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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
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JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-55685-1

Eurofins Eaton Analytical Pomona

Job Notes

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

Compliance Statement

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

Authorization



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Definitions/Glossary

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

Job ID: 380-55685-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
F1	MS and/or MSD recovery exceeds control 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.
^3-	Reporting Limit Check Standard is outside acceptance limits, low biased.
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
♠	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

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

Job ID: 380-55685-1

Job ID: 380-55685-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-55685-1

Comments

No additional comments.

Receipt

The samples were received on 7/20/2023 10:15 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.9° C and 4.9° C.

GC/MS Semi VOA

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

LCMS

Method 533: MRL check IDA 13C3 HFPO-DA recovery failed biased low in prep batch 380-50042. Method 533 only requires one LFB/LCS but with ro Prep batch 380-45148 have a passing LCS/LCSD. EPA Manual for DW requires only one MRL check per day. An MRL check with passing low level LI requirement is in prep batch 380-49895, and reported on analytical batch 50612.

Method 537.1: The method reporting limit check (MRL) for preparation batch 380-48694 and analytical batch 380-48883 recovered outside control limits for the following analytes: Perfluorononanoic acid (PFNA). These analytes were biased high in the MRL and were not detected in the associated samples; therefore, the data have been reported.

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

Organic Prep

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

Detection Summary

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55685-1

No Detections.

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

Lab Sample ID: 380-55685-3

No Detections.

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This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55685-1

Date Collected: 07/18/23 13:30

Matrix: Drinking Water

Date Received: 07/20/23 10:15

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
2,4'-DDD	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
2,4'-DDE	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
2,4'-DDT	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
2-Methylnaphthalene	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
4,4'-DDD	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
4,4'-DDE	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
4,4'-DDT	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Acenaphthene	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Acenaphthylene	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Acetochlor	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Alachlor	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
alpha-BHC	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
alpha-Chlordane	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Anthracene	<0.020		0.020	ug/L		07/25/23 16:50	07/26/23 20:50	1
Atrazine	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Benz(a)anthracene	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Benzo[a]pyrene	<0.020		0.020	ug/L		07/25/23 16:50	07/26/23 20:50	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		07/25/23 16:50	07/26/23 20:50	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		07/25/23 16:50	07/26/23 20:50	1
beta-BHC	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		07/25/23 16:50	07/26/23 20:50	1
Bromacil	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Butachlor	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Butylbenzylphthalate	<0.49		0.49	ug/L		07/25/23 16:50	07/26/23 20:50	1
Chlorobenzilate	<0.098	^3+	0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Chloroneb	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Chlorpyrifos	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Chrysene	<0.020		0.020	ug/L		07/25/23 16:50	07/26/23 20:50	1
delta-BHC	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		07/25/23 16:50	07/26/23 20:50	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Diclorvos (DDVP)	<0.049	^3+ *+	0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Dieldrin	<0.20		0.20	ug/L		07/25/23 16:50	07/26/23 20:50	1
Diethylphthalate	<0.49		0.49	ug/L		07/25/23 16:50	07/26/23 20:50	1
Dimethylphthalate	<0.49		0.49	ug/L		07/25/23 16:50	07/26/23 20:50	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		07/25/23 16:50	07/26/23 20:50	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Endosulfan sulfate	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Endrin	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Endrin aldehyde	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
EPTC	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Fluoranthene	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1

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Client Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55685-1

Date Collected: 07/18/23 13:30

Matrix: Drinking Water

Date Received: 07/20/23 10:15

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
gamma-Chlordane	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Heptachlor	<0.039		0.039	ug/L		07/25/23 16:50	07/26/23 20:50	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Hexachlorobenzene	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Isophorone	<0.49		0.49	ug/L		07/25/23 16:50	07/26/23 20:50	1
Lindane	<0.039		0.039	ug/L		07/25/23 16:50	07/26/23 20:50	1
Malathion	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Methoxychlor	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Metolachlor	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Molinate	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Naphthalene	<0.30		0.30	ug/L		07/25/23 16:50	07/26/23 20:50	1
Parathion	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Phenanthrene	<0.039		0.039	ug/L		07/25/23 16:50	07/26/23 20:50	1
Propachlor	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Pyrene	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Simazine	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Terbacil	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Terbuthylazine	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1
Thiobencarb	<0.20		0.20	ug/L		07/25/23 16:50	07/26/23 20:50	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		07/25/23 16:50	07/26/23 20:50	1
trans-Nonachlor	<0.049		0.049	ug/L		07/25/23 16:50	07/26/23 20:50	1
Trifluralin	<0.098		0.098	ug/L		07/25/23 16:50	07/26/23 20:50	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	07/25/23 16:50	07/26/23 20:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	96		70 - 130	07/25/23 16:50	07/26/23 20:50	1
Perylene-d12	95		70 - 130	07/25/23 16:50	07/26/23 20:50	1
Triphenylphosphate	101		70 - 130	07/25/23 16:50	07/26/23 20:50	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-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55685-1

Date Collected: 07/18/23 13:30

Matrix: Drinking Water

Date Received: 07/20/23 10:15

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:58	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	84		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C6 PFDA	91		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C5 PFHxA	94		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C4 PFHpA	97		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C8 PFOA	99		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C9 PFNA	95		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C7 PFUnA	98		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C2 PFDoA	94		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C4 PFBA	98		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C5 PFPeA	111		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C3 PFBS	100		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C3 PFHxS	101		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C8 PFOS	93		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C2-4:2-FTS	130		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C2-6:2-FTS	113		50 - 200			08/02/23 16:10	08/07/23 19:58	1
13C2-8:2-FTS	100		50 - 200			08/02/23 16:10	08/07/23 19:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55685-1

Date Collected: 07/18/23 13:30

Matrix: Drinking Water

Date Received: 07/20/23 10:15

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
Perfluorononanoic acid (PFNA)	<2.0	^3+	2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	120		70 - 130			07/25/23 09:17	07/26/23 21:43	1
13C2 PFHxA	113		70 - 130			07/25/23 09:17	07/26/23 21:43	1
13C2 PFDA	116		70 - 130			07/25/23 09:17	07/26/23 21:43	1
13C3-GenX	102		70 - 130			07/25/23 09:17	07/26/23 21:43	1

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

Lab Sample ID: 380-55685-3

Date Collected: 07/18/23 13:30

Matrix: Water

Date Received: 07/20/23 10:15

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55685-3

Date Collected: 07/18/23 13:30

Matrix: Water

Date Received: 07/20/23 10:15

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/02/23 16:10	08/07/23 21:52	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	82		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C6 PFDA	90		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C5 PFHxA	98		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C4 PFHpA	99		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C8 PFOA	97		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C9 PFNA	94		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C7 PFUnA	99		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C2 PFDoA	91		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C4 PFBA	96		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C5 PFPeA	130		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C3 PFBS	94		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C3 PFHxS	94		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C8 PFOS	94		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C2-4:2-FTS	117		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C2-6:2-FTS	102		50 - 200			08/02/23 16:10	08/07/23 21:52	1
13C2-8:2-FTS	98		50 - 200			08/02/23 16:10	08/07/23 21:52	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
Perfluorononanoic acid (PFNA)	<2.0	^3+	2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55685-3

Date Collected: 07/18/23 13:30

Matrix: Water

Date Received: 07/20/23 10:15

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/25/23 09:17	07/26/23 21:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	110		70 - 130	07/25/23 09:17	07/26/23 21:53	1
13C2 PFHxA	102		70 - 130	07/25/23 09:17	07/26/23 21:53	1
13C2 PFDA	109		70 - 130	07/25/23 09:17	07/26/23 21:53	1
13C3-GenX	90		70 - 130	07/25/23 09:17	07/26/23 21:53	1

Action Limit Summary

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55685-1

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

Surrogate Summary

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

Job ID: 380-55685-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-55685-1	AIEA WELLS PUMPS 1&2 (260)	96	95	101

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-55614-AI-1-A MS	Matrix Spike	97	91	103
380-55774-AK-3-A DU	Duplicate	96	90	101
LCS 380-48728/23-A	Lab Control Sample	95	93	104
LCSD 380-48728/24-A	Lab Control Sample Dup	98	94	104
MB 380-48728/21-A	Method Blank	100	88	98
MRL 380-48728/22-A	Lab Control Sample	99	90	98

Surrogate Legend

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

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-55685-1	AIEA WELLS PUMPS 1&2 (260)	120	113	116	102

