

ANALYTICAL REPORT

PREPARED FOR

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City & County of Honolulu
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Honolulu, Hawaii 96843

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JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-62702-1

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: 380-62702-1

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

LCMS

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	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: 380-62702-1

Job ID: 380-62702-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-62702-1

Receipt

The samples were received on 9/13/2023 10:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 0.4° C, 2.5° C, 3.0° C, 3.1° C and 3.4° C.

GC/MS Semi VOA

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

LCMS

Method 533: PFBA contamination was detected in all the QCs (including MBLK and MRL), field sample and Field Blanks for prep batch#55843 and/or analytical batch#56242. Samples affected are: FB MOANALUA WELLS (380-62702-9), FB AIEA GULCH WELLS PUMP 2 (380-62702-10), FB AIEA WELLS PUMPS 1&2 (260) P2 (380-62702-11) and FB HALAWA WELLS UNITS 1 & 2 P1 (380-62702-12). Field blanks have no more backup bottles to re-extract. Data excluded along with the field samples due to this QC failure.

Method 537.1: IS d3-NMeFOSAA failed biased high in field reagent blanks FB MOANALUA WELLS (380-62702-9) and FB AIEA WELLS PUMPS 1&2 (260) P2 (380-62702-11). There is no volume available for re-extraction. Affected analytes qualified. Result not acceptable for method.

Method 537.1: Analyte Perfluorooctanoic acid (PFOA) detected greater than 1/3 MRL in field reagent blanks FB MOANALUA WELLS (380-62702-9), FB AIEA GULCH WELLS PUMP 2 (380-62702-10), FB AIEA WELLS PUMPS 1&2 (260) P2 (380-62702-11) and FB HALAWA WELLS UNITS 1 & 2 P1 (380-62702-12). Associated native samples also have Perfluorooctanoic acid (PFOA) detection. Result not acceptable per method. Data excluded due to this QC failure.

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: 380-62702-1

Client Sample ID: MOANALUA WELLS
PWSID Number: HI0000331

Lab Sample ID: 380-62702-1

No Detections.

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

Lab Sample ID: 380-62702-2

No Detections.

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

Lab Sample ID: 380-62702-3

No Detections.

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

Lab Sample ID: 380-62702-4

No Detections.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

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: 380-62702-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-62702-1

Date Collected: 09/11/23 09:53

Matrix: Drinking Water

Date Received: 09/13/23 10:50

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
2,4'-DDD	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
2,4'-DDE	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
2,4'-DDT	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
2-Methylnaphthalene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
4,4'-DDD	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
4,4'-DDE	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
4,4'-DDT	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Acenaphthene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Acenaphthylene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Acetochlor	<0.099	*+	0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Alachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
alpha-BHC	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
alpha-Chlordane	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Anthracene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:00	1
Atrazine	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Benz(a)anthracene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Benzo[a]pyrene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:00	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:00	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:00	1
beta-BHC	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		09/17/23 23:18	09/19/23 12:00	1
Bromacil	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Butachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Butylbenzylphthalate	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 12:00	1
Chlorobenzilate	<0.099	^3+	0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Chloroneb	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Chlorpyrifos	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Chrysene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:00	1
delta-BHC	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		09/17/23 23:18	09/19/23 12:00	1
Dibenz(a,h)anthracene	<0.049	*+	0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Diclorvos (DDVP)	<0.049	*+ ^3+	0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Dieldrin	<0.20		0.20	ug/L		09/17/23 23:18	09/19/23 12:00	1
Diethylphthalate	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 12:00	1
Dimethylphthalate	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 12:00	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		09/17/23 23:18	09/19/23 12:00	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Endosulfan sulfate	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Endrin	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Endrin aldehyde	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
EPTC	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Fluoranthene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1

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Client Sample Results

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

Job ID: 380-62702-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-62702-1

Date Collected: 09/11/23 09:53

Matrix: Drinking Water

Date Received: 09/13/23 10:50

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		09/17/23 23:18	09/19/23 12:00	1
gamma-Chlordane	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Heptachlor	<0.040		0.040	ug/L		09/17/23 23:18	09/19/23 12:00	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Hexachlorobenzene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Indeno[1,2,3-cd]pyrene	<0.049	*+	0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Isophorone	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 12:00	1
Lindane	<0.040		0.040	ug/L		09/17/23 23:18	09/19/23 12:00	1
Malathion	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Methoxychlor	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Metolachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Molinate	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Naphthalene	<0.30		0.30	ug/L		09/17/23 23:18	09/19/23 12:00	1
Parathion	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Phenanthrene	<0.040		0.040	ug/L		09/17/23 23:18	09/19/23 12:00	1
Propachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Pyrene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Simazine	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Terbacil	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Terbutylazine	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1
Thiobencarb	<0.20	*+	0.20	ug/L		09/17/23 23:18	09/19/23 12:00	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		09/17/23 23:18	09/19/23 12:00	1
trans-Nonachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:00	1
Trifluralin	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:00	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	09/17/23 23:18	09/19/23 12:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	09/17/23 23:18	09/19/23 12:00	1
Perylene-d12	91		70 - 130	09/17/23 23:18	09/19/23 12:00	1
Triphenylphosphate	126		70 - 130	09/17/23 23:18	09/19/23 12:00	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		10/02/23 09:13	10/05/23 11:08	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-62702-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-62702-1

Date Collected: 09/11/23 09:53

Matrix: Drinking Water

Date Received: 09/13/23 10:50

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		10/02/23 09:13	10/05/23 11:08	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:08	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C6 PFDA	92		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C5 PFHxA	92		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C4 PFHpA	88		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C8 PFOA	92		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C9 PFNA	92		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C7 PFUnA	90		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C2 PFDoA	93		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C4 PFBA	93		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C5 PFPeA	143		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C3 PFBS	93		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C3 PFHxS	92		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C8 PFOS	93		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C2-4:2-FTS	147		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C2-6:2-FTS	104		50 - 200			10/02/23 09:13	10/05/23 11:08	1
13C2-8:2-FTS	85		50 - 200			10/02/23 09:13	10/05/23 11:08	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-62702-2

Date Collected: 09/11/23 11:06

Matrix: Drinking Water

Date Received: 09/13/23 10:50

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
2,4'-DDD	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
2,4'-DDE	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
2,4'-DDT	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-62702-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-62702-2

