-Feb-23**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40132	16-Feb-23	26-Feb-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104255-R1	**AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater**						**Sampled:**	**13-Feb-23 11:02**		**Received:**	**16-Feb-23**
(d10-Acenaphthene)	EPA 625.1	% Recovery	91	1			Total		O-40132	16-Feb-23	26-Feb-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	103	1			Total		O-40132	16-Feb-23	26-Feb-23
(d12-Chrysene)	EPA 625.1	% Recovery	109	1			Total		O-40132	16-Feb-23	26-Feb-23
(d12-Perylene)	EPA 625.1	% Recovery	98	1			Total		O-40132	16-Feb-23	26-Feb-23
(d8-Naphthalene)	EPA 625.1	% Recovery	81	1			Total		O-40132	16-Feb-23	26-Feb-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23

PHYSIS Project ID: 1407003-378
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-37894-1

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104256-R1	**AIEA WELLS PUMPS 1&2 (260) 331-**	**Matrix: Samplewater**					**Sampled:**	**13-Feb-23 10:32**		**Received:**	**16-Feb-23**
(d10-Acenaphthene)	EPA 625.1	% Recovery	96	1			Total		O-40132	16-Feb-23	26-Feb-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	105	1			Total		O-40132	16-Feb-23	26-Feb-23
(d12-Chrysene)	EPA 625.1	% Recovery	109	1			Total		O-40132	16-Feb-23	26-Feb-23
(d12-Perylene)	EPA 625.1	% Recovery	96	1			Total		O-40132	16-Feb-23	26-Feb-23
(d8-Naphthalene)	EPA 625.1	% Recovery	88	1			Total		O-40132	16-Feb-23	26-Feb-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23

PHYSIS Project ID: 1407003-378
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-37894-1

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104257-R1	**HALAWA WELLS UNITS 1&2 331-20**	**Matrix: Samplewater**					**Sampled:**	**13-Feb-23 10:07**		**Received:**	**16-Feb-23**
(d10-Acenaphthene)	EPA 625.1	% Recovery	91	1			Total		O-40132	16-Feb-23	26-Feb-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	100	1			Total		O-40132	16-Feb-23	26-Feb-23
(d12-Chrysene)	EPA 625.1	% Recovery	102	1			Total		O-40132	16-Feb-23	26-Feb-23
(d12-Perylene)	EPA 625.1	% Recovery	90	1			Total		O-40132	16-Feb-23	26-Feb-23
(d8-Naphthalene)	EPA 625.1	% Recovery	83	1			Total		O-40132	16-Feb-23	26-Feb-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23

PHYSIS Project ID: 1407003-378
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-37894-1

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40132	16-Feb-23	26-Feb-23

QUALITY CONTROL REPORT

PHYSIS Project ID: 1407003-378
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-37894-1

Base/Neutral Extractable Compounds QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 104254-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**			
		Method: EPA 625.1				Batch ID: O-40132		Prepared: 16-Feb-23			Analyzed: 26-Feb-23			
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L								
Sample ID: 104254-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**			
		Method: EPA 625.1				Batch ID: O-40132		Prepared: 16-Feb-23			Analyzed: 26-Feb-23			
Disalicylidenepropanediamin	Total	41.2	1	0.05	0.1	µg/L	50	0	82	50 - 150%	PASS			
Sample ID: 104254-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**			
		Method: EPA 625.1				Batch ID: O-40132		Prepared: 16-Feb-23			Analyzed: 26-Feb-23			
Disalicylidenepropanediamin	Total	41.4	1	0.05	0.1	µg/L	50	0	83	50 - 150%	PASS	1	30	PASS

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 104254-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
		Method: EPA 625.1				Batch ID: O-40132		Prepared: 16-Feb-23				Analyzed: 26-Feb-23	
(d10-Acenaphthene)	Total	88	1			% Recovery	100	88	27 - 133%	PASS			
(d10-Phenanthrene)	Total	93	1			% Recovery	100	93	43 - 129%	PASS			
(d12-Chrysene)	Total	96	1			% Recovery	100	96	52 - 144%	PASS			
(d12-Perylene)	Total	93	1			% Recovery	100	93	36 - 161%	PASS			
(d8-Naphthalene)	Total	86	1			% Recovery	100	86	25 - 125%	PASS			
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L							
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
Acenaphthene	Total	ND	1	0.001	0.005	µg/L							
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L							
Anthracene	Total	ND	1	0.001	0.005	µg/L							
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L							
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L							
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L							
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L							
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Biphenyl	Total	ND	1	0.001	0.005	µg/L							
Chrysene	Total	ND	1	0.001	0.005	µg/L							
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L							
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L							
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L							