Surrogate Legend

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

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	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-55685-3	FB: AIEA WELLS PUMPS 1&2 (110	102	109	90
380-55757-A-1-B MS	Matrix Spike	109	112	110	102
380-55757-A-1-C MSD	Matrix Spike Duplicate	102	108	110	102
LCS 380-48694/25-A	Lab Control Sample	98	112	108	101
LCSD 380-48694/26-A	Lab Control Sample Dup	117	117	117	102
MBL 380-48694/23-A	Method Blank	107	114	113	102
MRL 380-48694/24-A	Lab Control Sample	111	114	111	98

Surrogate Summary

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

Job ID: 380-55685-1

Surrogate Legend

d5NEFOS = d5-NEtFOSAA

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

GenX = 13C3-GenX

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Isotope Dilution Summary

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

Job ID: 380-55685-1

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)
380-55685-1	AIEA WELLS PUMPS 1&2 (260)	84	91	94	97	99	95	98	94
380-55685-1 DU	AIEA WELLS PUMPS 1&2 (260)	85	90	92	95	92	92	93	87

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)
380-55685-1	AIEA WELLS PUMPS 1&2 (260)	98	111	100	101	93	130	113	100
380-55685-1 DU	AIEA WELLS PUMPS 1&2 (260)	89	99	96	96	94	121	117	107

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)
380-55683-O-1-B MS	Matrix Spike	80	95	94	96	93	95	100	91
380-55685-3	FB: AIEA WELLS PUMPS 1&2 (260)	82	90	98	99	97	94	99	91
LCS 380-50042/20-A	Lab Control Sample	78	90	81	79	81	88	97	94
LCSD 380-50042/21-A	Lab Control Sample Dup	74	87	80	79	80	86	96	92
MBL 380-50042/18-A	Method Blank	50	75	64	72	72	75	81	78
MRL 380-50042/19-A	Lab Control Sample	47 *5- ^3-	76	61	65	64	70	87	84

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)
380-55683-O-1-B MS	Matrix Spike	95	113	93	94	94	107	108	104
380-55685-3	FB: AIEA WELLS PUMPS 1&2 (260)	96	130	94	94	94	117	102	98
LCS 380-50042/20-A	Lab Control Sample	75	80	98	99	96	111	111	103
LCSD 380-50042/21-A	Lab Control Sample Dup	80	82	96	96	93	110	109	99
MBL 380-50042/18-A	Method Blank	60	66	91	90	87	104	105	95
MRL 380-50042/19-A	Lab Control Sample	58	69	97	95	90	119	112	98

Surrogate Legend

Eurofins Eaton Analytical Pomona

Isotope Dilution Summary

Client: City & County of Honolulu

Project/Site: RED-HILL

Job ID: 380-55685-1

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

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QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: MB 380-48728/21-A
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 48728

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1-Methylnaphthalene	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
2,4'-DDD	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
2,4'-DDE	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
2,4'-DDT	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
2-Methylnaphthalene	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
4,4'-DDD	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
4,4'-DDE	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
4,4'-DDT	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Acenaphthene	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Acenaphthylene	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Acetochlor	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Alachlor	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
alpha-BHC	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
alpha-Chlordane	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Anthracene	<0.020		0.020	ug/L		07/25/23 15:40	07/26/23 16:42	1
Atrazine	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Benz(a)anthracene	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Benzo[a]pyrene	<0.020		0.020	ug/L		07/25/23 15:40	07/26/23 16:42	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		07/25/23 15:40	07/26/23 16:42	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		07/25/23 15:40	07/26/23 16:42	1
beta-BHC	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60	ug/L		07/25/23 15:40	07/26/23 16:42	1
Bromacil	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Butachlor	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Butylbenzylphthalate	<0.50		0.50	ug/L		07/25/23 15:40	07/26/23 16:42	1
Chlorobenzilate	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Chloroneb	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Chlorpyrifos	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Chrysene	<0.020		0.020	ug/L		07/25/23 15:40	07/26/23 16:42	1
delta-BHC	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Di(2-ethylhexyl)adipate	<0.60		0.60	ug/L		07/25/23 15:40	07/26/23 16:42	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Diclorvos (DDVP)	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Dieldrin	<0.20		0.20	ug/L		07/25/23 15:40	07/26/23 16:42	1
Diethylphthalate	<0.50		0.50	ug/L		07/25/23 15:40	07/26/23 16:42	1
Dimethylphthalate	<0.50		0.50	ug/L		07/25/23 15:40	07/26/23 16:42	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		07/25/23 15:40	07/26/23 16:42	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Endosulfan sulfate	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Endrin	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Endrin aldehyde	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
EPTC	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1

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QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: MB 380-48728/21-A
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 48728

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Fluorene	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
gamma-Chlordane	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Heptachlor	<0.040		0.040	ug/L		07/25/23 15:40	07/26/23 16:42	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Hexachlorobenzene	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Isophorone	<0.50		0.50	ug/L		07/25/23 15:40	07/26/23 16:42	1
Lindane	<0.040		0.040	ug/L		07/25/23 15:40	07/26/23 16:42	1
Malathion	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Methoxychlor	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Metolachlor	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Molinate	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Naphthalene	<0.30		0.30	ug/L		07/25/23 15:40	07/26/23 16:42	1
Parathion	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Phenanthrene	<0.040		0.040	ug/L		07/25/23 15:40	07/26/23 16:42	1
Propachlor	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Pyrene	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Simazine	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Terbacil	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Terbutylazine	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1
Thiobencarb	<0.20		0.20	ug/L		07/25/23 15:40	07/26/23 16:42	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		07/25/23 15:40	07/26/23 16:42	1
trans-Nonachlor	<0.050		0.050	ug/L		07/25/23 15:40	07/26/23 16:42	1
Trifluralin	<0.099		0.099	ug/L		07/25/23 15:40	07/26/23 16:42	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Sulfurous acid, cyclohexylmethyl heptadecyl ester	0.762	T J N	ug/L		2.35	1000309-22-5	07/25/23 15:40	07/26/23 16:42	1
Decane	2.65	T J N	ug/L		2.45	124-18-5	07/25/23 15:40	07/26/23 16:42	1
Decane, 2-methyl-	0.511	T J N	ug/L		2.63	6975-98-0	07/25/23 15:40	07/26/23 16:42	1
2,4,7,9-Tetramethyl-5-decyn-4,7-diol	0.525	T J N	ug/L		3.86	126-86-3	07/25/23 15:40	07/26/23 16:42	1
Tridecanoic acid	0.697	T J N	ug/L		5.84	638-53-9	07/25/23 15:40	07/26/23 16:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	100		70 - 130	07/25/23 15:40	07/26/23 16:42	1
Perylene-d12	88		70 - 130	07/25/23 15:40	07/26/23 16:42	1
Triphenylphosphate	98		70 - 130	07/25/23 15:40	07/26/23 16:42	1

Lab Sample ID: LCS 380-48728/23-A
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 48728

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.98	2.05		ug/L		104	70 - 130
2,4'-DDD	1.98	2.16		ug/L		109	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: LCS 380-48728/23-A
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 48728