Date Collected: 09/11/23 11:06

Matrix: Drinking Water

Date Received: 09/13/23 10:50

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
2-Methylnaphthalene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
4,4'-DDD	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
4,4'-DDE	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
4,4'-DDT	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Acenaphthene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Acenaphthylene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Acetochlor	<0.099	*+	0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Alachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
alpha-BHC	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
alpha-Chlordane	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Anthracene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:20	1
Atrazine	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Benz(a)anthracene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Benzo[a]pyrene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:20	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:20	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:20	1
beta-BHC	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		09/17/23 23:18	09/19/23 12:20	1
Bromacil	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Butachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Butylbenzylphthalate	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 12:20	1
Chlorobenzilate	<0.099	^3+	0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Chloroneb	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Chlorpyrifos	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Chrysene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:20	1
delta-BHC	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		09/17/23 23:18	09/19/23 12:20	1
Dibenz(a,h)anthracene	<0.049	*+	0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Diclorvos (DDVP)	<0.049	*+ ^3+	0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Dieldrin	<0.20		0.20	ug/L		09/17/23 23:18	09/19/23 12:20	1
Diethylphthalate	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 12:20	1
Dimethylphthalate	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 12:20	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		09/17/23 23:18	09/19/23 12:20	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Endosulfan sulfate	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Endrin	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Endrin aldehyde	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
EPTC	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Fluoranthene	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Fluorene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
gamma-Chlordane	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Heptachlor	<0.039		0.039	ug/L		09/17/23 23:18	09/19/23 12:20	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1

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Client Sample Results

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

Job ID: 380-62702-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-62702-2

Date Collected: 09/11/23 11:06

Matrix: Drinking Water

Date Received: 09/13/23 10:50

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobenzene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Indeno[1,2,3-cd]pyrene	<0.049	*+	0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Isophorone	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 12:20	1
Lindane	<0.039		0.039	ug/L		09/17/23 23:18	09/19/23 12:20	1
Malathion	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Methoxychlor	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Metolachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Molinate	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Naphthalene	<0.30		0.30	ug/L		09/17/23 23:18	09/19/23 12:20	1
Parathion	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Phenanthrene	<0.039		0.039	ug/L		09/17/23 23:18	09/19/23 12:20	1
Propachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Pyrene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Simazine	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Terbacil	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Terbutylazine	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1
Thiobencarb	<0.20	*+	0.20	ug/L		09/17/23 23:18	09/19/23 12:20	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		09/17/23 23:18	09/19/23 12:20	1
trans-Nonachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:20	1
Trifluralin	<0.099		0.099	ug/L		09/17/23 23:18	09/19/23 12:20	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	09/17/23 23:18	09/19/23 12:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	96		70 - 130	09/17/23 23:18	09/19/23 12:20	1
Perylene-d12	91		70 - 130	09/17/23 23:18	09/19/23 12:20	1
Triphenylphosphate	130		70 - 130	09/17/23 23:18	09/19/23 12:20	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		10/02/23 09:13	10/05/23 11:17	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-62702-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-62702-2

Date Collected: 09/11/23 11:06

Matrix: Drinking Water

Date Received: 09/13/23 10:50

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
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/02/23 09:13	10/05/23 11:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	90		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C6 PFDA	91		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C5 PFHxA	93		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C4 PFHpA	93		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C8 PFOA	92		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C9 PFNA	97		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C7 PFUnA	91		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C2 PFDoA	93		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C4 PFBA	95		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C5 PFPeA	119		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C3 PFBS	96		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C3 PFHxS	95		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C8 PFOS	97		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C2-4:2-FTS	130		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C2-6:2-FTS	104		50 - 200	10/02/23 09:13	10/05/23 11:17	1
13C2-8:2-FTS	88		50 - 200	10/02/23 09:13	10/05/23 11:17	1

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

Lab Sample ID: 380-62702-3

Date Collected: 09/11/23 11:34

Matrix: Drinking Water

Date Received: 09/13/23 10:50

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		09/17/23 23:18	09/19/23 12:40	1
2,4'-DDD	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
2,4'-DDE	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
2,4'-DDT	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
2-Methylnaphthalene	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
4,4'-DDD	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: 380-62702-3

Date Collected: 09/11/23 11:34

Matrix: Drinking Water

Date Received: 09/13/23 10:50

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
4,4'-DDT	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Acenaphthene	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Acenaphthylene	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Acetochlor	<0.098	*+	0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Alachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
alpha-BHC	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
alpha-Chlordane	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Anthracene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:40	1
Atrazine	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Benz(a)anthracene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Benzo[a]pyrene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:40	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:40	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:40	1
beta-BHC	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		09/17/23 23:18	09/19/23 12:40	1
Bromacil	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Butachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Butylbenzylphthalate	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 12:40	1
Chlorobenzilate	<0.098	^3+	0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Chloroneb	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Chlorpyrifos	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Chrysene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 12:40	1
delta-BHC	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		09/17/23 23:18	09/19/23 12:40	1
Dibenz(a,h)anthracene	<0.049	*+	0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Diclorvos (DDVP)	<0.049	*+ ^3+	0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Dieldrin	<0.20		0.20	ug/L		09/17/23 23:18	09/19/23 12:40	1
Diethylphthalate	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 12:40	1
Dimethylphthalate	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 12:40	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		09/17/23 23:18	09/19/23 12:40	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Endosulfan sulfate	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Endrin	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Endrin aldehyde	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
EPTC	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Fluoranthene	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Fluorene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
gamma-Chlordane	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Heptachlor	<0.039		0.039	ug/L		09/17/23 23:18	09/19/23 12:40	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Hexachlorobenzene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Indeno[1,2,3-cd]pyrene	<0.049	*+	0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Isophorone	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 12:40	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: 380-62702-3

Date Collected: 09/11/23 11:34

Matrix: Drinking Water

Date Received: 09/13/23 10:50

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lindane	<0.039		0.039	ug/L		09/17/23 23:18	09/19/23 12:40	1
Malathion	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Methoxychlor	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Metolachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Molinate	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Naphthalene	<0.29		0.29	ug/L		09/17/23 23:18	09/19/23 12:40	1
Parathion	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Phenanthrene	<0.039		0.039	ug/L		09/17/23 23:18	09/19/23 12:40	1
Propachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Pyrene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Simazine	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Terbacil	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Terbutylazine	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1
Thiobencarb	<0.20	*+	0.20	ug/L		09/17/23 23:18	09/19/23 12:40	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		09/17/23 23:18	09/19/23 12:40	1
trans-Nonachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 12:40	1
Trifluralin	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 12:40	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	09/17/23 23:18	09/19/23 12:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	95		70 - 130	09/17/23 23:18	09/19/23 12:40	1
Perylene-d12	96		70 - 130	09/17/23 23:18	09/19/23 12:40	1
Triphenylphosphate	127		70 - 130	09/17/23 23:18	09/19/23 12:40	1