PHYSIS Project ID: 1407003-378
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-37894-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Fluorene	Total	ND	1	0.001	0.005	µg/L							
Indeno[1,2,3-cd]pyrene	Total	ND	1	0.001	0.005	µg/L							
Naphthalene	Total	ND	1	0.001	0.005	µg/L							
Perylene	Total	ND	1	0.001	0.005	µg/L							
Phenanthrene	Total	ND	1	0.001	0.005	µg/L							
Pyrene	Total	ND	1	0.001	0.005	µg/L							

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 104254-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
		Method: EPA 625.1				Batch ID: O-40132		Prepared: 16-Feb-23				Analyzed: 26-Feb-23	
(d10-Acenaphthene)	Total	104	1			% Recovery	100	0	104	27 - 133%	PASS		
(d10-Phenanthrene)	Total	106	1			% Recovery	100	0	106	43 - 129%	PASS		
(d12-Chrysene)	Total	105	1			% Recovery	100	0	105	52 - 144%	PASS		
(d12-Perylene)	Total	108	1			% Recovery	100	0	108	36 - 161%	PASS		
(d8-Naphthalene)	Total	96	1			% Recovery	100	0	96	25 - 125%	PASS		
1-Methylnaphthalene	Total	0.504	1	0.001	0.005	µg/L	0.5	0	101	31 - 128%	PASS		
1-Methylphenanthrene	Total	0.515	1	0.001	0.005	µg/L	0.5	0	103	66 - 127%	PASS		
2,3,5-Trimethylnaphthalene	Total	0.528	1	0.001	0.005	µg/L	0.5	0	106	55 - 122%	PASS		
2,6-Dimethylnaphthalene	Total	0.52	1	0.001	0.005	µg/L	0.5	0	104	48 - 120%	PASS		
2-Methylnaphthalene	Total	0.512	1	0.001	0.005	µg/L	0.5	0	102	47 - 130%	PASS		
Acenaphthene	Total	0.525	1	0.001	0.005	µg/L	0.5	0	105	53 - 131%	PASS		
Acenaphthylene	Total	0.515	1	0.001	0.005	µg/L	0.5	0	103	43 - 140%	PASS		
Anthracene	Total	0.519	1	0.001	0.005	µg/L	0.5	0	104	58 - 135%	PASS		
Benz[a]anthracene	Total	0.502	1	0.001	0.005	µg/L	0.5	0	100	55 - 145%	PASS		
Benzo[a]pyrene	Total	0.51	1	0.001	0.005	µg/L	0.5	0	102	51 - 143%	PASS		
Benzo[b]fluoranthene	Total	0.549	1	0.001	0.005	µg/L	0.5	0	110	46 - 165%	PASS		
Benzo[e]pyrene	Total	0.542	1	0.001	0.005	µg/L	0.5	0	108	42 - 152%	PASS		
Benzo[g,h,i]perylene	Total	0.913	1	0.001	0.005	µg/L	1	0	91	63 - 133%	PASS		
Benzo[k]fluoranthene	Total	0.526	1	0.001	0.005	µg/L	0.5	0	105	56 - 145%	PASS		
Biphenyl	Total	0.524	1	0.001	0.005	µg/L	0.5	0	105	56 - 119%	PASS		
Chrysene	Total	0.497	1	0.001	0.005	µg/L	0.5	0	99	56 - 141%	PASS		
Dibenz[a,h]anthracene	Total	0.986	1	0.001	0.005	µg/L	1	0	99	55 - 150%	PASS		
Dibenzo[a,l]pyrene	Total	0.488	1	0.001	0.005	µg/L	0.5	0	98	50 - 150%	PASS		
Dibenzothiophene	Total	0.532	1	0.001	0.005	µg/L	0.5	0	106	46 - 126%	PASS		