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDE	1.98	2.04		ug/L		103	70 - 130
2,4'-DDT	1.98	2.17		ug/L		110	70 - 130
2,4-Dinitrotoluene	1.98	2.00		ug/L		101	70 - 130
2,6-Dinitrotoluene	1.98	2.00		ug/L		101	70 - 130
2-Methylnaphthalene	1.98	2.07		ug/L		105	70 - 130
4,4'-DDD	1.98	2.17		ug/L		110	70 - 130
4,4'-DDE	1.98	2.08		ug/L		105	70 - 130
4,4'-DDT	1.98	2.06		ug/L		104	70 - 130
Acenaphthene	1.98	2.05		ug/L		103	70 - 130
Acenaphthylene	1.98	1.93		ug/L		98	70 - 130
Acetochlor	1.98	2.51		ug/L		127	70 - 130
Alachlor	1.98	2.13		ug/L		108	70 - 130
alpha-BHC	1.98	2.10		ug/L		106	70 - 130
alpha-Chlordane	1.98	1.96		ug/L		99	70 - 130
Anthracene	1.98	2.01		ug/L		101	70 - 130
Atrazine	1.98	2.40		ug/L		121	70 - 130
Benz(a)anthracene	1.98	2.20		ug/L		111	70 - 130
Benzo[a]pyrene	1.98	1.97		ug/L		100	70 - 130
Benzo[b]fluoranthene	1.98	2.13		ug/L		107	70 - 130
Benzo[g,h,i]perylene	1.98	2.10		ug/L		106	70 - 130
Benzo[k]fluoranthene	1.98	2.22		ug/L		112	70 - 130
beta-BHC	1.98	2.16		ug/L		109	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	1.98		ug/L		100	70 - 130
Bromacil	1.98	2.11		ug/L		106	70 - 130
Butachlor	1.98	2.39		ug/L		121	70 - 130
Butylbenzylphthalate	1.98	2.35		ug/L		119	70 - 130
Chlorobenzilate	1.98	2.50		ug/L		126	70 - 130
Chloroneb	1.98	2.05		ug/L		103	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	2.08		ug/L		105	70 - 130
Chlorpyrifos	1.98	2.22		ug/L		112	70 - 130
Chrysene	1.98	2.07		ug/L		104	70 - 130
delta-BHC	1.98	2.03		ug/L		103	70 - 130
Di(2-ethylhexyl)adipate	1.98	2.22		ug/L		112	70 - 130
Dibenz(a,h)anthracene	1.98	2.20		ug/L		111	70 - 130
Diclorvos (DDVP)	1.98	2.48		ug/L		125	70 - 130
Dieldrin	1.98	2.10		ug/L		106	70 - 130
Diethylphthalate	1.98	2.17		ug/L		109	70 - 130
Dimethylphthalate	1.98	2.16		ug/L		109	70 - 130
Di-n-butyl phthalate	3.96	4.24		ug/L		107	70 - 130
Di-n-octyl phthalate	1.98	1.99		ug/L		101	70 - 130
Endosulfan I (Alpha)	1.98	2.03		ug/L		102	70 - 130
Endosulfan II (Beta)	1.98	2.20		ug/L		111	70 - 130
Endosulfan sulfate	1.98	2.26		ug/L		114	70 - 130
Endrin	1.98	2.39		ug/L		121	70 - 130
Endrin aldehyde	1.98	1.98		ug/L		100	70 - 130
EPTC	1.98	2.08		ug/L		105	70 - 130
Fluoranthene	1.98	2.23		ug/L		113	70 - 130
Fluorene	1.98	2.16		ug/L		109	70 - 130
gamma-Chlordane	1.98	1.95		ug/L		99	70 - 130

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QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: LCS 380-48728/23-A
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 48728

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Heptachlor	1.98	2.14		ug/L		108	70 - 130
Heptachlor epoxide (isomer B)	1.98	2.09		ug/L		105	70 - 130
Hexachlorobenzene	1.98	1.92		ug/L		97	70 - 130
Hexachlorocyclopentadiene	1.98	2.01		ug/L		101	70 - 130
Indeno[1,2,3-cd]pyrene	1.98	2.22		ug/L		112	70 - 130
Isophorone	1.98	2.06		ug/L		104	70 - 130
Lindane	1.98	2.15		ug/L		109	70 - 130
Malathion	1.98	2.26		ug/L		114	70 - 130
Methoxychlor	1.98	2.15		ug/L		109	70 - 130
Metolachlor	1.98	2.33		ug/L		117	70 - 130
Molinate	1.98	2.27		ug/L		115	70 - 130
Naphthalene	1.98	1.96		ug/L		99	70 - 130
Parathion	1.98	2.38		ug/L		120	70 - 130
Pendimethalin (Penoxaline)	1.98	2.14		ug/L		108	70 - 130
Phenanthrene	1.98	2.05		ug/L		104	70 - 130
Propachlor	1.98	2.31		ug/L		116	70 - 130
Pyrene	1.98	2.25		ug/L		113	70 - 130
Simazine	1.98	2.32		ug/L		117	70 - 130
Terbacil	1.98	2.35		ug/L		119	70 - 130
Terbutylazine	1.98	2.27		ug/L		115	70 - 130
Thiobencarb	1.98	2.38		ug/L		120	70 - 130
trans-Nonachlor	1.98	1.97		ug/L		100	70 - 130
Trifluralin	1.98	2.05		ug/L		103	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	95		70 - 130
Perylene-d12	93		70 - 130
Triphenylphosphate	104		70 - 130

Lab Sample ID: LCSD 380-48728/24-A
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 48728

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.99	2.10		ug/L		106	70 - 130	2	20
2,4'-DDD	1.99	2.19		ug/L		110	70 - 130	1	20
2,4'-DDE	1.99	2.06		ug/L		104	70 - 130	1	20
2,4'-DDT	1.99	2.17		ug/L		109	70 - 130	0	20
2,4-Dinitrotoluene	1.99	2.07		ug/L		104	70 - 130	3	20
2,6-Dinitrotoluene	1.99	2.08		ug/L		105	70 - 130	4	20
2-Methylnaphthalene	1.99	2.13		ug/L		107	70 - 130	3	20
4,4'-DDD	1.99	2.20		ug/L		111	70 - 130	1	20
4,4'-DDE	1.99	2.08		ug/L		105	70 - 130	0	20
4,4'-DDT	1.99	2.08		ug/L		105	70 - 130	1	20
Acenaphthene	1.99	2.09		ug/L		105	70 - 130	2	20
Acenaphthylene	1.99	2.00		ug/L		101	70 - 130	4	20
Acetochlor	1.99	2.55		ug/L		128	70 - 130	1	20
Alachlor	1.99	2.18		ug/L		110	70 - 130	2	20

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: LCSD 380-48728/24-A
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 48728

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
alpha-BHC	1.99	2.13		ug/L		107	70 - 130	1	20	
alpha-Chlordane	1.99	2.00		ug/L		101	70 - 130	2	20	
Anthracene	1.99	2.05		ug/L		103	70 - 130	2	20	
Atrazine	1.99	2.43		ug/L		123	70 - 130	1	20	
Benz(a)anthracene	1.99	2.25		ug/L		113	70 - 130	2	20	
Benzo[a]pyrene	1.99	2.01		ug/L		101	70 - 130	2	20	
Benzo[b]fluoranthene	1.99	2.15		ug/L		108	70 - 130	1	20	
Benzo[g,h,i]perylene	1.99	2.14		ug/L		108	70 - 130	2	20	
Benzo[k]fluoranthene	1.99	2.19		ug/L		110	70 - 130	1	20	
beta-BHC	1.99	2.17		ug/L		109	70 - 130	0	20	
Bis(2-ethylhexyl) phthalate	1.99	1.98		ug/L		100	70 - 130	0	20	
Bromacil	1.99	2.22		ug/L		112	70 - 130	5	20	
Butachlor	1.99	2.44		ug/L		123	70 - 130	2	20	
Butylbenzylphthalate	1.99	2.37		ug/L		119	70 - 130	1	20	
Chlorobenzilate	1.99	2.56		ug/L		129	70 - 130	3	20	
Chloroneb	1.99	2.08		ug/L		105	70 - 130	1	20	
Chlorothalonil (Draconil, Bravo)	1.99	2.10		ug/L		106	70 - 130	1	20	
Chlorpyrifos	1.99	2.25		ug/L		113	70 - 130	1	20	
Chrysene	1.99	2.13		ug/L		107	70 - 130	3	20	
delta-BHC	1.99	2.07		ug/L		104	70 - 130	2	20	
Di(2-ethylhexyl)adipate	1.99	2.18		ug/L		110	70 - 130	2	20	
Dibenz(a,h)anthracene	1.99	2.26		ug/L		114	70 - 130	3	20	
Diclorvos (DDVP)	1.99	2.61	*+	ug/L		131	70 - 130	5	20	
Dieldrin	1.99	2.15		ug/L		108	70 - 130	2	20	
Diethylphthalate	1.99	2.21		ug/L		112	70 - 130	2	20	
Dimethylphthalate	1.99	2.22		ug/L		112	70 - 130	3	20	
Di-n-butyl phthalate	3.97	4.31		ug/L		109	70 - 130	2	20	
Di-n-octyl phthalate	1.99	1.97		ug/L		99	70 - 130	1	20	
Endosulfan I (Alpha)	1.99	2.08		ug/L		105	70 - 130	2	20	
Endosulfan II (Beta)	1.99	2.20		ug/L		111	70 - 130	0	20	
Endosulfan sulfate	1.99	2.29		ug/L		116	70 - 130	1	20	
Endrin	1.99	2.31		ug/L		117	70 - 130	3	20	
Endrin aldehyde	1.99	2.04		ug/L		103	70 - 130	3	20	
EPTC	1.99	2.18		ug/L		110	70 - 130	5	20	
Fluoranthene	1.99	2.26		ug/L		114	70 - 130	1	20	
Fluorene	1.99	2.19		ug/L		110	70 - 130	1	20	
gamma-Chlordane	1.99	2.00		ug/L		101	70 - 130	3	20	
Heptachlor	1.99	2.21		ug/L		111	70 - 130	3	20	
Heptachlor epoxide (isomer B)	1.99	2.09		ug/L		105	70 - 130	0	20	
Hexachlorobenzene	1.99	2.00		ug/L		101	70 - 130	4	20	
Hexachlorocyclopentadiene	1.99	2.06		ug/L		104	70 - 130	3	20	
Indeno[1,2,3-cd]pyrene	1.99	2.28		ug/L		115	70 - 130	2	20	
Isophorone	1.99	2.19		ug/L		110	70 - 130	6	20	
Lindane	1.99	2.19		ug/L		110	70 - 130	2	20	
Malathion	1.99	2.30		ug/L		116	70 - 130	2	20	
Methoxychlor	1.99	2.18		ug/L		110	70 - 130	1	20	
Metolachlor	1.99	2.36		ug/L		119	70 - 130	2	20	
Molinate	1.99	2.33		ug/L		117	70 - 130	2	20	
Naphthalene	1.99	2.06		ug/L		104	70 - 130	5	20	

