

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
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JOB DESCRIPTION

RED-HILL
525.2, 533, 537.1
RUSH Weekly Red Hill

JOB NUMBER

380-87965-1

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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Authorized for release by
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Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Action Limit Summary	16
Surrogate Summary	17
Isotope Dilution Summary	18
QC Sample Results	19
QC Association Summary	47
Lab Chronicle	49
Certification Summary	51
Method Summary	53
Sample Summary	54
Chain of Custody	55
Receipt Checklists	57

Definitions/Glossary

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

Qualifiers

GC/MS Semi VOA

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

GC/MS Semi VOA TICs

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

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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: RED-HILL

Job ID: 380-87965-1

Job ID: 380-87965-1

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Job Narrative 380-87965-1

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

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

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

Receipt

The samples were received on 3/20/2024 10:55 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.3°C and 1.9°C.

Receipt Exceptions

The following samples were received with ice present in the containers. The samples and containers appeared to be intact. 1 of 3 533 bottles received with ice in sample.

GC/MS Semi VOA

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

PFAS

Method 533: The method blank associated with preparation batch 380-83337 and analytical batch 380-83485 contained Perfluoroheptanoic acid (PFHpA), Perfluorohexanoic acid (PFHxA), Perfluorooctanoic acid (PFOA), Perfluorobutanoic acid (PFBA) and Perfluoropentanoic acid (PFPeA) greater than one-third the method reporting limit (RL). Affected analytes also detected greater than 1/3 MRL in FB:AIEA GULCH WELLS P2 (331-202-TP072) (380-87965-7) and FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-87965-8). FRBs could not be re-extracted because of insufficient volume. The sample results have been qualified and reported. Associated native sample is ND for all target analytes, therefore FRB is not needed. HALAWA WELLS UNITS 1&2 P1 (380-88924-4). Field Blank data excluded due to this QC failure.

Method 533: The MRL check for preparation batch 380-83337 and analytical batch 380-83485 recovered outside control limits for the following analytes: Perfluoropentanoic acid (PFPeA). These analytes were biased high in the MRL check. Sample FB:AIEA GULCH WELLS P2 (331-202-TP072) (380-87965-7) and FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-87965-8) does not have volume available for re-extraction. Associated native sample is ND for all target analytes, therefore FRB is not needed. Field Blank 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.

Euofins Eaton Analytical Pomona

Detection Summary

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-1

No Detections.

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

Lab Sample ID: 380-87965-2

No Detections.

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

Lab Sample ID: 380-87965-5

No Detections.

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

Lab Sample ID: 380-87965-6

No Detections.

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

Lab Sample ID: 380-87965-7

No Detections.

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

Lab Sample ID: 380-87965-8

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona



Client Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-1

Date Collected: 03/18/24 10:25

Matrix: Drinking Water

Date Received: 03/20/24 10:55

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		03/22/24 11:08	03/24/24 10:52	1
2,4'-DDD	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
2,4'-DDE	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
2,4'-DDT	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
2,4 Dinitrotoluene	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
2-Methylnaphthalene	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
4,4'-DDD	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
4,4'-DDE	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
4,4'-DDT	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Acenaphthene	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Acenaphthylene	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Acetochlor	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Alachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
alpha-BHC	<0.098	^3+	0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
alpha-Chlordane	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Anthracene	<0.020		0.020	ug/L		03/22/24 11:08	03/24/24 10:52	1
Atrazine	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Benz(a)anthracene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Benzo[a]pyrene	<0.020		0.020	ug/L		03/22/24 11:08	03/24/24 10:52	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		03/22/24 11:08	03/24/24 10:52	1
Benzo[g,h,i]perylene	<0.049	F1 *+ ^+	0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		03/22/24 11:08	03/24/24 10:52	1
beta-BHC	<0.098	^3+	0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		03/22/24 11:08	03/24/24 10:52	1
Bromacil	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Butachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Butylbenzylphthalate	<0.49		0.49	ug/L		03/22/24 11:08	03/24/24 10:52	1
Chlorobenzilate	<0.098	F1 *+	0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Chloroneb	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Chlorpyrifos	<0.049	F1 *+	0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Chrysene	<0.020		0.020	ug/L		03/22/24 11:08	03/24/24 10:52	1
delta-BHC	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		03/22/24 11:08	03/24/24 10:52	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Dieldrin	<0.20		0.20	ug/L		03/22/24 11:08	03/24/24 10:52	1
Diethylphthalate	<0.49		0.49	ug/L		03/22/24 11:08	03/24/24 10:52	1
Dimethylphthalate	<0.49		0.49	ug/L		03/22/24 11:08	03/24/24 10:52	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		03/22/24 11:08	03/24/24 10:52	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Endosulfan sulfate	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Endrin	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Endrin aldehyde	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
EPTC	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1

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Client Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-1