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		09/23/23 10:32	09/29/23 22:21	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: 380-62702-3

Date Collected: 09/11/23 11:34

Matrix: Drinking Water

Date Received: 09/13/23 10:50

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
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/23/23 10:32	09/29/23 22:21	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C6 PFDA	89		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C5 PFHxA	95		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C4 PFHpA	94		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C8 PFOA	92		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C9 PFNA	92		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C7 PFUnA	85		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C2 PFDoA	83		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C4 PFBA	92		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C5 PFPeA	92		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C3 PFBS	92		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C3 PFHxS	91		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C8 PFOS	92		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C2-4:2-FTS	117		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C2-6:2-FTS	95		50 - 200			09/23/23 10:32	09/29/23 22:21	1
13C2-8:2-FTS	85		50 - 200			09/23/23 10:32	09/29/23 22:21	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-62702-4

Date Collected: 09/11/23 10:31

Matrix: Drinking Water

Date Received: 09/13/23 10:50

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		09/17/23 23:18	09/19/23 13:00	1
2,4'-DDD	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
2,4'-DDE	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
2,4'-DDT	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
2-Methylnaphthalene	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
4,4'-DDD	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
4,4'-DDE	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
4,4'-DDT	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Acenaphthene	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Acenaphthylene	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-62702-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-62702-4

Date Collected: 09/11/23 10:31

Matrix: Drinking Water

Date Received: 09/13/23 10:50

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetochlor	<0.098	*+	0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Alachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
alpha-BHC	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
alpha-Chlordane	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Anthracene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 13:00	1
Atrazine	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Benz(a)anthracene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Benzo[a]pyrene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 13:00	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 13:00	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 13:00	1
beta-BHC	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		09/17/23 23:18	09/19/23 13:00	1
Bromacil	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Butachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Butylbenzylphthalate	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 13:00	1
Chlorobenzilate	<0.098	^3+	0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Chloroneb	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Chlorpyrifos	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Chrysene	<0.020		0.020	ug/L		09/17/23 23:18	09/19/23 13:00	1
delta-BHC	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		09/17/23 23:18	09/19/23 13:00	1
Dibenz(a,h)anthracene	<0.049	*+	0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Diclorvos (DDVP)	<0.049	*+ ^3+	0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Dieldrin	<0.20		0.20	ug/L		09/17/23 23:18	09/19/23 13:00	1
Diethylphthalate	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 13:00	1
Dimethylphthalate	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 13:00	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		09/17/23 23:18	09/19/23 13:00	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Endosulfan sulfate	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Endrin	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Endrin aldehyde	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
EPTC	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Fluoranthene	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Fluorene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
gamma-Chlordane	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Heptachlor	<0.039		0.039	ug/L		09/17/23 23:18	09/19/23 13:00	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Hexachlorobenzene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Indeno[1,2,3-cd]pyrene	<0.049	*+	0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Isophorone	<0.49		0.49	ug/L		09/17/23 23:18	09/19/23 13:00	1
Lindane	<0.039		0.039	ug/L		09/17/23 23:18	09/19/23 13:00	1
Malathion	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Methoxychlor	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Metolachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-62702-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-62702-4

Date Collected: 09/11/23 10:31

Matrix: Drinking Water

Date Received: 09/13/23 10:50

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Molinate	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Naphthalene	<0.29		0.29	ug/L		09/17/23 23:18	09/19/23 13:00	1
Parathion	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Phenanthrene	<0.039		0.039	ug/L		09/17/23 23:18	09/19/23 13:00	1
Propachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Pyrene	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Simazine	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Terbacil	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Terbutylazine	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1
Thiobencarb	<0.20	*+	0.20	ug/L		09/17/23 23:18	09/19/23 13:00	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		09/17/23 23:18	09/19/23 13:00	1
trans-Nonachlor	<0.049		0.049	ug/L		09/17/23 23:18	09/19/23 13:00	1
Trifluralin	<0.098		0.098	ug/L		09/17/23 23:18	09/19/23 13:00	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	09/17/23 23:18	09/19/23 13:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	09/17/23 23:18	09/19/23 13:00	1
Perylene-d12	92		70 - 130	09/17/23 23:18	09/19/23 13:00	1
Triphenylphosphate	129		70 - 130	09/17/23 23:18	09/19/23 13:00	1

Action Limit Summary

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

Job ID: 380-62702-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-62702-1

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	<0.099		ug/L	2		0.099	525.2	Total/NA
Heptachlor	<0.040		ug/L	0.4		0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2		0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1		0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50		0.049	525.2	Total/NA
Lindane	<0.040		ug/L	0.2		0.040	525.2	Total/NA
Methoxychlor	<0.099		ug/L	40		0.099	525.2	Total/NA
Simazine	<0.049		ug/L	4		0.049	525.2	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-62702-2

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		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	<0.099		ug/L	2		0.099	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	<0.099		ug/L	40		0.099	525.2	Total/NA
Simazine	<0.049		ug/L	4		0.049	525.2	Total/NA

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

Lab Sample ID: 380-62702-3

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		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

Eurofins Eaton Analytical Pomona

Action Limit Summary

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

Job ID: 380-62702-1

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

Lab Sample ID: 380-62702-3

(Continued)

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

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-62702-4

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	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: 380-62702-1

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	2NMX	PRY	TPP
		(70-130)	(70-130)	(70-130)
380-62702-1	MOANALUA WELLS	98	91	126
380-62702-2	AIEA GULCH WELLS PUMP 2	96	91	130
380-62702-3	AIEA WELLS PUMPS 1&2 (260) P2	95	96	127
380-62702-4	HALAWA WELLS UNITS 1 & 2 P1	98	92	129

Surrogate Legend

2NMX = 2-Nitro-m-xylene

PRY = Perylene-d12

TPP = Triphenylphosphate

Isotope Dilution Summary

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

Job ID: 380-62702-1

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)
380-62702-1	MOANALUA WELLS	96	92	92	88	92	92	90	93
380-62702-2	AIEA GULCH WELLS PUMP 2	90	91	93	93	92	97	91	93
380-62702-3	AIEA WELLS PUMPS 1&2 (260) P2	87	89	95	94	92	92	85	83

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)
380-62702-1	MOANALUA WELLS	93	143	93	92	93	147	104	85
380-62702-2	AIEA GULCH WELLS PUMP 2	95	119	96	95	97	130	104	88
380-62702-3	AIEA WELLS PUMPS 1&2 (260) P2	92	92	92	91	92	117	95	85