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: LCSD 380-48728/24-A
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 48728

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Parathion	1.99	2.41		ug/L		121	70 - 130	1	20
Pendimethalin (Penoxaline)	1.99	2.19		ug/L		110	70 - 130	2	20
Phenanthrene	1.99	2.09		ug/L		105	70 - 130	2	20
Propachlor	1.99	2.35		ug/L		118	70 - 130	2	20
Pyrene	1.99	2.27		ug/L		114	70 - 130	1	20
Simazine	1.99	2.40		ug/L		121	70 - 130	4	20
Terbacil	1.99	2.43		ug/L		122	70 - 130	3	20
Terbutylazine	1.99	2.29		ug/L		116	70 - 130	1	20
Thiobencarb	1.99	2.38		ug/L		120	70 - 130	0	20
trans-Nonachlor	1.99	2.00		ug/L		101	70 - 130	2	20
Trifluralin	1.99	2.11		ug/L		107	70 - 130	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Nitro-m-xylene	98		70 - 130
Perylene-d12	94		70 - 130
Triphenylphosphate	104		70 - 130

Lab Sample ID: MRL 380-48728/22-A
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 48728

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0995	0.110		ug/L		111	50 - 150
2,4'-DDD	0.0995	0.121		ug/L		121	50 - 150
2,4'-DDE	0.0995	0.102		ug/L		103	50 - 150
2,4'-DDT	0.0995	0.0950	J	ug/L		96	50 - 150
2,4-Dinitrotoluene	0.0995	0.104		ug/L		105	50 - 150
2,6-Dinitrotoluene	0.0995	0.0925	J	ug/L		93	50 - 150
2-Methylnaphthalene	0.0995	0.109		ug/L		110	50 - 150
4,4'-DDD	0.0995	0.0935	J	ug/L		94	50 - 150
4,4'-DDE	0.0995	0.0918	J	ug/L		92	50 - 150
4,4'-DDT	0.0995	0.125		ug/L		125	50 - 150
Acenaphthene	0.0995	0.0986	J	ug/L		99	50 - 150
Acenaphthylene	0.0995	0.0866	J	ug/L		87	50 - 150
Acetochlor	0.0498	0.0494	J	ug/L		99	50 - 150
Alachlor	0.0498	0.0575		ug/L		116	50 - 150
alpha-BHC	0.0995	0.107		ug/L		107	50 - 150
alpha-Chlordane	0.0249	<0.029		ug/L		89	50 - 150
Anthracene	0.0199	<0.019		ug/L		88	50 - 150
Atrazine	0.0498	0.0555		ug/L		112	50 - 150
Benz(a)anthracene	0.0498	0.0468	J	ug/L		94	50 - 150
Benzo[a]pyrene	0.0199	0.0168	J	ug/L		84	50 - 150
Benzo[b]fluoranthene	0.0199	0.0202		ug/L		102	50 - 150
Benzo[g,h,i]perylene	0.0498	0.0480	J	ug/L		96	50 - 150
Benzo[k]fluoranthene	0.0199	0.0202		ug/L		102	50 - 150
beta-BHC	0.0995	0.115		ug/L		116	50 - 150
Bis(2-ethylhexyl) phthalate	0.597	0.597	J	ug/L		100	50 - 150
Bromacil	0.0995	0.131		ug/L		132	50 - 150

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: MRL 380-48728/22-A
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 48728

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Butachlor	0.0498	0.0542		ug/L		109	50 - 150
Butylbenzylphthalate	0.149	0.147	J	ug/L		99	50 - 150
Chlorobenzilate	0.0995	0.169	^3+	ug/L		170	50 - 150
Chloroneb	0.0995	0.101		ug/L		102	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0995	0.128		ug/L		128	50 - 150
Chlorpyrifos	0.0498	0.0557		ug/L		112	50 - 150
Chrysene	0.0199	0.0199	J	ug/L		100	50 - 150
delta-BHC	0.0995	0.119		ug/L		119	50 - 150
Di(2-ethylhexyl)adipate	0.299	0.326	J	ug/L		109	50 - 150
Dibenz(a,h)anthracene	0.0498	0.0415	J	ug/L		83	50 - 150
Diclorvos (DDVP)	0.0498	0.0916	^3+	ug/L		184	50 - 150
Dieldrin	0.0995	0.108	J	ug/L		109	50 - 150
Diethylphthalate	0.149	0.170	J	ug/L		114	50 - 150
Dimethylphthalate	0.299	0.306	J	ug/L		102	50 - 150
Di-n-butyl phthalate	0.299	0.337	J	ug/L		113	49 - 243
Di-n-octyl phthalate	0.0995	0.0798	J	ug/L		80	50 - 150
Endosulfan I (Alpha)	0.0995	0.0896	J	ug/L		90	50 - 150
Endosulfan II (Beta)	0.0995	0.126		ug/L		127	50 - 150
Endosulfan sulfate	0.0995	0.0958	J	ug/L		96	50 - 150
Endrin	0.0995	0.115		ug/L		116	50 - 150
Endrin aldehyde	0.0995	<0.084		ug/L		81	50 - 150
EPTC	0.0995	0.100		ug/L		101	50 - 150
Fluoranthene	0.0498	0.0554	J	ug/L		111	50 - 150
Fluorene	0.0498	0.0514		ug/L		103	50 - 150
gamma-Chlordane	0.0249	0.0236	J	ug/L		95	50 - 150
Heptachlor	0.0398	0.0412		ug/L		103	50 - 150
Heptachlor epoxide (isomer B)	0.0498	0.0478	J	ug/L		96	50 - 150
Hexachlorobenzene	0.0498	0.0462	J	ug/L		93	50 - 150
Hexachlorocyclopentadiene	0.0498	0.0389	J	ug/L		78	50 - 150
Indeno[1,2,3-cd]pyrene	0.0498	0.0462	J	ug/L		93	50 - 150
Isophorone	0.0995	0.108	J	ug/L		108	50 - 150
Lindane	0.0398	0.0452		ug/L		114	50 - 150
Malathion	0.0995	0.132		ug/L		133	50 - 150
Methoxychlor	0.0995	0.120		ug/L		120	50 - 150
Metolachlor	0.0498	0.0578		ug/L		116	50 - 150
Molinate	0.0995	0.109		ug/L		110	50 - 150
Naphthalene	0.0995	0.112	J	ug/L		112	50 - 150
Parathion	0.0995	0.130		ug/L		131	50 - 150
Pendimethalin (Penoxaline)	0.0995	0.126		ug/L		126	50 - 150
Phenanthrene	0.0199	0.0226	J	ug/L		113	50 - 150
Propachlor	0.0498	0.0496	J	ug/L		100	50 - 150
Pyrene	0.0498	0.0542		ug/L		109	50 - 150
Simazine	0.0498	0.0522		ug/L		105	50 - 150
Terbacil	0.0995	0.111		ug/L		111	50 - 150
Terbutylazine	0.0995	0.103		ug/L		104	50 - 150
Thiobencarb	0.0995	0.117	J	ug/L		118	50 - 150
trans-Nonachlor	0.0249	<0.026		ug/L		93	50 - 150
Trifluralin	0.0995	0.108		ug/L		109	50 - 150

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: MRL 380-48728/22-A
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 48728

Surrogate	%Recovery	MRL MRL Qualifier	Limits
2-Nitro-m-xylene	99		70 - 130
Perylene-d12	90		70 - 130
Triphenylphosphate	98		70 - 130

Lab Sample ID: 380-55614-AI-1-A MS
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 48728