PHYSIS Project ID: 1407003-378
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-37894-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Fluoranthene	Total	0.502	1	0.001	0.005	µg/L	0.5	0	100	60 - 146%	PASS			
Fluorene	Total	0.523	1	0.001	0.005	µg/L	0.5	0	105	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	0.898	1	0.001	0.005	µg/L	1	0	90	50 - 151%	PASS			
Naphthalene	Total	0.5	1	0.001	0.005	µg/L	0.5	0	100	41 - 126%	PASS			
Perylene	Total	0.51	1	0.001	0.005	µg/L	0.5	0	102	48 - 141%	PASS			
Phenanthrene	Total	0.522	1	0.001	0.005	µg/L	0.5	0	104	67 - 127%	PASS			
Pyrene	Total	0.495	1	0.001	0.005	µg/L	0.5	0	99	54 - 156%	PASS			

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 104254-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**		
		Method: EPA 625.1				Batch ID: O-40132		Prepared: 16-Feb-23				Analyzed: 26-Feb-23		
(d10-Acenaphthene)	Total	98	1			% Recovery	100	0	98	27 - 133%	PASS	6	30	PASS
(d10-Phenanthrene)	Total	106	1			% Recovery	100	0	106	43 - 129%	PASS	0	30	PASS
(d12-Chrysene)	Total	108	1			% Recovery	100	0	108	52 - 144%	PASS	3	30	PASS
(d12-Perylene)	Total	106	1			% Recovery	100	0	106	36 - 161%	PASS	2	30	PASS
(d8-Naphthalene)	Total	88	1			% Recovery	100	0	88	25 - 125%	PASS	9	30	PASS
1-Methylnaphthalene	Total	0.478	1	0.001	0.005	µg/L	0.5	0	96	31 - 128%	PASS	5	30	PASS
1-Methylphenanthrene	Total	0.524	1	0.001	0.005	µg/L	0.5	0	105	66 - 127%	PASS	2	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.52	1	0.001	0.005	µg/L	0.5	0	104	55 - 122%	PASS	2	30	PASS
2,6-Dimethylnaphthalene	Total	0.495	1	0.001	0.005	µg/L	0.5	0	99	48 - 120%	PASS	5	30	PASS
2-Methylnaphthalene	Total	0.484	1	0.001	0.005	µg/L	0.5	0	97	47 - 130%	PASS	5	30	PASS
Acenaphthene	Total	0.512	1	0.001	0.005	µg/L	0.5	0	102	53 - 131%	PASS	3	30	PASS
Acenaphthylene	Total	0.506	1	0.001	0.005	µg/L	0.5	0	101	43 - 140%	PASS	2	30	PASS
Anthracene	Total	0.508	1	0.001	0.005	µg/L	0.5	0	102	58 - 135%	PASS	2	30	PASS
Benz[a]anthracene	Total	0.515	1	0.001	0.005	µg/L	0.5	0	103	55 - 145%	PASS	3	30	PASS
Benzo[a]pyrene	Total	0.504	1	0.001	0.005	µg/L	0.5	0	101	51 - 143%	PASS	1	30	PASS
Benzo[b]fluoranthene	Total	0.546	1	0.001	0.005	µg/L	0.5	0	109	46 - 165%	PASS	1	30	PASS
Benzo[e]pyrene	Total	0.537	1	0.001	0.005	µg/L	0.5	0	107	42 - 152%	PASS	1	30	PASS
Benzo[g,h,i]perylene	Total	0.914	1	0.001	0.005	µg/L	1	0	91	63 - 133%	PASS	0	30	PASS
Benzo[k]fluoranthene	Total	0.525	1	0.001	0.005	µg/L	0.5	0	105	56 - 145%	PASS	0	30	PASS
Biphenyl	Total	0.502	1	0.001	0.005	µg/L	0.5	0	100	56 - 119%	PASS	5	30	PASS
Chrysene	Total	0.523	1	0.001	0.005	µg/L	0.5	0	105	56 - 141%	PASS	6	30	PASS
Dibenz[a,h]anthracene	Total	0.969	1	0.001	0.005	µg/L	1	0	97	55 - 150%	PASS	2	30	PASS
Dibenzo[a,l]pyrene	Total	0.421	1	0.001	0.005	µg/L	0.5	0	84	50 - 150%	PASS	15	30	PASS
Dibenzothiophene	Total	0.534	1	0.001	0.005	µg/L	0.5	0	107	46 - 126%	PASS	1	30	PASS