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)
380-62692-F-1-A MS	Matrix Spike	97	100	95	92	93	99	96	99
380-62697-D-1-A DU	Duplicate	92	100	96	94	95	99	95	100
380-63744-A-1-A MS	Matrix Spike	86	86	92	91	90	93	85	85
380-63744-C-1-A MSD	Matrix Spike Duplicate	83	90	95	93	95	95	89	86
LCS 380-56727/24-A	Lab Control Sample	88	87	94	95	91	93	86	87
LCS 380-57619/23-A	Lab Control Sample	100	97	93	88	91	95	96	100
LCSD 380-56727/25-A	Lab Control Sample Dup	90	90	98	96	97	96	91	93
LCSD 380-57619/24-A	Lab Control Sample Dup	101	105	99	93	100	100	101	105
MBL 380-56727/22-A	Method Blank	86	94	99	101	98	102	92	89
MBL 380-57619/21-A	Method Blank	95	95	94	85	92	93	90	91
MRL 380-56727/23-A	Lab Control Sample	84	92	101	102	99	100	91	91
MRL 380-57619/22-A	Lab Control Sample	91	94	95	90	91	94	94	92

Isotope Dilution Summary

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

Job ID: 380-62702-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-62692-F-1-A MS	Matrix Spike	92	104	93	95	97	99	91	82
380-62697-D-1-A DU	Duplicate	94	104	97	100	96	104	87	87
380-63744-A-1-A MS	Matrix Spike	90	93	87	89	88	100	94	81
380-63744-C-1-A MSD	Matrix Spike Duplicate	92	93	94	94	96	104	99	83
LCS 380-56727/24-A	Lab Control Sample	90	94	90	87	89	100	91	81
LCS 380-57619/23-A	Lab Control Sample	96	103	91	94	95	94	88	82
LCSD 380-56727/25-A	Lab Control Sample Dup	94	93	91	93	93	103	98	83
LCSD 380-57619/24-A	Lab Control Sample Dup	101	110	104	103	101	97	94	88
MBL 380-56727/22-A	Method Blank	97	98	94	97	100	106	98	86
MBL 380-57619/21-A	Method Blank	96	100	98	95	96	100	95	84
MRL 380-56727/23-A	Lab Control Sample	96	94	95	99	96	112	103	90
MRL 380-57619/22-A	Lab Control Sample	94	118	98	95	96	106	91	84

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

QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: MBL 380-56727/22-A
Matrix: Water
Analysis Batch: 57472

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56727

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		09/25/23 13:30	09/29/23 20:45	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	86		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C6 PFDA	94		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C5 PFHxA	99		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C4 PFHpA	101		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C8 PFOA	98		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C9 PFNA	102		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C7 PFUnA	92		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C2 PFDoA	89		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C4 PFBA	97		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C5 PFPeA	98		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C3 PFBS	94		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C3 PFHxS	97		50 - 200	09/25/23 13:30	09/29/23 20:45	1

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QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: MBL 380-56727/22-A
Matrix: Water
Analysis Batch: 57472

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56727

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	100		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C2-4:2-FTS	106		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C2-6:2-FTS	98		50 - 200	09/25/23 13:30	09/29/23 20:45	1
13C2-8:2-FTS	86		50 - 200	09/25/23 13:30	09/29/23 20:45	1

Lab Sample ID: LCS 380-56727/24-A
Matrix: Water
Analysis Batch: 57472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56727

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	57.2		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	62.8		ng/L		104	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	57.1		ng/L		95	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	53.1		ng/L		88	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	60.6		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	59.4		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	59.4		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	58.0		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	58.2		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	58.9		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	60.1	59.2		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	59.4		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	58.4		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.1	60.2		ng/L		100	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	58.8		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	61.7		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	62.6		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	65.6		ng/L		109	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	57.7		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.1	60.7		ng/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	57.7		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	58.5		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	60.9		ng/L		101	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	60.4		ng/L		101	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: LCS 380-56727/24-A
Matrix: Water
Analysis Batch: 57472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56727

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.1	64.7		ng/L		108	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	88		50 - 200				
13C6 PFDA	87		50 - 200				
13C5 PFHxA	94		50 - 200				
13C4 PFHpA	95		50 - 200				
13C8 PFOA	91		50 - 200				
13C9 PFNA	93		50 - 200				
13C7 PFUnA	86		50 - 200				
13C2 PFDoA	87		50 - 200				
13C4 PFBA	90		50 - 200				
13C5 PFPeA	94		50 - 200				
13C3 PFBS	90		50 - 200				
13C3 PFHxS	87		50 - 200				
13C8 PFOS	89		50 - 200				
13C2-4:2-FTS	100		50 - 200				
13C2-6:2-FTS	91		50 - 200				
13C2-8:2-FTS	81		50 - 200				

Lab Sample ID: LCSD 380-56727/25-A
Matrix: Water
Analysis Batch: 57472

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 56727

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	62.7		ng/L		104	70 - 130	9	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	65.2		ng/L		108	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	60.9		ng/L		101	70 - 130	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	56.5		ng/L		94	70 - 130	6	30
Perfluorobutanesulfonic acid (PFBS)	60.1	63.8		ng/L		106	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	60.1	61.0		ng/L		101	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	60.1	58.6		ng/L		98	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	60.1	61.3		ng/L		102	70 - 130	6	30
Perfluorohexanesulfonic acid (PFHxS)	60.1	60.8		ng/L		101	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	60.1	60.2		ng/L		100	70 - 130	2	30
Perfluorononanoic acid (PFNA)	60.1	60.6		ng/L		101	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	60.1	60.8		ng/L		101	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	60.1	57.6		ng/L		96	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	60.1	60.6		ng/L		101	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	60.1	59.0		ng/L		98	70 - 130	0	30

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QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: LCSD 380-56727/25-A
Matrix: Water
Analysis Batch: 57472

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 56727

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	62.5		ng/L		104	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	64.8		ng/L		108	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	62.8		ng/L		104	70 - 130	4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	54.5		ng/L		91	70 - 130	6	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.1	64.4		ng/L		107	70 - 130	6	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	57.9		ng/L		96	70 - 130	0	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	58.2		ng/L		97	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	60.1	61.5		ng/L		102	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	60.1	61.7		ng/L		103	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	60.1	63.5		ng/L		106	70 - 130	2	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C3 HFPO-DA	90		50 - 200
13C6 PFDA	90		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	96		50 - 200
13C8 PFOA	97		50 - 200
13C9 PFNA	96		50 - 200
13C7 PFUnA	91		50 - 200
13C2 PFDoA	93		50 - 200
13C4 PFBA	94		50 - 200
13C5 PFPeA	93		50 - 200
13C3 PFBS	91		50 - 200
13C3 PFHxS	93		50 - 200
13C8 PFOS	93		50 - 200
13C2-4:2-FTS	103		50 - 200
13C2-6:2-FTS	98		50 - 200
13C2-8:2-FTS	83		50 - 200