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.098		1.98	2.06		ug/L		104	70 - 130
2,4'-DDD	<0.098		1.98	2.14		ug/L		108	70 - 130
2,4'-DDE	<0.098		1.98	2.05		ug/L		103	70 - 130
2,4'-DDT	<0.098		1.98	2.18		ug/L		110	70 - 130
2,4-Dinitrotoluene	<0.098		1.98	2.16		ug/L		109	70 - 130
2,6-Dinitrotoluene	<0.098		1.98	2.16		ug/L		109	70 - 130
2-Methylnaphthalene	<0.098		1.98	2.09		ug/L		105	70 - 130
4,4'-DDD	<0.098		1.98	2.18		ug/L		110	70 - 130
4,4'-DDE	<0.098		1.98	2.06		ug/L		104	70 - 130
4,4'-DDT	<0.098		1.98	2.06		ug/L		104	70 - 130
Acenaphthene	<0.098		1.98	2.04		ug/L		103	70 - 130
Acenaphthylene	<0.098		1.98	2.09		ug/L		105	70 - 130
Acetochlor	<0.098		1.98	2.49		ug/L		125	70 - 130
Alachlor	<0.049		1.98	2.12		ug/L		107	70 - 130
alpha-BHC	<0.098		1.98	2.18		ug/L		110	70 - 130
alpha-Chlordane	<0.049		1.98	1.95		ug/L		98	70 - 130
Anthracene	<0.020		1.98	2.07		ug/L		104	70 - 130
Atrazine	<0.049		1.98	2.30		ug/L		116	70 - 130
Benz(a)anthracene	<0.049		1.98	2.21		ug/L		111	70 - 130
Benzo[a]pyrene	<0.020		1.98	2.10		ug/L		106	70 - 130
Benzo[b]fluoranthene	<0.020		1.98	2.19		ug/L		110	70 - 130
Benzo[g,h,i]perylene	<0.049		1.98	2.02		ug/L		102	70 - 130
Benzo[k]fluoranthene	<0.020		1.98	2.19		ug/L		111	70 - 130
beta-BHC	<0.098		1.98	2.19		ug/L		110	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.98	2.02		ug/L		102	70 - 130
Bromacil	<0.098		1.98	2.22		ug/L		112	70 - 130
Butachlor	<0.049		1.98	2.33		ug/L		117	70 - 130
Butylbenzylphthalate	<0.49		1.98	2.34		ug/L		118	70 - 130
Chlorobenzilate	<0.098	^3+	1.98	2.56		ug/L		129	70 - 130
Chloroneb	<0.098		1.98	2.09		ug/L		105	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098		1.98	2.08		ug/L		105	70 - 130
Chlorpyrifos	<0.049		1.98	2.21		ug/L		112	70 - 130
Chrysene	<0.020		1.98	2.13		ug/L		108	70 - 130
delta-BHC	<0.098		1.98	2.07		ug/L		104	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.98	2.19		ug/L		110	70 - 130
Dibenz(a,h)anthracene	<0.049		1.98	2.16		ug/L		109	70 - 130
Diclorvos (DDVP)	<0.049	^3+ *+ F1	1.98	2.63	F1	ug/L		132	70 - 130
Dieldrin	<0.20		1.98	2.07		ug/L		104	70 - 130
Diethylphthalate	<0.49		1.98	2.27		ug/L		114	70 - 130

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55774-AK-3-A DU
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 48728

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
2,4'-DDE	<0.099		<0.098		ug/L		NC	20
2,4'-DDT	<0.099		<0.098		ug/L		NC	20
2,4-Dinitrotoluene	<0.099		<0.098		ug/L		NC	20
2,6-Dinitrotoluene	<0.099		<0.098		ug/L		NC	20
2-Methylnaphthalene	<0.099		<0.098		ug/L		NC	20
4,4'-DDD	<0.099		<0.098		ug/L		NC	20
4,4'-DDE	<0.099		<0.098		ug/L		NC	20
4,4'-DDT	<0.099		<0.098		ug/L		NC	20
Acenaphthene	<0.099		<0.098		ug/L		NC	20
Acenaphthylene	<0.099		<0.098		ug/L		NC	20
Acetochlor	<0.099		<0.098		ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.099		<0.098		ug/L		NC	20
alpha-Chlordane	<0.049		<0.049		ug/L		NC	20
Anthracene	<0.020		<0.020		ug/L		NC	20
Atrazine	<0.049		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.049		ug/L		NC	20
Benzo[a]pyrene	<0.020		<0.020		ug/L		NC	20
Benzo[b]fluoranthene	<0.020		<0.020		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.020		<0.020		ug/L		NC	20
beta-BHC	<0.099		<0.098		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.59		ug/L		NC	20
Bromacil	<0.099		<0.098		ug/L		NC	20
Butachlor	<0.049		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.49		ug/L		NC	20
Chlorobenzilate	<0.099	^3+	<0.098		ug/L		NC	20
Chloroneb	<0.099		<0.098		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.099		<0.098		ug/L		NC	20
Chlorpyrifos	<0.049		<0.049		ug/L		NC	20
Chrysene	<0.020		<0.020		ug/L		NC	20
delta-BHC	<0.099		<0.098		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.59		<0.59		ug/L		NC	20
Dibenz(a,h)anthracene	<0.049		<0.049		ug/L		NC	20
Diclorvos (DDVP)	<0.049	^3+ *+	<0.049	*+	ug/L		NC	20
Dieldrin	<0.20		<0.20		ug/L		NC	20
Diethylphthalate	<0.49		<0.49		ug/L		NC	20
Dimethylphthalate	<0.49		<0.49		ug/L		NC	20
Di-n-butyl phthalate	<0.99		<0.98		ug/L		NC	20
Di-n-octyl phthalate	<0.099		<0.098		ug/L		NC	20
Endosulfan I (Alpha)	<0.099		<0.098		ug/L		NC	20
Endosulfan II (Beta)	<0.099		<0.098		ug/L		NC	20
Endosulfan sulfate	<0.099		<0.098		ug/L		NC	20
Endrin	<0.099		<0.098		ug/L		NC	20
Endrin aldehyde	<0.099		<0.098		ug/L		NC	20
EPTC	<0.099		<0.098		ug/L		NC	20
Fluoranthene	<0.099		<0.098		ug/L		NC	20
Fluorene	<0.049		<0.049		ug/L		NC	20
gamma-Chlordane	<0.049		<0.049		ug/L		NC	20

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55774-AK-3-A DU
Matrix: Water
Analysis Batch: 48954

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 48728

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Heptachlor	<0.039		<0.039		ug/L		NC	20
Heptachlor epoxide (isomer B)	<0.049		<0.049		ug/L		NC	20
Hexachlorobenzene	<0.049		<0.049		ug/L		NC	20
Hexachlorocyclopentadiene	<0.049		<0.049		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.049		<0.049		ug/L		NC	20
Isophorone	<0.49		<0.49		ug/L		NC	20
Lindane	<0.039		<0.039		ug/L		NC	20
Malathion	<0.099		<0.098		ug/L		NC	20
Methoxychlor	<0.099		<0.098		ug/L		NC	20
Metolachlor	<0.049		<0.049		ug/L		NC	20
Molinate	<0.099		<0.098		ug/L		NC	20
Naphthalene	<0.30		<0.29		ug/L		NC	20
Parathion	<0.099		<0.098		ug/L		NC	20
Pendimethalin (Penoxaline)	<0.099		<0.098		ug/L		NC	20
Phenanthrene	<0.039		<0.039		ug/L		NC	20
Propachlor	<0.049		<0.049		ug/L		NC	20
Pyrene	<0.049		<0.049		ug/L		NC	20
Simazine	<0.049		<0.049		ug/L		NC	20
Terbacil	<0.099		<0.098		ug/L		NC	20
Terbutylazine	<0.099		<0.098		ug/L		NC	20
Thiobencarb	<0.20		<0.20		ug/L		NC	20
Total Permethrin (mixed isomers)	<0.20		<0.20		ug/L		NC	20
trans-Nonachlor	<0.049		<0.049		ug/L		NC	20
Trifluralin	<0.099		<0.098		ug/L		NC	20

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	96		70 - 130
Perylene-d12	90		70 - 130
Triphenylphosphate	101		70 - 130

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

Lab Sample ID: MBL 380-50042/18-A
Matrix: Water
Analysis Batch: 50643

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50042

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1

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QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: MBL 380-50042/18-A
Matrix: Water
Analysis Batch: 50643

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50042

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	0.542	J	2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		08/02/23 16:10	08/07/23 19:00	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	50		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C6 PFDA	75		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C5 PFHxA	64		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C4 PFHpA	72		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C8 PFOA	72		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C9 PFNA	75		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C7 PFUnA	81		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C2 PFDoA	78		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C4 PFBA	60		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C5 PFPeA	66		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C3 PFBS	91		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C3 PFHxS	90		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C8 PFOS	87		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C2-4:2-FTS	104		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C2-6:2-FTS	105		50 - 200	08/02/23 16:10	08/07/23 19:00	1
13C2-8:2-FTS	95		50 - 200	08/02/23 16:10	08/07/23 19:00	1