PHYSIS Project ID: 1407003-378
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Project: RED-HILL Project # 38001111 Job # 380-37894-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Fluoranthene	Total	0.514	1	0.001	0.005	µg/L	0.5	0	103	60 - 146%	PASS	3	30	PASS	
Fluorene	Total	0.518	1	0.001	0.005	µg/L	0.5	0	104	58 - 131%	PASS	1	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	0.881	1	0.001	0.005	µg/L	1	0	88	50 - 151%	PASS	2	30	PASS	
Naphthalene	Total	0.46	1	0.001	0.005	µg/L	0.5	0	92	41 - 126%	PASS	8	30	PASS	
Perylene	Total	0.509	1	0.001	0.005	µg/L	0.5	0	102	48 - 141%	PASS	0	30	PASS	
Phenanthrene	Total	0.527	1	0.001	0.005	µg/L	0.5	0	105	67 - 127%	PASS	1	30	PASS	
Pyrene	Total	0.513	1	0.001	0.005	µg/L	0.5	0	103	54 - 156%	PASS	4	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: 104255

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.0202	5.2631	1111	Anthracene-D10-	1719-06-8	96
10.8492	3.1974	675	Oxalic acid, cyclohexyl propyl ester	1000309-30-3	89
10.6012	1.2591	266	5-Oxotetrahydrofuran-2-carboxylic acid	4344-84-7	85
10.6012	1.2571	265	2-Methylbutanoic anhydride	1468-39-9	85
11.1988	0.7473	158	3,3-Diethoxy-1-propyne	10160-87-9	89
11.2378	0.6729	142	Oxalic acid, cyclohexyl isobutyl ester	1000309-30-4	90
32.7131	0.5973	126	Benzoic acid, 2-ethylhexyl ester	5444-75-7	98
10.2184	0.5542	117	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	86

Concentration estimated using the response for Anthracene-d10

Sample ID: 104256

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.0184	6.4410	1111	Anthracene-D10	1517-22-2	95
10.8488	3.6431	628	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	89
10.4763	2.2817	394	Hydroperoxide, 1-ethylbutyl	24254-56-6	82
10.6008	1.1555	199	2-Methylbutanoic anhydride	1468-39-9	86
11.1982	1.0176	176	3,3-Diethoxy-1-propyne	10160-87-9	89
10.2166	0.9328	161	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	85
11.2363	0.7134	123	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	89
57.4572	0.7001	121	Hexanedioic acid, bis(2-ethylhexyl) ester	103-23-1	98
32.7073	0.6029	104	Benzoic acid, 2-ethylhexyl ester	5444-75-7	98

Concentration estimated using the response for Anthracene-d10

Sample ID: 104257

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.0210	6.6141	1111	Anthracene-D10-	1517-22-2	95
10.8490	3.5314	593	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	89
32.7094	1.0103	170	Benzoic acid, 2-ethylhexyl ester	5444-75-7	98
10.6005	0.9994	168	2-Methylbutanoic anhydride	1468-39-9	87
10.2166	0.8872	149	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	89
11.1990	0.8218	138	3,3-Diethoxy-1-propyne	10160-87-9	91
11.2363	0.6218	104	Oxalic acid, cyclohexyl isobutyl ester	1000309-30-4	87

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1_40132

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.0231	6.2928	1111	Anthracene-D10-	1517-22-2	95
10.8453	3.1724	560	Oxalic acid, cyclohexyl propyl ester	1000309-30-3	90
10.4734	1.1962	211	Hydroperoxide, 1-ethylbutyl	24254-56-6	81
10.5965	0.8530	151	5-Oxotetrahydrofuran-2-carboxylic acid	4344-84-7	85
11.1936	0.7173	127	Oxalic acid, cyclohexyl isobutyl ester	1000309-30-4	92