Date Collected: 03/18/24 10:25

Matrix: Drinking Water

Date Received: 03/20/24 10:55

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Fluorene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
gamma-Chlordane	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Heptachlor	<0.039	^3+	0.039	ug/L		03/22/24 11:08	03/24/24 10:52	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Hexachlorobenzene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Isophorone	<0.49		0.49	ug/L		03/22/24 11:08	03/24/24 10:52	1
Lindane	<0.039		0.039	ug/L		03/22/24 11:08	03/24/24 10:52	1
Malathion	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Methoxychlor	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Metolachlor	<0.049	^3+	0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Molinate	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Naphthalene	<0.29		0.29	ug/L		03/22/24 11:08	03/24/24 10:52	1
Parathion	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Phenanthrene	<0.039		0.039	ug/L		03/22/24 11:08	03/24/24 10:52	1
Propachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Pyrene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Simazine	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Terbacil	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Terbutylazine	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1
Thiobencarb	<0.20		0.20	ug/L		03/22/24 11:08	03/24/24 10:52	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		03/22/24 11:08	03/24/24 10:52	1
trans-Nonachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:52	1
Trifluralin	<0.098		0.098	ug/L		03/22/24 11:08	03/24/24 10:52	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	03/22/24 11:08	03/24/24 10:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	03/22/24 11:08	03/24/24 10:52	1
Perylene-d12	102		70 - 130	03/22/24 11:08	03/24/24 10:52	1
Triphenylphosphate	118		70 - 130	03/22/24 11:08	03/24/24 10:52	1

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

Lab Sample ID: 380-87965-2

Date Collected: 03/18/24 10:45

Matrix: Drinking Water

Date Received: 03/20/24 10:55

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
2,4'-DDD	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
2,4'-DDE	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
2,4'-DDT	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
2,4-Dinitrotoluene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
2,6-Dinitrotoluene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-2

Date Collected: 03/18/24 10:45

Matrix: Drinking Water

Date Received: 03/20/24 10:55

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
4,4'-DDD	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
4,4'-DDE	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
4,4'-DDT	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Acenaphthene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Acenaphthylene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Acetochlor	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Alachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
alpha-BHC	<0.097	^3+	0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
alpha-Chlordane	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Anthracene	<0.019		0.019	ug/L		03/22/24 11:08	03/24/24 12:32	1
Atrazine	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Benz(a)anthracene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Benzo[a]pyrene	<0.019		0.019	ug/L		03/22/24 11:08	03/24/24 12:32	1
Benzo[b]fluoranthene	<0.019		0.019	ug/L		03/22/24 11:08	03/24/24 12:32	1
Benzo[g,h,i]perylene	<0.049	*+ ^+	0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Benzo[k]fluoranthene	<0.019		0.019	ug/L		03/22/24 11:08	03/24/24 12:32	1
beta-BHC	<0.097	^3+	0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58	ug/L		03/22/24 11:08	03/24/24 12:32	1
Bromacil	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Butachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Butylbenzylphthalate	<0.49		0.49	ug/L		03/22/24 11:08	03/24/24 12:32	1
Chlorobenzilate	<0.097	*+	0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Chloroneb	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Chlorpyrifos	<0.049	*+	0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Chrysene	<0.019		0.019	ug/L		03/22/24 11:08	03/24/24 12:32	1
delta-BHC	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Di(2-ethylhexyl)adipate	<0.58		0.58	ug/L		03/22/24 11:08	03/24/24 12:32	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Dieldrin	<0.19		0.19	ug/L		03/22/24 11:08	03/24/24 12:32	1
Diethylphthalate	<0.49		0.49	ug/L		03/22/24 11:08	03/24/24 12:32	1
Dimethylphthalate	<0.49		0.49	ug/L		03/22/24 11:08	03/24/24 12:32	1
Di-n-butyl phthalate	<0.97		0.97	ug/L		03/22/24 11:08	03/24/24 12:32	1
Di-n-octyl phthalate	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Endosulfan I (Alpha)	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Endosulfan II (Beta)	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Endosulfan sulfate	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Endrin	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Endrin aldehyde	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
EPTC	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Fluoranthene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Fluorene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
gamma-Chlordane	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Heptachlor	<0.039	^3+	0.039	ug/L		03/22/24 11:08	03/24/24 12:32	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Hexachlorobenzene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-2