Lab Sample ID: LCS 380-50042/20-A
Matrix: Water
Analysis Batch: 50643

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50042

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	120	113		ng/L		94	70 - 130

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QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: LCS 380-50042/20-A
Matrix: Water
Analysis Batch: 50643

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50042

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	119		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	113		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	108		ng/L		90	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	114		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	120	118		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	120	109		ng/L		91	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	121		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	117		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	120	116		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	120	116		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	117		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	120	117		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	112		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	120	117		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	115		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	121		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	118		ng/L		99	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	101		ng/L		84	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	112		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	127		ng/L		106	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	119		ng/L		99	70 - 130
Perfluoropentanoic acid (PFPeA)	120	126		ng/L		105	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	121		ng/L		101	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	121		ng/L		101	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	78		50 - 200
13C6 PFDA	90		50 - 200
13C5 PFHxA	81		50 - 200
13C4 PFHpA	79		50 - 200
13C8 PFOA	81		50 - 200
13C9 PFNA	88		50 - 200
13C7 PFUnA	97		50 - 200
13C2 PFDoA	94		50 - 200
13C4 PFBA	75		50 - 200

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: LCS 380-50042/20-A
Matrix: Water
Analysis Batch: 50643

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50042

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
13C5 PFPeA	80		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	99		50 - 200
13C8 PFOS	96		50 - 200
13C2-4:2-FTS	111		50 - 200
13C2-6:2-FTS	111		50 - 200
13C2-8:2-FTS	103		50 - 200

Lab Sample ID: LCSD 380-50042/21-A
Matrix: Water
Analysis Batch: 50643

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 50042

<i>Analyte</i>	<i>Spike Added</i>	<i>LCSD Result</i>	<i>LCSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	116		ng/L		97	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	124		ng/L		103	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	113		ng/L		94	70 - 130	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	109		ng/L		91	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	120	116		ng/L		97	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	120	116		ng/L		97	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	120	113		ng/L		94	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	120	118		ng/L		98	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	120	115		ng/L		96	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	120	117		ng/L		97	70 - 130	1	30
Perfluorononanoic acid (PFNA)	120	113		ng/L		94	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	120	120		ng/L		100	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	120	115		ng/L		96	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	120	110		ng/L		92	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	120	113		ng/L		94	70 - 130	4	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	123		ng/L		102	70 - 130	6	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	119		ng/L		99	70 - 130	2	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	115		ng/L		96	70 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	112		ng/L		93	70 - 130	11	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	111		ng/L		92	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	120		ng/L		99	70 - 130	6	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	115		ng/L		96	70 - 130	4	30

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QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: LCSD 380-50042/21-A
Matrix: Water
Analysis Batch: 50643

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 50042

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit	
Perfluoropentanoic acid (PFPeA)	120	122		ng/L		101	70 - 130	3	30	
Perfluoroheptanesulfonic acid (PFHpS)	120	121		ng/L		100	70 - 130	0	30	
Perfluoropentanesulfonic acid (PFPeS)	120	122		ng/L		101	70 - 130	0	30	
		LCSD	LCSD							
Isotope Dilution	%Recovery	Qualifier	Limits							
13C3 HFPO-DA	74		50 - 200							
13C6 PFDA	87		50 - 200							
13C5 PFHxA	80		50 - 200							
13C4 PFHpA	79		50 - 200							
13C8 PFOA	80		50 - 200							
13C9 PFNA	86		50 - 200							
13C7 PFUnA	96		50 - 200							
13C2 PFDoA	92		50 - 200							
13C4 PFBA	80		50 - 200							
13C5 PFPeA	82		50 - 200							
13C3 PFBS	96		50 - 200							
13C3 PFHxS	96		50 - 200							
13C8 PFOS	93		50 - 200							
13C2-4:2-FTS	110		50 - 200							
13C2-6:2-FTS	109		50 - 200							
13C2-8:2-FTS	99		50 - 200							

Lab Sample ID: MRL 380-50042/19-A
Matrix: Water
Analysis Batch: 50643

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50042

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.93	J	ng/L		96	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.11	J	ng/L		105	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.50	J	ng/L		75	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.91	J *5-	ng/L		95	50 - 150		
Perfluorobutanesulfonic acid (PFBS)	2.00	2.00	J	ng/L		100	50 - 150		
Perfluorodecanoic acid (PFDA)	2.00	1.89	J	ng/L		94	50 - 150		
Perfluorododecanoic acid (PFDoA)	2.00	1.76	J	ng/L		88	50 - 150		
Perfluoroheptanoic acid (PFHpA)	2.00	1.89	J	ng/L		94	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.94	J	ng/L		97	50 - 150		
Perfluorohexanoic acid (PFHxA)	2.00	1.79	J	ng/L		89	50 - 150		
Perfluorononanoic acid (PFNA)	2.00	1.96	J	ng/L		98	50 - 150		
Perfluorooctanesulfonic acid (PFOS)	2.00	2.01	J	ng/L		100	50 - 150		
Perfluorooctanoic acid (PFOA)	2.00	1.95	J	ng/L		97	50 - 150		

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: MRL 380-50042/19-A
Matrix: Water
Analysis Batch: 50643

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50042

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	2.00	1.79	J	ng/L		89	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.25	J	ng/L		112	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	1.99	J	ng/L		99	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	1.88	J	ng/L		94	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.52	J	ng/L		126	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.40	J	ng/L		70	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.79	J	ng/L		89	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.69	J	ng/L		84	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.03	J	ng/L		101	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.91	J	ng/L		95	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C3 HFPO-DA	47	*5- ^3-	50 - 200
13C6 PFDA	76		50 - 200
13C5 PFHxA	61		50 - 200
13C4 PFHpA	65		50 - 200
13C8 PFOA	64		50 - 200
13C9 PFNA	70		50 - 200
13C7 PFUnA	87		50 - 200
13C2 PFDoA	84		50 - 200
13C4 PFBA	58		50 - 200
13C5 PFPeA	69		50 - 200
13C3 PFBS	97		50 - 200
13C3 PFHxS	95		50 - 200
13C8 PFOS	90		50 - 200
13C2-4:2-FTS	119		50 - 200
13C2-6:2-FTS	112		50 - 200
13C2-8:2-FTS	98		50 - 200

Lab Sample ID: 380-55683-O-1-B MS
Matrix: Water
Analysis Batch: 50643

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 50042

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.1	60.7		ng/L		101	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.1	63.5		ng/L		106	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55683-O-1-B MS
Matrix: Water
Analysis Batch: 50643

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 50042

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.1	60.6		ng/L		101	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.1	66.0		ng/L		110	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.1	64.3		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.1	56.5		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.1	59.1		ng/L		98	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.1	58.5		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.1	59.4		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.1	60.8		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.1	60.0		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.1	58.5		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.1	60.2		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.1	54.1		ng/L		90	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.1	59.1		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.1	56.7		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.1	62.6		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.1	59.0		ng/L		98	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.1	55.2		ng/L		92	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.1	62.0		ng/L		103	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.1	74.2		ng/L		123	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.1	64.0		ng/L		107	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.1	63.6		ng/L		105	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.1	61.0		ng/L		102	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.1	62.8		ng/L		105	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	80		50 - 200
13C6 PFDA	95		50 - 200
13C5 PFHxA	94		50 - 200
13C4 PFHpA	96		50 - 200
13C8 PFOA	93		50 - 200
13C9 PFNA	95		50 - 200
13C7 PFUnA	100		50 - 200
13C2 PFDoA	91		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	113		50 - 200
13C3 PFBS	93		50 - 200
13C3 PFHxS	94		50 - 200

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55683-O-1-B MS
Matrix: Water
Analysis Batch: 50643

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 50042

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C8 PFOS	94		50 - 200
13C2-4:2-FTS	107		50 - 200
13C2-6:2-FTS	108		50 - 200
13C2-8:2-FTS	104		50 - 200

Lab Sample ID: 380-55685-1 DU
Matrix: Drinking Water
Analysis Batch: 50643

Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
Prep Type: Total/NA
Prep Batch: 50042

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

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55685-1 DU
Matrix: Drinking Water
Analysis Batch: 50643

Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
Prep Type: Total/NA
Prep Batch: 50042