Lab Sample ID: MRL 380-56727/23-A
Matrix: Water
Analysis Batch: 57472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56727

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.11	J	ng/L		106	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.27	J	ng/L		113	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.12	J	ng/L		106	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: MRL 380-56727/23-A
Matrix: Water
Analysis Batch: 57472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56727

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.31	J	ng/L		116	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.21	J	ng/L		111	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.42	J	ng/L		121	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.43	J	ng/L		121	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.17	J	ng/L		109	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.57	J	ng/L		128	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.38	J	ng/L		119	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.35	J	ng/L		118	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.50	J	ng/L		125	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.52	J	ng/L		126	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.20	J	ng/L		110	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.10	J	ng/L		105	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	84		50 - 200
13C6 PFDA	92		50 - 200
13C5 PFHxA	101		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	100		50 - 200
13C7 PFUnA	91		50 - 200
13C2 PFDoA	91		50 - 200
13C4 PFBA	96		50 - 200
13C5 PFPeA	94		50 - 200
13C3 PFBS	95		50 - 200
13C3 PFHxS	99		50 - 200
13C8 PFOS	96		50 - 200

QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: MRL 380-56727/23-A
Matrix: Water
Analysis Batch: 57472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56727

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MRL MRL Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	112		50 - 200
13C2-6:2-FTS	103		50 - 200
13C2-8:2-FTS	90		50 - 200

Lab Sample ID: 380-63744-A-1-A MS
Matrix: Water
Analysis Batch: 57472

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 56727

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	58.1		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	62.6		ng/L		104	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	60.6		ng/L		101	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	57.7		ng/L		96	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	64.0		ng/L		106	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	61.6		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	61.3		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	61.0		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	59.0		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	58.1		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	59.0		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	59.7		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	59.6		ng/L		99	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	59.5		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	60.2		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	60.4		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	60.4		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	63.0		ng/L		105	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	56.2		ng/L		93	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	63.0		ng/L		105	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	60.0		ng/L		100	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	57.3		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	59.1		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	62.9		ng/L		104	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	64.3		ng/L		107	70 - 130

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QC Sample Results

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

Job ID: 380-62702-1

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

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	86		50 - 200
13C6 PFDA	86		50 - 200
13C5 PFHxA	92		50 - 200
13C4 PFHpA	91		50 - 200
13C8 PFOA	90		50 - 200
13C9 PFNA	93		50 - 200
13C7 PFUnA	85		50 - 200
13C2 PFDoA	85		50 - 200
13C4 PFBA	90		50 - 200
13C5 PFPeA	93		50 - 200
13C3 PFBS	87		50 - 200
13C3 PFHxS	89		50 - 200
13C8 PFOS	88		50 - 200
13C2-4:2-FTS	100		50 - 200
13C2-6:2-FTS	94		50 - 200
13C2-8:2-FTS	81		50 - 200

Lab Sample ID: 380-63744-C-1-A MSD
Matrix: Water
Analysis Batch: 57472

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 56727

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	56.1		ng/L		93	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	61.7		ng/L		102	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	59.2		ng/L		98	70 - 130	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	58.7		ng/L		97	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	60.3		ng/L		100	70 - 130	6	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	61.0		ng/L		101	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	62.1		ng/L		103	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	60.9		ng/L		101	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	58.5		ng/L		97	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	60.6		ng/L		101	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	59.4		ng/L		99	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	58.3		ng/L		97	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	59.5		ng/L		99	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	61.4		ng/L		102	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	60.6		ng/L		101	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	59.2		ng/L		98	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	60.7		ng/L		101	70 - 130	0	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	60.5		ng/L		101	70 - 130	4	30

QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: 380-63744-C-1-A MSD
Matrix: Water
Analysis Batch: 57472

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 56727

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	55.8		ng/L		93	70 - 130	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	62.3		ng/L		103	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	60.6		ng/L		101	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	59.3		ng/L		98	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	63.3		ng/L		105	70 - 130	7	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	59.4		ng/L		99	70 - 130	6	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	62.4		ng/L		104	70 - 130	3	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	83		50 - 200
13C6 PFDA	90		50 - 200
13C5 PFHxA	95		50 - 200
13C4 PFHpA	93		50 - 200
13C8 PFOA	95		50 - 200
13C9 PFNA	95		50 - 200
13C7 PFUnA	89		50 - 200
13C2 PFDoA	86		50 - 200
13C4 PFBA	92		50 - 200
13C5 PFPeA	93		50 - 200
13C3 PFBS	94		50 - 200
13C3 PFHxS	94		50 - 200
13C8 PFOS	96		50 - 200
13C2-4:2-FTS	104		50 - 200
13C2-6:2-FTS	99		50 - 200
13C2-8:2-FTS	83		50 - 200

Lab Sample ID: MBL 380-57619/21-A
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 57619

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1

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QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: MBL 380-57619/21-A
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 57619

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluorooctanoic acid (PFOA)	0.384	J	2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		10/02/23 09:13	10/05/23 09:03	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	95		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C6 PFDA	95		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C5 PFHxA	94		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C4 PFHpA	85		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C8 PFOA	92		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C9 PFNA	93		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C7 PFUnA	90		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C2 PFDoA	91		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C4 PFBA	96		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C5 PFPeA	100		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C3 PFBS	98		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C3 PFHxS	95		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C8 PFOS	96		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C2-4:2-FTS	100		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C2-6:2-FTS	95		50 - 200	10/02/23 09:13	10/05/23 09:03	1
13C2-8:2-FTS	84		50 - 200	10/02/23 09:13	10/05/23 09:03	1

Lab Sample ID: LCS 380-57619/23-A
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 57619

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	60.0	47.3		ng/L		79	70 - 130

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QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: LCS 380-57619/23-A
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 57619