Date Collected: 03/18/24 10:45

Matrix: Drinking Water

Date Received: 03/20/24 10:55

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Isophorone	<0.49		0.49	ug/L		03/22/24 11:08	03/24/24 12:32	1
Lindane	<0.039		0.039	ug/L		03/22/24 11:08	03/24/24 12:32	1
Malathion	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Methoxychlor	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Metolachlor	<0.049	^3+	0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Molinate	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Naphthalene	<0.29		0.29	ug/L		03/22/24 11:08	03/24/24 12:32	1
Parathion	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Pendimethalin (Penoxaline)	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Phenanthrene	<0.039		0.039	ug/L		03/22/24 11:08	03/24/24 12:32	1
Propachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Pyrene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Simazine	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Terbacil	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Terbutylazine	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1
Thiobencarb	<0.19		0.19	ug/L		03/22/24 11:08	03/24/24 12:32	1
Total Permethrin (mixed isomers)	<0.19		0.19	ug/L		03/22/24 11:08	03/24/24 12:32	1
trans-Nonachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 12:32	1
Trifluralin	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 12:32	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	03/22/24 11:08	03/24/24 12:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	97		70 - 130	03/22/24 11:08	03/24/24 12:32	1
Perylene-d12	105		70 - 130	03/22/24 11:08	03/24/24 12:32	1
Triphenylphosphate	112		70 - 130	03/22/24 11:08	03/24/24 12:32	1

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

Lab Sample ID: 380-87965-5

Date Collected: 03/18/24 10:25

Matrix: Water

Date Received: 03/20/24 10:55

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-5

Date Collected: 03/18/24 10:25

Matrix: Water

Date Received: 03/20/24 10:55

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
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		03/26/24 04:28	03/27/24 11:58	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	67		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C6 PFDA	52		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C5 PFHxA	69		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C4 PFHpA	71		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C8 PFOA	65		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C9 PFNA	53		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C7 PFUnA	53		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C2 PFDoA	57		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C4 PFBA	79		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C5 PFPeA	80		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C3 PFBS	96		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C3 PFHxS	100		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C8 PFOS	97		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C2-4:2-FTS	131		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C2-6:2-FTS	169		50 - 200			03/26/24 04:28	03/27/24 11:58	1
13C2-8:2-FTS	114		50 - 200			03/26/24 04:28	03/27/24 11:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-5

Date Collected: 03/18/24 10:25

Matrix: Water

Date Received: 03/20/24 10:55

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	104		70 - 130			03/21/24 11:19	03/22/24 19:13	1
13C2 PFHxA	105		70 - 130			03/21/24 11:19	03/22/24 19:13	1
13C2 PFDA	99		70 - 130			03/21/24 11:19	03/22/24 19:13	1
13C3-GenX	95		70 - 130			03/21/24 11:19	03/22/24 19:13	1

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

Lab Sample ID: 380-87965-6

Date Collected: 03/18/24 10:45

Matrix: Water

Date Received: 03/20/24 10:55

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-6

Date Collected: 03/18/24 10:45

Matrix: Water

Date Received: 03/20/24 10:55

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-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		03/29/24 07:51	04/01/24 19:48	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	64		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C6 PFDA	69		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C5 PFHxA	79		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C4 PFHpA	81		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C8 PFOA	81		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C9 PFNA	75		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C7 PFUnA	75		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C2 PFDoA	77		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C4 PFBA	86		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C5 PFPeA	88		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C3 PFBS	94		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C3 PFHxS	98		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C8 PFOS	97		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C2-4:2-FTS	123		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C2-6:2-FTS	126		50 - 200	03/29/24 07:51	04/01/24 19:48	1
13C2-8:2-FTS	93		50 - 200	03/29/24 07:51	04/01/24 19:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1

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Client Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-6

Date Collected: 03/18/24 10:45

Matrix: Water

Date Received: 03/20/24 10:55

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	107		70 - 130			03/21/24 11:19	03/22/24 19:23	1
13C2 PFHxA	115		70 - 130			03/21/24 11:19	03/22/24 19:23	1
13C2 PFDA	111		70 - 130			03/21/24 11:19	03/22/24 19:23	1
13C3-GenX	104		70 - 130			03/21/24 11:19	03/22/24 19:23	1

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

Lab Sample ID: 380-87965-7

Date Collected: 03/18/24 10:25

Matrix: Water

Date Received: 03/20/24 10:55

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:32	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-7

Date Collected: 03/18/24 10:25

Matrix: Water

Date Received: 03/20/24 10:55

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	99		70 - 130	03/21/24 11:19	03/22/24 19:32	1
13C2 PFHxA	101		70 - 130	03/21/24 11:19	03/22/24 19:32	1
13C2 PFDA	102		70 - 130	03/21/24 11:19	03/22/24 19:32	1
13C3-GenX	96		70 - 130	03/21/24 11:19	03/22/24 19:32	1

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

Lab Sample ID: 380-87965-8

Date Collected: 03/18/24 10:45

Matrix: Water

Date Received: 03/20/24 10:55

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		03/21/24 11:19	03/22/24 19:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130	03/21/24 11:19	03/22/24 19:42	1
13C2 PFHxA	109		70 - 130	03/21/24 11:19	03/22/24 19:42	1
13C2 PFDA	110		70 - 130	03/21/24 11:19	03/22/24 19:42	1
13C3-GenX	101		70 - 130	03/21/24 11:19	03/22/24 19:42	1