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Perfluoropentanesulfonic acid (PFPeS)	<2.0		<2.0		ng/L		NC	30
DU DU								
Isotope Dilution	%Recovery	Qualifier	Limits					
13C3 HFPO-DA	85		50 - 200					
13C6 PFDA	90		50 - 200					
13C5 PFHxA	92		50 - 200					
13C4 PFHpA	95		50 - 200					
13C8 PFOA	92		50 - 200					
13C9 PFNA	92		50 - 200					
13C7 PFUnA	93		50 - 200					
13C2 PFDoA	87		50 - 200					
13C4 PFBA	89		50 - 200					
13C5 PFPeA	99		50 - 200					
13C3 PFBS	96		50 - 200					
13C3 PFHxS	96		50 - 200					
13C8 PFOS	94		50 - 200					
13C2-4:2-FTS	121		50 - 200					
13C2-6:2-FTS	117		50 - 200					
13C2-8:2-FTS	107		50 - 200					

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

Lab Sample ID: MBL 380-48694/23-A
Matrix: Water
Analysis Batch: 48883

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 48694

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<0.58		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<0.42		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1

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QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: MBL 380-48694/23-A
Matrix: Water
Analysis Batch: 48883

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 48694

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/25/23 09:17	07/26/23 19:58	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	107		70 - 130	07/25/23 09:17	07/26/23 19:58	1
13C2 PFHxA	114		70 - 130	07/25/23 09:17	07/26/23 19:58	1
13C2 PFDA	113		70 - 130	07/25/23 09:17	07/26/23 19:58	1
13C3-GenX	102		70 - 130	07/25/23 09:17	07/26/23 19:58	1

Lab Sample ID: LCS 380-48694/25-A
Matrix: Water
Analysis Batch: 48883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 48694

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	19.8		ng/L		79	70 - 130
Perfluorooctanesulfonic acid (PFOS)	23.2	22.4		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	24.2		ng/L		96	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	23.1		ng/L		92	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	23.5		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	26.3		ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	23.0		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	27.2		ng/L		108	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	25.2		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	22.9	22.4		ng/L		98	70 - 130
Perfluorobutanesulfonic acid (PFBS)	22.2	21.2		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	26.8		ng/L		107	70 - 130
Perfluorononanoic acid (PFNA)	25.1	28.8		ng/L		115	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	21.7		ng/L		86	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	25.1	22.0		ng/L		88	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	23.5	22.1		ng/L		94	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	23.7	20.1		ng/L		85	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	23.7	25.3		ng/L		107	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	98		70 - 130
13C2 PFHxA	112		70 - 130
13C2 PFDA	108		70 - 130

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QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: LCS 380-48694/25-A
Matrix: Water
Analysis Batch: 48883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 48694

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

Lab Sample ID: LCSD 380-48694/26-A
Matrix: Water
Analysis Batch: 48883

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 48694

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	
							Limits	RPD	Limit	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	21.7		ng/L		86	70 - 130	9	30	
Perfluorooctanesulfonic acid (PFOS)	23.2	23.0		ng/L		99	70 - 130	2	30	
Perfluoroundecanoic acid (PFUnA)	25.1	24.6		ng/L		98	70 - 130	2	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	26.0		ng/L		104	70 - 130	12	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	25.7		ng/L		102	70 - 130	9	30	
Perfluorohexanoic acid (PFHxA)	25.1	25.0		ng/L		100	70 - 130	5	30	
Perfluorododecanoic acid (PFDoA)	25.1	23.6		ng/L		94	70 - 130	3	30	
Perfluorooctanoic acid (PFOA)	25.1	26.4		ng/L		105	70 - 130	3	30	
Perfluorodecanoic acid (PFDA)	25.1	26.0		ng/L		103	70 - 130	3	30	
Perfluorohexanesulfonic acid (PFHxS)	22.9	22.6		ng/L		99	70 - 130	1	30	
Perfluorobutanesulfonic acid (PFBS)	22.2	20.6		ng/L		93	70 - 130	3	30	
Perfluoroheptanoic acid (PFHpA)	25.1	25.8		ng/L		103	70 - 130	4	30	
Perfluorononanoic acid (PFNA)	25.1	28.8		ng/L		115	70 - 130	0	30	
Perfluorotetradecanoic acid (PFTA)	25.1	21.8		ng/L		87	70 - 130	0	30	
Perfluorotridecanoic acid (PFTrDA)	25.1	22.4		ng/L		89	70 - 130	2	30	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	23.5	23.4		ng/L		99	70 - 130	6	30	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	23.7	21.2		ng/L		89	70 - 130	5	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	23.7	25.2		ng/L		106	70 - 130	0	30	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	117		70 - 130
13C2 PFHxA	117		70 - 130
13C2 PFDA	117		70 - 130
13C3-GenX	102		70 - 130

QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: MRL 380-48694/24-A
Matrix: Water
Analysis Batch: 48883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 48694

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.91	J	ng/L		95	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.31	J	ng/L		124	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.57	J	ng/L		128	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.68	J	ng/L		134	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.83	J	ng/L		141	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.68	J	ng/L		133	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.53	J	ng/L		126	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	3.00	J	ng/L		149	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.79	J	ng/L		139	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.45	J	ng/L		134	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.78	2.12	J	ng/L		119	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.99	J	ng/L		149	50 - 150
Perfluorononanoic acid (PFNA)	2.01	3.20	J ^3+	ng/L		159	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.37	J	ng/L		118	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.38	J	ng/L		119	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.88	2.33	J	ng/L		124	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.90	2.07	J	ng/L		109	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.90	2.69	J	ng/L		142	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	111		70 - 130
13C2 PFHxA	114		70 - 130
13C2 PFDA	111		70 - 130
13C3-GenX	98		70 - 130

Lab Sample ID: 380-55757-A-1-B MS
Matrix: Water
Analysis Batch: 48883

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 48694

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	22.3		ng/L		89	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		23.2	24.9		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	23.9		ng/L		95	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	24.8		ng/L		99	70 - 130

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QC Sample Results

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55757-A-1-B MS
Matrix: Water
Analysis Batch: 48883

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 48694

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	25.1		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	2.1		25.1	27.5		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	23.5		ng/L		93	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	28.0		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	25.5		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		22.9	23.2		ng/L		98	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		22.2	22.3		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	25.7		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	<2.0	^3+	25.1	28.7		ng/L		114	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	21.5		ng/L		86	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.1	21.6		ng/L		86	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		23.5	23.5		ng/L		100	70 - 130
11-Chloroeicosasfluoro-3-oxaundecane-1-sulfonic acid(11Cl-PF3OUdS)	<2.0		23.7	20.9		ng/L		88	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		23.7	25.4		ng/L		107	70 - 130
Surrogate	%Recovery	MS Qualifier	MS Limits						
d5-NEtFOSAA	109		70 - 130						
13C2 PFHxA	112		70 - 130						
13C2 PFDA	110		70 - 130						
13C3-GenX	102		70 - 130						

Lab Sample ID: 380-55757-A-1-C MSD
Matrix: Water
Analysis Batch: 48883

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 48694

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	20.3		ng/L		81	70 - 130	9	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		23.2	24.2		ng/L		102	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	23.8		ng/L		95	70 - 130	0	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	24.7		ng/L		98	70 - 130	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	24.0		ng/L		96	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	2.1		25.1	26.9		ng/L		99	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	22.6		ng/L		90	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	<2.0		25.1	27.4		ng/L		102	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	25.6		ng/L		102	70 - 130	0	30

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QC Association Summary

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

Job ID: 380-55685-1

GC/MS Semi VOA

Prep Batch: 48728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-55685-1	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	525.2	
MB 380-48728/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-48728/23-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-48728/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-48728/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-55614-AI-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-55774-AK-3-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 48954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-55685-1	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	525.2	48728
MB 380-48728/21-A	Method Blank	Total/NA	Water	525.2	48728
LCS 380-48728/23-A	Lab Control Sample	Total/NA	Water	525.2	48728
LCSD 380-48728/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	48728
MRL 380-48728/22-A	Lab Control Sample	Total/NA	Water	525.2	48728
380-55614-AI-1-A MS	Matrix Spike	Total/NA	Water	525.2	48728
380-55774-AK-3-A DU	Duplicate	Total/NA	Water	525.2	48728

LCMS

Prep Batch: 48694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-55685-1	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	537.1 DW	
380-55685-3	FB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	537.1 DW	
MBL 380-48694/23-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-48694/25-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-48694/26-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-48694/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-55757-A-1-B MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-55757-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 48883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-55685-1	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	537.1	48694
380-55685-3	FB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	537.1	48694
MBL 380-48694/23-A	Method Blank	Total/NA	Water	537.1	48694
LCS 380-48694/25-A	Lab Control Sample	Total/NA	Water	537.1	48694
LCSD 380-48694/26-A	Lab Control Sample Dup	Total/NA	Water	537.1	48694
MRL 380-48694/24-A	Lab Control Sample	Total/NA	Water	537.1	48694
380-55757-A-1-B MS	Matrix Spike	Total/NA	Water	537.1	48694
380-55757-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	48694