Concentration estimated using the response for Anthracene-d10

CHAIN OF CUSTODY

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

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-40110.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Physis Environmental Laboratories		Accreditations Required (See note): State - Hawaii		Job #: 380-37894-1
Address: 1904 Wright Circle, ,	Due Date Requested: 3/1/2023			
City: Anaheim	TAT Requested (days):			
State, Zip: CA, 92806				
Phone:	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	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 - Client ID (Lab ID)	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)	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-37894-1)	2/13/23	11:02 Hawaiian		Water			X	2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-37894-2)	2/13/23	10:32 Hawaiian		Water			X	2	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-37894-3)	2/13/23	10:07 Hawaiian		Water			X	2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
G.Reeder	02/16/2023 1527	EES		1530 2/16/23	DCS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				2/16/2023 17:25	PHYSIS LABS
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:

Ver: 06/08/2021

PHYSIS
TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

PHYSIS
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

Project Iteration ID: 1407003-378
Client Name: Eurofins Eaton Analytical
Project Name: RED-HILL Project # 38001111 Job # 380-37894-1
COC Page Number: 2 of 2
Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: CN
2. Date Received: ~~2/15~~ 2/16/2023
3. Time Received: 17:25
4. Client Name: EUROFINS
5. Courier Information: (Please circle)
   - (•) Client
   - • UPS
   - • Area Fast
   - • DRS
   - • FedEx
   - • GSO/GLS
   - • Ontrac
   - • PAMS
   - • PHYSIS Driver:
     - i. Start Time:_____
     - ii. End Time:_____
     - iii. Total Mileage: _____
     - iv. Number of Pickups:_____
6. Container Information: (Please put the # of containers or circle none)
   - 1 Cooler
   - __ Styrofoam Cooler
   - ____ Boxes
   - None
   - ___ Carboy(s)
   - __Carboy Trash Can(s)
   - ____ Carboy Cap(s)
   - Other _____
7. What type of ice was used: (Please circle any that apply)
   - (•) Wet Ice
   - • Blue Ice
   - • Dry Ice
   - • Water
   - • None
8. Randomly Selected Samples Temperature (°C): 2.5 Used I/R Thermometer # 1

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... (Yes) / No
2. All sample containers arrived intact..... (Yes) / No
3. All samples listed on COC(s) are present..... (Yes) / No
4. Information on containers consistent with information on COC(s)..... (Yes) / No
5. Correct containers and volume for all analyses indicated..... (Yes) / No
6. All samples received within method holding time..... (Yes) / No
7. Correct preservation used for all analyses indicated..... (Yes) / No
8. Name of sampler included on COC(s)..... Yes / (No)

Notes:

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

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: BAILEY	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-9774-2757.1
Client Contact: Dr. Ron Fenstemacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 3
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 Yes 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: Hawaii	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 (Purgeable) LL (EAL)	SUBCONTRACT - 8015 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				Water											
AIEA GULCH WELLS PUMP 2	02/13/2023	1102	G	Water			X	X	X	X	X	X	X		
AIEA WELLS PUMPS 1&2 (260)				Water											
HALAWA WELLS UNITS 1&2				Water											
MOANALUA WELLS				Water											
AIEA GULCH WELLS PUMP 2				Water											
AIEA WELLS PUMPS 1&2 (260)				Water											
HALAWA WELLS UNITS 1&2				Water											
MOANALUA WELLS				Water											
AIEA GULCH WELLS PUMP 2				Water											
AIEA WELLS PUMPS 1&2 (260) P2	02/13/2023	1032	G	Water			X	X	X	X	X	X	X		

380-37894 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:
#1 - 7713 0553 7389
#2 - 7713 0553 7893

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: #3 - 7713 0553 8374 FED EX #4 - 7713 0553 7919

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
BAILEY		HBWS	G. REITNER	02/15/2023 10:30	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: #1 - (750A) 3.6°-3.5° #3 - (752A) 5.8°-5.7°
GEL ICE-FROZEN #2 - (750A) 1.6°-1.5° #4 - (750A) 3.0°-2.9°