Action Limit Summary

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-1

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	^3+	ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40	0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

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

Lab Sample ID: 380-87965-2

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	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039	^3+	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	<0.097		ug/L	40	0.097	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: 380-87965-1
SDG: 525.2, 533, 537.1

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-87965-1	AIEA GULCH WELLS PUMP 2 (98	102	118
380-87965-1 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	96	102	116
380-87965-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	97	105	112

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-88002-I-1-A DU	Duplicate	95	97	113
LCS 380-82677/23-A	Lab Control Sample	96	103	114
LCSD 380-82677/24-A	Lab Control Sample Dup	95	103	113
MB 380-82677/21-A	Method Blank	94	100	117
MRL 380-82677/22-A	Lab Control Sample	94	104	112

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-87965-5	AIEA GULCH WELLS PUMP 2 (104	105	99	95
380-87965-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	107	115	111	104
380-87965-7	FB:AIEA GULCH WELLS P2 (331-202-TP072)	99	101	102	96
380-87965-8	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	109	109	110	101
380-87670-AH-1-A MS	Matrix Spike	110	115	111	111
380-87670-AJ-1-A MSD	Matrix Spike Duplicate	104	113	110	107
LCS 380-82576/23-A	Lab Control Sample	105	112	110	108
MBL 380-82576/21-A	Method Blank	113	115	113	104
MRL 380-82576/22-A	Lab Control Sample	108	114	113	109

Surrogate Legend

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

Isotope Dilution Summary

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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)
380-87955-E-1-A MS	Matrix Spike	49 *5-	46 *5-	53	53	46 *5-	44 *5-	52	52
380-87955-F-1-A MSD	Matrix Spike Duplicate	70	65	74	75	65	62	67	74
380-87965-5	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	67	52	69	71	65	53	53	57
380-87965-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	64	69	79	81	81	75	75	77
380-88483-B-1-B LMS	Matrix Spike	74	88	91	97	96	92	88	93
380-88483-C-1-B LMSD	Matrix Spike Duplicate	76	89	91	94	98	91	86	90
LCS 380-83206/21-A	Lab Control Sample	77	87	93	94	92	88	88	86
LCS 380-83699/23-A	Lab Control Sample	75	84	84	88	92	91	82	88
MBL 380-83206/19-A	Method Blank	81	91	98	106	101	90	88	89
MBL 380-83699/21-A	Method Blank	72	82	85	91	89	86	83	82
MRL 380-83206/20-A	Lab Control Sample	85	91	97	104	101	94	89	91
MRL 380-83699/22-A	Lab Control Sample	69	82	88	91	92	82	83	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)
380-87955-E-1-A MS	Matrix Spike	52	52	95	99	91	114	107	95
380-87955-F-1-A MSD	Matrix Spike Duplicate	75	77	101	107	101	120	113	105
380-87965-5	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	79	80	96	100	97	131	169	114
380-87965-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	86	88	94	98	97	123	126	93
380-88483-B-1-B LMS	Matrix Spike	98	99	97	100	97	122	117	102
380-88483-C-1-B LMSD	Matrix Spike Duplicate	97	106	93	99	96	118	117	96
LCS 380-83206/21-A	Lab Control Sample	90	98	98	101	95	115	120	100
LCS 380-83699/23-A	Lab Control Sample	94	94	94	101	95	111	115	96
MBL 380-83206/19-A	Method Blank	100	99	98	99	95	119	120	97
MBL 380-83699/21-A	Method Blank	92	92	85	92	87	114	109	86
MRL 380-83206/20-A	Lab Control Sample	97	96	104	105	100	118	124	103
MRL 380-83699/22-A	Lab Control Sample	93	93	88	96	92	122	119	92

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: 380-87965-1
 SDG: 525.2, 533, 537.1

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

Lab Sample ID: MB 380-82677/21-A
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82677