Prep Batch: 50042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-55685-1	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	533	
380-55685-3	FB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	533	
MBL 380-50042/18-A	Method Blank	Total/NA	Water	533	
LCS 380-50042/20-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-50042/21-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-50042/19-A	Lab Control Sample	Total/NA	Water	533	
380-55683-O-1-B MS	Matrix Spike	Total/NA	Water	533	

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-55685-1

LCMS (Continued)

Prep Batch: 50042 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-55685-1 DU	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	533	

Analysis Batch: 50643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-55685-1	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	533	50042
380-55685-3	FB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	533	50042
MBL 380-50042/18-A	Method Blank	Total/NA	Water	533	50042
LCS 380-50042/20-A	Lab Control Sample	Total/NA	Water	533	50042
LCSD 380-50042/21-A	Lab Control Sample Dup	Total/NA	Water	533	50042
MRL 380-50042/19-A	Lab Control Sample	Total/NA	Water	533	50042
380-55683-O-1-B MS	Matrix Spike	Total/NA	Water	533	50042
380-55685-1 DU	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	533	50042



Lab Chronicle

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

Job ID: 380-55685-1

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

Lab Sample ID: 380-55685-1

Date Collected: 07/18/23 13:30

Matrix: Drinking Water

Date Received: 07/20/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			48728	G9MN	EA POM	07/25/23 16:50
Total/NA	Analysis	525.2		1	48954	UPAC	EA POM	07/26/23 20:50
Total/NA	Prep	533			50042	EE6W	EA POM	08/02/23 16:10
Total/NA	Analysis	533		1	50643	Y7BM	EA POM	08/07/23 19:58
Total/NA	Prep	537.1 DW			48694	US1B	EA POM	07/25/23 09:17
Total/NA	Analysis	537.1		1	48883	UKDT	EA POM	07/26/23 21:43

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

Lab Sample ID: 380-55685-3

Date Collected: 07/18/23 13:30

Matrix: Water

Date Received: 07/20/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			50042	EE6W	EA POM	08/02/23 16:10
Total/NA	Analysis	533		1	50643	Y7BM	EA POM	08/07/23 21:52
Total/NA	Prep	537.1 DW			48694	US1B	EA POM	07/25/23 09:17
Total/NA	Analysis	537.1		1	48883	UKDT	EA POM	07/26/23 21:53

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 380-55685-1

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

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

Accreditation/Certification Summary

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

Job ID: 380-55685-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date
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The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

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

Accreditation/Certification Summary

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

Job ID: 380-55685-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
<u>Analysis Method</u>	<u>Prep Method</u>	<u>Matrix</u>	<u>Analyte</u>
533	533	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
533	533	Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)
533	533	Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Water	Perfluorobutanoic acid (PFBA)
533	533	Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Water	Perfluoropentanoic acid (PFPeA)
537.1	537.1 DW	Drinking Water	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
537.1	537.1 DW	Water	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)

Method Summary

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

Job ID: 380-55685-1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
525.2	Extraction of Semivolatile Compounds	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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



Sample Summary

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

Job ID: 380-55685-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-55685-1	AIEA WELLS PUMPS 1&2 (260)	Drinking Water	07/18/23 13:30	07/20/23 10:15	HI0000331
380-55685-3	FB: AIEA WELLS PUMPS 1&2 (260)	Water	07/18/23 13:30	07/20/23 10:15	

- 1
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Monrovia, CA (Suite 100)

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

Chain of Custody Record



Client Information		Sampler: <i>Pryston Nakamoto</i>		Lab PM: Arada, Rachelle		Carrier Tracking No(s):		COC No: 380-27941-2757.2																																																																																																																																																																													
Client Contact: Dr. Ron Fenstermacher		Phone: 808-748-5840		E-Mail: Rachelle.Arada@et.euronisus.com		State of Origin:		Page: Page 2 of 2																																																																																																																																																																													
Company: City & County of Honolulu		PWSID:		Analysis Requested						Job #:																																																																																																																																																																											
Address: 630 South Beretania Street; Chemistry Lab		Due Date Requested:		<table border="1"> <tr> <td>Field Filtered Sample (Yes or No)</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> <td>11</td> <td>12</td> <td>13</td> <td>14</td> <td>15</td> <td>16</td> <td>17</td> </tr> <tr> <td>Perform MS/MSD (Yes or No)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SUBCONTRACT - (MOD) 525plus PLUS TICs</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>537.1_DW_PREC - 537.1 Full List</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>533 - All Analytes</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						Field Filtered Sample (Yes or No)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Perform MS/MSD (Yes or No)																			SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs																			SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)																			SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil																			SUBCONTRACT - (MOD) 525plus PLUS TICs																			SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)																			537.1_DW_PREC - 537.1 Full List																			533 - All Analytes																			Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDTA Y - Trizma Z - other (specify) Other:	
Field Filtered Sample (Yes or No)	1	2	3							4	5	6	7	8	9	10	11	12	13	14	15	16	17																																																																																																																																																														
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533 - All Analytes																																																																																																																																																																																					
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Site:		SSOW#:																																																																																																																																																																																			
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)		Analysis Requested		Total Number of containers		Special Instructions/Note:																																																																																																																																																																			
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AIEA GULCH WELLS PUMP2								Water																																																																																																																																																																													
AIEA WELLS PUMPS 1&2 (260)		7/18/23		1330		G		Water		2		2 2 4						Pump 2																																																																																																																																																																			
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Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																																																																																																																																																																											
Deliverable Requested: I, II, III, IV, Other (specify)										Special Instructions/QC Requirements: <i>7727 8604 8199</i> <i>FED EX 7727 8566 7334</i>																																																																																																																																																																											
Empty Kit Relinquished by:				Date:				Time:				Method of Shipment:																																																																																																																																																																									
Relinquished		Date/Time: 7/19/23 1500		Company: HBWS		Received by: <i>G. RETNER</i>		Date/Time: 07/20/2023 10:15		Company: <i>EEAP</i>																																																																																																																																																																											
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Date/Time:		Company:		Received by:		Date/Time:		Company:																																																																																																																																																																													
Cooler Temperature(s) °C and Other Remarks:																																																																																																																																																																																					

Monrovia, CA (Suite 100)

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

Chain of Custody Record



Client Information		Sampler: <i>Bryson Nakamoto</i>		Lab PM: Arada, Rachele		Carrier Tracking No(s):		COC No: 380-27941-2757.2			
Client Contact: Dr. Ron Fenstermacher		Phone: 808-748-5840		E-Mail: Rachele.Arada@et.euronisus.com		State of Origin:		Page: Page 2 of 2			
Company: City & County of Honolulu		PWSID:		Analysis Requested						Job #:	
Address: 630 South Beretania Street; Chemistry Lab		Due Date Requested:								Preservation Codes:	
City: Honolulu		TAT Requested (days):		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 - 8915 Diesel LL (EAL) and Motor Oil 525.2_PREC - (MOD) 525plus PLUS TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) 537.1_DW_PREC - 537.1 Full List 533 - All Analytes		Compliance Project: Δ No		Total Number of containers		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 - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
State, Zip: HI, 96843		PO #: C20525101 exp 05312023									
Phone: 808-748-5091 (tel)		WO #:									
Email: rfenstermacher@hbws.org		Project #: 38001111									
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill		SSOW#:		Special Instructions/Note:		Other:					
Site:											
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)			
MOANALUA WELLS								Water			
AIEA GULCH WELLS PUMP2								Water			
AIEA WELLS PUMPS 1&2 (260)		7/18/23		1330		G		Water			
HALAWA WELLS UNITS 1&2								Water			
FB MOANALUA WELLS								Water			
FB AIEA GULCH WELLS PUMP2								Water			
FB AIEA WELLS PUMPS 1&2 (260)		7/18/23						Water			
FB HALAWA WELLS UNITS 1&2								Water			
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)						
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months						
Deliverable Requested: I, II, III, IV, Other (specify)					Special Instructions/QC Requirements: <i>① 7727 8604 8199</i> <i>FED Ex ② 7727 8566 7334</i>						
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment: <i>FED Ex ② 7727 8566 7334</i>					
Relinquished by: <i>Bryson Nakamoto</i>		Date/Time: 7/18/23 1500		Company: HBWS		Received by: <i>G. RETNER</i>		Date/Time: 07/20/2023 10:15			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:			
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>65C - FROZEN (752A) ① 5.1° - 0.2° = 4.9° ② 3.1° - 0.2° = 2.9°</i>							

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-55685-1

Login Number: 55685
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	