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	60.0	52.2		ng/L		87	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.0	54.2		ng/L		90	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.0	49.1		ng/L		82	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.0	55.9		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	60.0	49.7		ng/L		83	70 - 130
Perfluorododecanoic acid (PFDoA)	60.0	51.1		ng/L		85	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.0	54.7		ng/L		91	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.0	51.4		ng/L		86	70 - 130
Perfluorohexanoic acid (PFHxA)	60.0	53.6		ng/L		89	70 - 130
Perfluorononanoic acid (PFNA)	60.0	50.3		ng/L		84	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.0	50.0		ng/L		83	70 - 130
Perfluorooctanoic acid (PFOA)	60.0	51.8		ng/L		86	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.0	51.8		ng/L		86	70 - 130
Perfluorobutanoic acid (PFBA)	60.0	48.9		ng/L		82	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.0	52.1		ng/L		87	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.0	52.4		ng/L		87	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.0	51.4		ng/L		86	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.0	43.1		ng/L		72	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.0	49.5		ng/L		82	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.0	56.4		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.0	53.7		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	60.0	53.3		ng/L		89	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.0	53.2		ng/L		89	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.0	53.8		ng/L		90	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C3 HFPO-DA	100		50 - 200
13C6 PFDA	97		50 - 200
13C5 PFHxA	93		50 - 200
13C4 PFHpA	88		50 - 200
13C8 PFOA	91		50 - 200
13C9 PFNA	95		50 - 200
13C7 PFUnA	96		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	96		50 - 200

QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: LCS 380-57619/23-A
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 57619

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C5 PFPeA	103		50 - 200
13C3 PFBS	91		50 - 200
13C3 PFHxS	94		50 - 200
13C8 PFOS	95		50 - 200
13C2-4:2-FTS	94		50 - 200
13C2-6:2-FTS	88		50 - 200
13C2-8:2-FTS	82		50 - 200

Lab Sample ID: LCSD 380-57619/24-A
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 57619

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.0	47.7		ng/L		80	70 - 130	1	30	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.0	53.3		ng/L		89	70 - 130	2	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.0	55.8		ng/L		93	70 - 130	3	30	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.0	50.2		ng/L		84	70 - 130	2	30	
Perfluorobutanesulfonic acid (PFBS)	60.0	49.2		ng/L		82	70 - 130	13	30	
Perfluorodecanoic acid (PFDA)	60.0	53.6		ng/L		89	70 - 130	7	30	
Perfluorododecanoic acid (PFDoA)	60.0	51.8		ng/L		86	70 - 130	1	30	
Perfluoroheptanoic acid (PFHpA)	60.0	54.2		ng/L		90	70 - 130	1	30	
Perfluorohexanesulfonic acid (PFHxS)	60.0	50.6		ng/L		84	70 - 130	2	30	
Perfluorohexanoic acid (PFHxA)	60.0	54.2		ng/L		90	70 - 130	1	30	
Perfluorononanoic acid (PFNA)	60.0	52.2		ng/L		87	70 - 130	4	30	
Perfluorooctanesulfonic acid (PFOS)	60.0	50.8		ng/L		85	70 - 130	2	30	
Perfluorooctanoic acid (PFOA)	60.0	50.8		ng/L		85	70 - 130	2	30	
Perfluoroundecanoic acid (PFUnA)	60.0	54.6		ng/L		91	70 - 130	5	30	
Perfluorobutanoic acid (PFBA)	60.0	50.8		ng/L		85	70 - 130	4	30	
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.0	52.1		ng/L		87	70 - 130	0	30	
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.0	55.4		ng/L		92	70 - 130	5	30	
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.0	51.8		ng/L		86	70 - 130	1	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.0	56.5		ng/L		94	70 - 130	27	30	
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.0	48.2		ng/L		80	70 - 130	3	30	
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.0	57.4		ng/L		96	70 - 130	2	30	
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.0	55.8		ng/L		93	70 - 130	4	30	

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QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: LCSD 380-57619/24-A
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 57619

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropentanoic acid (PFPeA)	60.0	52.6		ng/L		88	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	60.0	55.8		ng/L		93	70 - 130	5	30
Perfluoropentanesulfonic acid (PFPeS)	60.0	54.1		ng/L		90	70 - 130	1	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C3 HFPO-DA	101		50 - 200
13C6 PFDA	105		50 - 200
13C5 PFHxA	99		50 - 200
13C4 PFHpA	93		50 - 200
13C8 PFOA	100		50 - 200
13C9 PFNA	100		50 - 200
13C7 PFUnA	101		50 - 200
13C2 PFDoA	105		50 - 200
13C4 PFBA	101		50 - 200
13C5 PFPeA	110		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	101		50 - 200
13C2-4:2-FTS	97		50 - 200
13C2-6:2-FTS	94		50 - 200
13C2-8:2-FTS	88		50 - 200

Lab Sample ID: MRL 380-57619/22-A
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 57619

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.77	J	ng/L		88	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.06	J	ng/L		103	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.99	J	ng/L		100	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.81	J	ng/L		90	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.97	J	ng/L		98	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.95	J	ng/L		98	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.94	J	ng/L		97	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.05	J	ng/L		103	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.88	J	ng/L		94	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.40	J	ng/L		120	50 - 150

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QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: MRL 380-57619/22-A
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 57619

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	2.00	1.97	J	ng/L		98	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.25	J	ng/L		113	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.00	J	ng/L		100	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	1.95	J	ng/L		98	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.09	J	ng/L		105	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.03	J	ng/L		101	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.84	J	ng/L		92	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.43	J	ng/L		121	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.90	J	ng/L		95	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.88	J	ng/L		94	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C3 HFPO-DA	91		50 - 200
13C6 PFDA	94		50 - 200
13C5 PFHxA	95		50 - 200
13C4 PFHpA	90		50 - 200
13C8 PFOA	91		50 - 200
13C9 PFNA	94		50 - 200
13C7 PFUnA	94		50 - 200
13C2 PFDoA	92		50 - 200
13C4 PFBA	94		50 - 200
13C5 PFPeA	118		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	95		50 - 200
13C8 PFOS	96		50 - 200
13C2-4:2-FTS	106		50 - 200
13C2-6:2-FTS	91		50 - 200
13C2-8:2-FTS	84		50 - 200

Lab Sample ID: 380-62692-F-1-A MS
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 57619

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	50.9		ng/L		85	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.1	55.3		ng/L		92	70 - 130

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QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: 380-62692-F-1-A MS
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 57619

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	58.8		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.1	51.2		ng/L		85	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.1	59.4		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.1	58.6		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.1	58.6		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.1	58.1		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.1	57.5		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.1	57.2		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.1	54.9		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.1	54.9		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.1	58.2		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.1	57.2		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.1	60.2		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.1	57.8		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.1	60.4		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.1	58.7		ng/L		98	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.1	47.7		ng/L		79	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.1	54.9		ng/L		91	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.1	63.9		ng/L		106	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.1	61.5		ng/L		102	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.1	59.9		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.1	57.7		ng/L		96	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.1	58.7		ng/L		98	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	97		50 - 200
13C6 PFDA	100		50 - 200
13C5 PFHxA	95		50 - 200
13C4 PFHpA	92		50 - 200
13C8 PFOA	93		50 - 200
13C9 PFNA	99		50 - 200
13C7 PFUnA	96		50 - 200
13C2 PFDoA	99		50 - 200
13C4 PFBA	92		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	93		50 - 200
13C3 PFHxS	95		50 - 200