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1-Methylnaphthalene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
2,4'-DDD	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
2,4'-DDE	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
2,4'-DDT	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
2,4-Dinitrotoluene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
2,6-Dinitrotoluene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
2-Methylnaphthalene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
4,4'-DDD	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
4,4'-DDE	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
4,4'-DDT	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Acenaphthene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Acenaphthylene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Acetochlor	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Alachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
alpha-BHC	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
alpha-Chlordane	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Anthracene	<0.019		0.019	ug/L		03/22/24 11:08	03/24/24 10:32	1
Atrazine	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Benz(a)anthracene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Benzo[a]pyrene	<0.019		0.019	ug/L		03/22/24 11:08	03/24/24 10:32	1
Benzo[b]fluoranthene	<0.019		0.019	ug/L		03/22/24 11:08	03/24/24 10:32	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Benzo[k]fluoranthene	<0.019		0.019	ug/L		03/22/24 11:08	03/24/24 10:32	1
beta-BHC	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58	ug/L		03/22/24 11:08	03/24/24 10:32	1
Bromacil	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Butachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Butylbenzylphthalate	<0.49		0.49	ug/L		03/22/24 11:08	03/24/24 10:32	1
Chlorobenzilate	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Chloroneb	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Chlorpyrifos	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Chrysene	<0.019		0.019	ug/L		03/22/24 11:08	03/24/24 10:32	1
delta-BHC	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Di(2-ethylhexyl)adipate	<0.58		0.58	ug/L		03/22/24 11:08	03/24/24 10:32	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Dieldrin	<0.19		0.19	ug/L		03/22/24 11:08	03/24/24 10:32	1
Diethylphthalate	<0.49		0.49	ug/L		03/22/24 11:08	03/24/24 10:32	1
Dimethylphthalate	<0.49		0.49	ug/L		03/22/24 11:08	03/24/24 10:32	1
Di-n-butyl phthalate	<0.97		0.97	ug/L		03/22/24 11:08	03/24/24 10:32	1
Di-n-octyl phthalate	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Endosulfan I (Alpha)	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Endosulfan II (Beta)	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Endosulfan sulfate	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Endrin	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Endrin aldehyde	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
EPTC	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MB 380-82677/21-A
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82677

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Fluorene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
gamma-Chlordane	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Heptachlor	<0.039		0.039	ug/L		03/22/24 11:08	03/24/24 10:32	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Hexachlorobenzene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Isophorone	<0.49		0.49	ug/L		03/22/24 11:08	03/24/24 10:32	1
Lindane	<0.039		0.039	ug/L		03/22/24 11:08	03/24/24 10:32	1
Malathion	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Methoxychlor	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Metolachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Molinate	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Naphthalene	<0.29		0.29	ug/L		03/22/24 11:08	03/24/24 10:32	1
Parathion	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Pendimethalin (Penoxaline)	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Phenanthrene	<0.039		0.039	ug/L		03/22/24 11:08	03/24/24 10:32	1
Propachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Pyrene	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Simazine	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Terbacil	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Terbutylazine	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1
Thiobencarb	<0.19		0.19	ug/L		03/22/24 11:08	03/24/24 10:32	1
Total Permethrin (mixed isomers)	<0.19		0.19	ug/L		03/22/24 11:08	03/24/24 10:32	1
trans-Nonachlor	<0.049		0.049	ug/L		03/22/24 11:08	03/24/24 10:32	1
Trifluralin	<0.097		0.097	ug/L		03/22/24 11:08	03/24/24 10:32	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
1,3,5,7,9-Pentaethylcyclopentasiloxane	0.555	T J N	ug/L		3.02	17995-44-7	03/22/24 11:08	03/24/24 10:32	1
Phenol, 2,4-bis(1,1-dimethylethyl)-	0.496	T J N	ug/L		3.97	96-76-4	03/22/24 11:08	03/24/24 10:32	1
9-Octadecenamide, (Z)-	0.663	T J N	ug/L		7.09	301-02-0	03/22/24 11:08	03/24/24 10:32	1
13-Docosenamide, (Z)-	0.667	T J N	ug/L		9.52	112-84-5	03/22/24 11:08	03/24/24 10:32	1
Unknown	0.509	T J	ug/L		15.53	N/A	03/22/24 11:08	03/24/24 10:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	94		70 - 130	03/22/24 11:08	03/24/24 10:32	1
Perylene-d12	100		70 - 130	03/22/24 11:08	03/24/24 10:32	1
Triphenylphosphate	117		70 - 130	03/22/24 11:08	03/24/24 10:32	1