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

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: BAILEY	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-9774-2757.2
Client Contact: Dr. Ron Fenstemacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 2 of 3
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 Yes 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: Hawaii	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 (Purgeable) LL (EAL)	SUBCONTRACT - 8015 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								
HALAWA WELLS UNITS 1&2				Water																	
MOANALUA WELLS				Water																	
AIEA GULCH WELLS PUMP 2				Water																	
AIEA WELLS PUMPS 1&2 (260)				Water																	
HALAWA WELLS UNITS 1&2 P1	02/13/2023	1007		Water			X	X	X	X	X	X	X								
TB MOANALUA WELLS				Water																	
TB AIEA GULCH WELLS PUMP2	02/13/2023	1102		Water							X										
TB AIEA WELLS PUMPS 1&2 (260) P2	02/13/2023	1032		Water							X										
TB HALAWA WELLS UNITS 1&2 P1	02/13/2023	1007		Water							X										
MOANALUA WELLS				Water																	
AIEA GULCH WELLS PUMP 2				Water																	

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: #1- 9713 0553 7359 #2- 7713 0553 7893 #3- 7713 0553 4374 #4- 7713 0553 7919

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
BAILEY		HBWS	G.REITNER	02/15/2023 10:30	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: #1 - (750A) 3.6°-3.5° #3-(952A) 5.8°-5.7° GEL ICE-FROZEN #2-(750A) 1.6°-1.5° #4- (750A) 3.0°-2.9°

Ver: 06/08/2021

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

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: BAILEY	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-9774-2757.3
Client Contact: Dr. Ron Fenstemacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 3 of 3
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 Yes 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: Hawaii	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 (Purgeable) LL (EAL)	SUBCONTRACT - 8015 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		
AIEA WELLS PUMPS 1&2 (260)				Water											
HALAWA WELLS UNITS 1&2				Water											
FB: MOANALUA WELLS				Water											
FB: AIEA GULCH WELLS PUMP 2	2/13/2023	1102		Water								X	X		
FB: AIEA WELLS PUMPS 1&2 (260) P2	02/13/2023	1032		Water								X	X		
FB: HALAWA WELLS UNITS 1&2 P1	02/13/2023	1007		Water								X	X		

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: #1 - 7713 0553 7389 #2 - 7713 0553 7893

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: #3 - 7713 0553 8394 FED EX #4 - 7713 0553 7919

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
BAILEY		HBWS	G.REITNER	02/15/2023 10:30	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: #1 - (760A) 3.6° 3.5° #3 - (752A) 5.8°-5.7° GEL ICE - FROZEN #2 - (750A) 1.6°-1.5° #4 - (750A) 3.0°-2.9°

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

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-40195.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Eurofins Eaton Analytical		Accreditations Required (See note): State - Hawaii		Job #: 380-37894-1
Address: 110 S Hill Street, ,	Due Date Requested: 3/7/2023			
City: South Bend	TAT Requested (days):			
State, Zip: IN, 46617				
Phone: 574-233-4777(Tel) 574-233-8207(Fax)	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

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:

Client Provided Sample Container

Sample Identification - Client ID (Lab ID)	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)	533/533_Prep All Analytes	537.1_DW_PREC/537.1_DW_Prep 537.1 Full List	525.2_PREC/525.2_Prep (MOD) 525plus Plus TICs	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-37894-1)	2/13/23	11:02 Hawaiian		Water			X	X	X	8	
AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-37894-2)	2/13/23	10:32 Hawaiian		Water			X	X	X	8	
HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-37894-3)	2/13/23	10:07 Hawaiian		Water			X	X	X	8	
FB:AIEA GULCH WELLS P2 (331-202-TP072) (380-37894-7)	2/13/23	11:02 Hawaiian		Water			X	X		2	
FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-3789	2/13/23	10:32 Hawaiian		Water			X	X		2	
FB: HALAWA WELLS UNITS 1&2 (331-206-TP065) (380-37894-9	2/13/23	10:07 Hawaiian		Water			X	X		2	

1.2
1.4
1.8

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: G. REITMEIER	Date/Time: 02/17/2023 13:10	Company: EEA	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 2-18-23 0900	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-37894-1

Login Number: 37894
List Number: 1
Creator: Ngo, Theodore

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	

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-37894-1

Login Number: 37894
List Number: 2
Creator: DePriest, Kellie

List Source: Eurofins Eaton Analytical South Bend
List Creation: 02/18/23 11:49 AM

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	False	Client provided containers