QC Sample Results

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

Job ID: 380-62702-1

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

Lab Sample ID: 380-62692-F-1-A MS
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 57619

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C8 PFOS	97		50 - 200
13C2-4:2-FTS	99		50 - 200
13C2-6:2-FTS	91		50 - 200
13C2-8:2-FTS	82		50 - 200

Lab Sample ID: 380-62697-D-1-A DU
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 57619

<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
Nonfluoro-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: 380-62702-1

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

Lab Sample ID: 380-62697-D-1-A DU
Matrix: Water
Analysis Batch: 58048

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 57619

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Perfluoropentanesulfonic acid (PFPeS)	<2.0		<2.0		ng/L		NC	30

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
13C3 HFPO-DA	92		50 - 200
13C6 PFDA	100		50 - 200
13C5 PFHxA	96		50 - 200
13C4 PFHpA	94		50 - 200
13C8 PFOA	95		50 - 200
13C9 PFNA	99		50 - 200
13C7 PFUnA	95		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	94		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	97		50 - 200
13C3 PFHxS	100		50 - 200
13C8 PFOS	96		50 - 200
13C2-4:2-FTS	104		50 - 200
13C2-6:2-FTS	87		50 - 200
13C2-8:2-FTS	87		50 - 200



QC Association Summary

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

Job ID: 380-62702-1

GC/MS Semi VOA

Prep Batch: 55948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-62702-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	
380-62702-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	
380-62702-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	
380-62702-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	

Analysis Batch: 56105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-62702-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	55948
380-62702-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	55948
380-62702-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	55948
380-62702-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	55948

LCMS

Prep Batch: 56727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-62702-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	
MBL 380-56727/22-A	Method Blank	Total/NA	Water	533	
LCS 380-56727/24-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-56727/25-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-56727/23-A	Lab Control Sample	Total/NA	Water	533	
380-63744-A-1-A MS	Matrix Spike	Total/NA	Water	533	
380-63744-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 57472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-62702-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	56727
MBL 380-56727/22-A	Method Blank	Total/NA	Water	533	56727
LCS 380-56727/24-A	Lab Control Sample	Total/NA	Water	533	56727
LCSD 380-56727/25-A	Lab Control Sample Dup	Total/NA	Water	533	56727
MRL 380-56727/23-A	Lab Control Sample	Total/NA	Water	533	56727
380-63744-A-1-A MS	Matrix Spike	Total/NA	Water	533	56727
380-63744-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	56727

Prep Batch: 57619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-62702-1	MOANALUA WELLS	Total/NA	Drinking Water	533	
380-62702-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	
MBL 380-57619/21-A	Method Blank	Total/NA	Water	533	
LCS 380-57619/23-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-57619/24-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-57619/22-A	Lab Control Sample	Total/NA	Water	533	
380-62692-F-1-A MS	Matrix Spike	Total/NA	Water	533	
380-62697-D-1-A DU	Duplicate	Total/NA	Water	533	

Analysis Batch: 58048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-62702-1	MOANALUA WELLS	Total/NA	Drinking Water	533	57619
380-62702-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	57619
MBL 380-57619/21-A	Method Blank	Total/NA	Water	533	57619
LCS 380-57619/23-A	Lab Control Sample	Total/NA	Water	533	57619

QC Association Summary

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

Job ID: 380-62702-1

LCMS (Continued)

Analysis Batch: 58048 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 380-57619/24-A	Lab Control Sample Dup	Total/NA	Water	533	57619
MRL 380-57619/22-A	Lab Control Sample	Total/NA	Water	533	57619
380-62692-F-1-A MS	Matrix Spike	Total/NA	Water	533	57619
380-62697-D-1-A DU	Duplicate	Total/NA	Water	533	57619

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Lab Chronicle

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

Job ID: 380-62702-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-62702-1

Date Collected: 09/11/23 09:53

Matrix: Drinking Water

Date Received: 09/13/23 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			55948	N8NE	EA POM	09/17/23 23:18
Total/NA	Analysis	525.2		1	56105	Q8LA	EA POM	09/19/23 12:00
Total/NA	Prep	533			57619	T2EP	EA POM	10/02/23 09:13
Total/NA	Analysis	533		1	58048	SZ9R	EA POM	10/05/23 11:08

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-62702-2

Date Collected: 09/11/23 11:06

Matrix: Drinking Water

Date Received: 09/13/23 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			55948	N8NE	EA POM	09/17/23 23:18
Total/NA	Analysis	525.2		1	56105	Q8LA	EA POM	09/19/23 12:20
Total/NA	Prep	533			57619	T2EP	EA POM	10/02/23 09:13
Total/NA	Analysis	533		1	58048	SZ9R	EA POM	10/05/23 11:17

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

Lab Sample ID: 380-62702-3

Date Collected: 09/11/23 11:34

Matrix: Drinking Water

Date Received: 09/13/23 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			55948	N8NE	EA POM	09/17/23 23:18
Total/NA	Analysis	525.2		1	56105	Q8LA	EA POM	09/19/23 12:40
Total/NA	Prep	533			56727	XTD8	EA POM	09/23/23 10:32
Total/NA	Analysis	533		1	57472	SZ9R	EA POM	09/29/23 22:21

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-62702-4

Date Collected: 09/11/23 10:31

Matrix: Drinking Water

Date Received: 09/13/23 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			55948	N8NE	EA POM	09/17/23 23:18
Total/NA	Analysis	525.2		1	56105	Q8LA	EA POM	09/19/23 13:00

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: 380-62702-1

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: 380-62702-1

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)

Method Summary

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

Job ID: 380-62702-1

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
525.2	Extraction of Semivolatile Compounds	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated 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: 380-62702-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-62702-1	MOANALUA WELLS	Drinking Water	09/11/23 09:53	09/13/23 10:50	HI0000331
380-62702-2	AIEA GULCH WELLS PUMP 2	Drinking Water	09/11/23 11:06	09/13/23 10:50	HI0000331
380-62702-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	09/11/23 11:34	09/13/23 10:50	HI0000331
380-62702-4	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	09/11/23 10:31	09/13/23 10:50	HI0000331