Lab Sample ID: LCS 380-82677/23-A
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.95	1.81		ug/L		93	70 - 130
2,4'-DDD	1.95	2.21		ug/L		114	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCS 380-82677/23-A
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDE	1.95	2.15		ug/L		110	70 - 130
2,4'-DDT	1.95	2.07		ug/L		106	70 - 130
2,4-Dinitrotoluene	1.95	2.08		ug/L		107	70 - 130
2,6-Dinitrotoluene	1.95	1.83		ug/L		94	70 - 130
2-Methylnaphthalene	1.95	1.99		ug/L		102	70 - 130
4,4'-DDD	1.95	2.04		ug/L		105	70 - 130
4,4'-DDE	1.95	1.97		ug/L		101	70 - 130
4,4'-DDT	1.95	1.95		ug/L		100	70 - 130
Acenaphthene	1.95	1.77		ug/L		91	70 - 130
Acenaphthylene	1.95	1.84		ug/L		94	70 - 130
Acetochlor	1.95	2.27		ug/L		116	70 - 130
Alachlor	1.95	2.03		ug/L		104	70 - 130
alpha-BHC	1.95	2.18		ug/L		112	70 - 130
alpha-Chlordane	1.95	2.21		ug/L		113	70 - 130
Anthracene	1.95	1.59		ug/L		82	70 - 130
Atrazine	1.95	2.14		ug/L		110	70 - 130
Benz(a)anthracene	1.95	1.86		ug/L		96	70 - 130
Benzo[a]pyrene	1.95	1.80		ug/L		93	70 - 130
Benzo[b]fluoranthene	1.95	2.11		ug/L		108	70 - 130
Benzo[g,h,i]perylene	1.95	2.84	*+	ug/L		146	70 - 130
Benzo[k]fluoranthene	1.95	2.00		ug/L		103	70 - 130
beta-BHC	1.95	2.28		ug/L		117	70 - 130
Bis(2-ethylhexyl) phthalate	1.95	1.88		ug/L		97	70 - 130
Bromacil	1.95	2.05		ug/L		105	70 - 130
Butachlor	1.95	2.17		ug/L		111	70 - 130
Butylbenzylphthalate	1.95	2.16		ug/L		111	70 - 130
Chlorobenzilate	1.95	2.55	*+	ug/L		131	70 - 130
Chloroneb	1.95	2.24		ug/L		115	70 - 130
Chlorothalonil (Draconil, Bravo)	1.95	2.20		ug/L		113	70 - 130
Chlorpyrifos	1.95	2.52		ug/L		129	70 - 130
Chrysene	1.95	1.95		ug/L		100	70 - 130
delta-BHC	1.95	2.13		ug/L		109	70 - 130
Di(2-ethylhexyl)adipate	1.95	2.06		ug/L		106	70 - 130
Dibenz(a,h)anthracene	1.95	2.05		ug/L		105	70 - 130
Diclorvos (DDVP)	1.95	2.44		ug/L		125	70 - 130
Dieldrin	1.95	2.25		ug/L		116	70 - 130
Diethylphthalate	1.95	2.27		ug/L		117	70 - 130
Dimethylphthalate	1.95	2.12		ug/L		109	70 - 130
Di-n-butyl phthalate	3.90	4.51		ug/L		116	70 - 130
Di-n-octyl phthalate	1.95	1.89		ug/L		97	70 - 130
Endosulfan I (Alpha)	1.95	2.18		ug/L		112	70 - 130
Endosulfan II (Beta)	1.95	2.32		ug/L		119	70 - 130
Endosulfan sulfate	1.95	2.32		ug/L		119	70 - 130
Endrin	1.95	2.35		ug/L		121	70 - 130
Endrin aldehyde	1.95	1.95		ug/L		100	60 - 130
EPTC	1.95	2.03		ug/L		104	70 - 130
Fluoranthene	1.95	2.12		ug/L		109	70 - 130
Fluorene	1.95	1.96		ug/L		101	70 - 130
gamma-Chlordane	1.95	2.14		ug/L		110	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCS 380-82677/23-A
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Heptachlor	1.95	2.34		ug/L		120	70 - 130
Heptachlor epoxide (isomer B)	1.95	2.14		ug/L		110	70 - 130
Hexachlorobenzene	1.95	2.17		ug/L		111	70 - 130
Hexachlorocyclopentadiene	1.95	2.24		ug/L		115	70 - 130
Indeno[1,2,3-cd]pyrene	1.95	2.08		ug/L		107	70 - 130
Isophorone	1.95	1.96		ug/L		101	70 - 130
Lindane	1.95	2.28		ug/L		117	70 - 130
Malathion	1.95	1.97		ug/L		101	70 - 130
Methoxychlor	1.95	2.04		ug/L		105	70 - 130
Metolachlor	1.95	2.11		ug/L		108	70 - 130
Molinate	1.95	2.13		ug/L		109	70 - 130
Naphthalene	1.95	1.77		ug/L		91	70 - 130
Parathion	1.95	2.27		ug/L		117	70 - 130
Pendimethalin (Penoxaline)	1.95	1.94		ug/L		99	70 - 130
Phenanthrene	1.95	1.86		ug/L		96	70 - 130
Propachlor	1.95	2.29		ug/L		118	70 - 130
Pyrene	1.95	2.06		ug/L		106	70 - 130
Simazine	1.95	2.06		ug/L		106	70 - 130
Terbacil	1.95	2.27		ug/L		117	70 - 130
Terbutylazine	1.95	2.21		ug/L		114	70 - 130
Thiobencarb	1.95	2.13		ug/L		109	70 - 130
trans-Nonachlor	1.95	2.25		ug/L		115	70 - 130
Trifluralin	1.95	2.26		ug/L		116	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	96		70 - 130
Perylene-d12	103		70 - 130
Triphenylphosphate	114		70 - 130

Lab Sample ID: LCSD 380-82677/24-A
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.95	1.80		ug/L		92	70 - 130	0	20
2,4'-DDD	1.95	2.23		ug/L		114	70 - 130	1	20
2,4'-DDE	1.95	2.16		ug/L		111	70 - 130	0	20
2,4'-DDT	1.95	2.10		ug/L		108	70 - 130	1	20
2,4-Dinitrotoluene	1.95	1.98		ug/L		102	70 - 130	5	20
2,6-Dinitrotoluene	1.95	1.80		ug/L		93	70 - 130	2	20
2-Methylnaphthalene	1.95	1.99		ug/L		102	70 - 130	0	20
4,4'-DDD	1.95	2.06		ug/L		106	70 - 130	1	20
4,4'-DDE	1.95	2.01		ug/L		103	70 - 130	2	20
4,4'-DDT	1.95	2.00		ug/L		103	70 - 130	3	20
Acenaphthene	1.95	1.73		ug/L		89	70 - 130	2	20
Acenaphthylene	1.95	1.82		ug/L		93	70 - 130	1	20
Acetochlor	1.95	2.30		ug/L		118	70 - 130	2	20
Alachlor	1.95	2.04		ug/L		105	70 - 130	1	20

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCSD 380-82677/24-A
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
alpha-BHC	1.95	2.10		ug/L		108	70 - 130	4	20	
alpha-Chlordane	1.95	2.14		ug/L		110	70 - 130	3	20	
Anthracene	1.95	1.57		ug/L		81	70 - 130	2	20	
Atrazine	1.95	2.04		ug/L		105	70 - 130	5	20	
Benz(a)anthracene	1.95	1.90		ug/L		98	70 - 130	2	20	
Benzo[a]pyrene	1.95	1.83		ug/L		94	70 - 130	1	20	
Benzo[b]fluoranthene	1.95	2.11		ug/L		109	70 - 130	0	20	
Benzo[g,h,i]perylene	1.95	2.83	*+	ug/L		145	70 - 130	0	20	
Benzo[k]fluoranthene	1.95	2.06		ug/L		106	70 - 130	3	20	
beta-BHC	1.95	2.14		ug/L		110	70 - 130	7	20	
Bis(2-ethylhexyl) phthalate	1.95	1.96		ug/L		101	70 - 130	4	20	
Bromacil	1.95	2.09		ug/L		107	70 - 130	2	20	
Butachlor	1.95	2.13		ug/L		109	70 - 130	2	20	
Butylbenzylphthalate	1.95	2.16		ug/L		111	70 - 130	0	20	
Chlorobenzilate	1.95	2.51		ug/L		129	70 - 130	2	20	
Chloroneb	1.95	2.17		ug/L		111	70 - 130	3	20	
Chlorothalonil (Draconil, Bravo)	1.95	2.22		ug/L		114	70 - 130	1	20	
Chlorpyrifos	1.95	2.58	*+	ug/L		132	70 - 130	2	20	
Chrysene	1.95	1.94		ug/L		100	70 - 130	0	20	
delta-BHC	1.95	2.05		ug/L		105	70 - 130	4	20	
Di(2-ethylhexyl)adipate	1.95	2.13		ug/L		110	70 - 130	3	20	
Dibenz(a,h)anthracene	1.95	2.05		ug/L		105	70 - 130	0	20	
Diclorvos (DDVP)	1.95	2.47		ug/L		127	70 - 130	1	20	
Dieldrin	1.95	2.27		ug/L		117	70 - 130	1	20	
Diethylphthalate	1.95	2.17		ug/L		111	70 - 130	5	20	
Dimethylphthalate	1.95	2.05		ug/L		105	70 - 130	3	20	
Di-n-butyl phthalate	3.89	4.59		ug/L		118	70 - 130	2	20	
Di-n-octyl phthalate	1.95	2.05		ug/L		105	70 - 130	8	20	
Endosulfan I (Alpha)	1.95	2.22		ug/L		114	70 - 130	2	20	
Endosulfan II (Beta)	1.95	2.27		ug/L		117	70 - 130	2	20	
Endosulfan sulfate	1.95	2.38		ug/L		122	70 - 130	3	20	
Endrin	1.95	2.38		ug/L		122	70 - 130	1	20	
Endrin aldehyde	1.95	2.00		ug/L		103	60 - 130	3	20	
EPTC	1.95	2.04		ug/L		105	70 - 130	1	20	
Fluoranthene	1.95	2.13		ug/L		109	70 - 130	0	20	
Fluorene	1.95	1.88		ug/L		97	70 - 130	4	20	
gamma-Chlordane	1.95	2.19		ug/L		112	70 - 130	2	20	
Heptachlor	1.95	2.38		ug/L		122	70 - 130	2	20	
Heptachlor epoxide (isomer B)	1.95	2.19		ug/L		113	70 - 130	2	20	
Hexachlorobenzene	1.95	2.10		ug/L		108	70 - 130	3	20	
Hexachlorocyclopentadiene	1.95	2.26		ug/L		116	70 - 130	1	20	
Indeno[1,2,3-cd]pyrene	1.95	2.13		ug/L		109	70 - 130	3	20	
Isophorone	1.95	1.99		ug/L		102	70 - 130	2	20	
Lindane	1.95	2.17		ug/L		112	70 - 130	5	20	
Malathion	1.95	1.98		ug/L		102	70 - 130	0	20	
Methoxychlor	1.95	2.06		ug/L		106	70 - 130	1	20	
Metolachlor	1.95	2.12		ug/L		109	70 - 130	0	20	
Molinate	1.95	2.11		ug/L		108	70 - 130	1	20	
Naphthalene	1.95	1.74		ug/L		90	70 - 130	1	20	