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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

eurofins

Environmental Testing
 America

Client Information Client Contact: Dr. Ron Fenstermacher Company: City & County of Honolulu Address: 630 South Beretania Street, Chemistry Lab City: Honolulu State Zip: HI, 96843 Phone: 808-748-5091 (tel) Email: rfenstermacher@hbws.org Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill Site:		Lab PM: Arada, Rachelle E-Mail: Rachelle.Arada@et.euronisus.com PWSID:		Carrier Tracking No(s): 380-27941-2757 2 State of Origin:		COC No: 380-27941-2757 2 Page: Page 1 of 2 Job #:	
Due Date Requested:		Analysis Requested:		Total Number of Containers:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
TAT Requested (days):		SUBCONTRACT - 8015 Gas (Purgable) LL (EAL) SUBCONTRACT - 8015 Gas (Purgable) LL (EAL) + TICs SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil SUBCONTRACT - (MOD) 525plus PLUS TICs SUBCONTRACT - 8015 Gas (Purgable) LL (EAL) SUBCONTRACT - 8015 Gas (Purgable) LL (EAL) SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil SUBCONTRACT - (MOD) 525plus PLUS TICs SUBCONTRACT - 8015 Gas (Purgable) LL (EAL) SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)		537 1_DW_PREC - 537 1 Full List 533 - All Analytes		Special Instructions/Note: ① 7733 9021 1026 ② 6" 02"-04" ③ 7733 9021 1037 32" 02"-30" ④ 7733 9021 1048 36" 02"-34" ⑤ 7733 9021 1059 27" 02"-25" ⑥ 7733 9021 1060 33" 02"-31"	
Compliance Project:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Matrix (W=water, S=solid, O=soil, BT=Tissue, A=Air)	
PO #: C20525101 exp 05312023 WO #:		Sample Type (C=comp, G=grab)		Preservation Code		Sample Date	
Project #: 38001111 SSOW#:		Sample Time		Matrix		Sample Date	
MOANALUA WELLS		11-Sep-2023 0953 G		Water		11-Sep-2023 0953 G	
AIEA GULCH WELLS PUMP2		11-Sep-2023 1106 G		Water		11-Sep-2023 1106 G	
AIEA WELLS PUMPS 1&2 (260) P2		11-Sep-2023 1134 G		Water		11-Sep-2023 1134 G	
HALAWA WELLS UNITS 1&2 P1		11-Sep-2023 1031 G		Water		11-Sep-2023 1031 G	
TB MOANALUA WELLS		11-Sep-2023 0953		Water		11-Sep-2023 0953	
TB AIEA GULCH WELLS PUMP2		11-Sep-2023 1106		Water		11-Sep-2023 1106	
TB AIEA WELLS PUMPS 1&2 (260)		11-Sep-2023 1134		Water		11-Sep-2023 1134	
TB HALAWA WELLS UNITS 1&2		11-Sep-2023 1031		Water		11-Sep-2023 1031	
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		380-62702 COC		Special Instructions/Note:	
Deliverable Requested I, II, III, IV, Other (specify)		Empty Kit Relinquished by: BAILEY		Date: 12/15/2023		Method of Shipment: FEDEX 5 COOLERS 9	
Relinquished by: BAILEY		Date/Time: 09/13/2023 10:50		Company: ECAF		Date/Time:	
Relinquished by:		Date/Time:		Company:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Date/Time:	
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temperature(s) °C and Other Remarks: (751A) - 02-CORRECTION (751A) - 02-CORRECTION		Cooler Temperature(s) °C and Other Remarks:		Cooler Temperature(s) °C and Other Remarks:	



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



Environmental Testing
 Ca

Chain of Custody Record

Client Information Client Contact: Dr. Ron Fenstermacher Company: City & County of Honolulu		Lab PM: Arada, Rachelle E-Mail: Rachelle.Arada@et.euronisus.com		Carrier Tracking No(s): 380-27941-2757 2 Page: Page 2 of 2 Job #:	
Address: 630 South Beretania Street, Chemistry Lab City: Honolulu State/Zip: HI, 96843 Phone: 808-748-5091 (tel) Email: rfenstermacher@hbws.org		Due Date Requested: TAT Requested (days) Compliance Project: Δ No PO #: C20525101 exp 05312023 WO #:		Analysis Requested SUBCONTRACT - 825 PAH Physis LL (EAL) + TICs SUBCONTRACT - 8015 Gas (Purgable) LL (EAL) SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil SUBCONTRACT - (MOD) 525plus PLUS TICs SUBCONTRACT - 8015 Gas (Purgable) LL (EAL) SUBCONTRACT - 8015 Gas (Purgable) LL (EAL) SUBCONTRACT - 8015 Gas (Purgable) LL (EAL) 537 1_DW_PREC - 537 1 Full List 533 - All Analytes	
Project Name: RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill Site:		PWSID Perform MS/MSD (Yes or No)		Total Number of containers	
Sample Identification MOANALUA WELLS AIEA GULCH WELLS PUMP2 AIEA WELLS PUMPS 1&2 (260) P2 HALAWA WELLS UNITS 1&2 P1 FB MOANALUA WELLS FB AIEA GULCH WELLS PUMP2 FB AIEA WELLS PUMPS 1&2 (260) FB HALAWA WELLS UNITS 1&2		Sample Date 11-Sep-2023 11-Sep-2023 11-Sep-2023 11-Sep-2023 11-Sep-2023 11-Sep-2023 11-Sep-2023 11-Sep-2023		Sample Time 0953 1106 134 1031 0953 1106 134 1031	
Sample Type (C=comp, G=grab) Preservation Code Matrix (W=water, S=solid, O=soil, B=BT-tissue, A=Air)		Field Filtered Sample (Yes or No)		Special Instructions/Note: ① 7733 9021 1026 06 02°=04° ② 7733 9021 1037 32° 02°-30° ③ 7733 9021 1048 3.2° 02° 3.4° ④ 7733 9021 1059 27°-02° 25° ⑤ 7733 9021 1060 33 -02-31°	
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					
Deliverable Requested I, II, III, IV, Other (specify)					
Empty Kit Relinquished by					
Relinquished by: BAILEY Date/Time: 09/13/2023 10:50 Company: HBWS		Received by: [Signature] Date/Time: 09/13/2023 10:50 Company: HBWS		Method of Shipment: FEDEX 5 COOLER-IT Date/Time: 09/13/2023 10:50 Company: HBWS	
Relinquished by: BAILEY Date/Time:		Received by: [Signature] Date/Time:		Method of Shipment:	
Relinquished by:		Received by:		Method of Shipment:	
Custody Seals Intact. Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks: (FSTA) -02° CORRECTED FROZEN		Ver 01/16/2019	



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-62702-1

Login Number: 62702
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.	False	One 8015 vial from one site arrived broken. Refer to NCM for details.
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	