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCSD 380-82677/24-A
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Parathion	1.95	2.32		ug/L		119	70 - 130	2	20
Pendimethalin (Penoxaline)	1.95	1.96		ug/L		101	70 - 130	1	20
Phenanthrene	1.95	1.88		ug/L		97	70 - 130	1	20
Propachlor	1.95	2.21		ug/L		113	70 - 130	4	20
Pyrene	1.95	2.08		ug/L		107	70 - 130	1	20
Simazine	1.95	2.02		ug/L		104	70 - 130	2	20
Terbacil	1.95	2.20		ug/L		113	70 - 130	3	20
Terbutylazine	1.95	2.11		ug/L		108	70 - 130	5	20
Thiobencarb	1.95	2.17		ug/L		111	70 - 130	2	20
trans-Nonachlor	1.95	2.22		ug/L		114	70 - 130	1	20
Trifluralin	1.95	2.21		ug/L		113	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Nitro-m-xylene	95		70 - 130
Perylene-d12	103		70 - 130
Triphenylphosphate	113		70 - 130

Lab Sample ID: MRL 380-82677/22-A
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0979	0.125		ug/L		128	50 - 150
2,4'-DDD	0.0979	0.120		ug/L		123	50 - 150
2,4'-DDE	0.0979	0.103		ug/L		105	50 - 150
2,4'-DDT	0.0979	0.0985		ug/L		101	50 - 150
2,4-Dinitrotoluene	0.0979	0.105		ug/L		107	50 - 150
2,6-Dinitrotoluene	0.0979	0.115		ug/L		118	50 - 150
2-Methylnaphthalene	0.0979	0.115		ug/L		117	50 - 150
4,4'-DDD	0.0979	0.0976	J	ug/L		100	50 - 150
4,4'-DDE	0.0979	0.0951	J	ug/L		97	50 - 150
4,4'-DDT	0.0979	0.101		ug/L		103	50 - 150
Acenaphthene	0.0979	0.126		ug/L		129	50 - 150
Acenaphthylene	0.0979	0.119		ug/L		121	50 - 150
Acetochlor	0.0489	0.0528	J	ug/L		108	50 - 150
Alachlor	0.0489	0.0682		ug/L		139	50 - 150
alpha-BHC	0.0979	0.153	^3+	ug/L		156	50 - 150
alpha-Chlordane	0.0245	0.0317	J	ug/L		130	50 - 150
Anthracene	0.0196	0.0267		ug/L		136	50 - 150
Atrazine	0.0489	<0.047		ug/L		95	50 - 150
Benz(a)anthracene	0.0489	0.0517		ug/L		106	50 - 150
Benzo[a]pyrene	0.0196	<0.011		ug/L		54	50 - 150
Benzo[b]fluoranthene	0.0196	0.0155	J	ug/L		79	50 - 150
Benzo[g,h,i]perylene	0.0489	0.0570		ug/L		116	50 - 150
Benzo[k]fluoranthene	0.0196	0.0192	J	ug/L		98	50 - 150
beta-BHC	0.0979	0.148	^3+	ug/L		151	50 - 150
Bis(2-ethylhexyl) phthalate	0.587	0.754		ug/L		128	50 - 150
Bromacil	0.0979	0.126		ug/L		129	50 - 150

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MRL 380-82677/22-A
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Butachlor	0.0489	0.0704		ug/L		144	50 - 150
Butylbenzylphthalate	0.147	0.210	J	ug/L		143	50 - 150
Chlorobenzilate	0.0979	0.137		ug/L		140	50 - 150
Chloroneb	0.0979	0.129		ug/L		132	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0979	0.0898	J	ug/L		92	50 - 150
Chlorpyrifos	0.0489	0.0563		ug/L		115	50 - 150
Chrysene	0.0196	0.0184	J	ug/L		94	50 - 150
delta-BHC	0.0979	0.130		ug/L		133	50 - 150
Di(2-ethylhexyl)adipate	0.294	0.362	J	ug/L		123	50 - 150
Dibenz(a,h)anthracene	0.0489	0.0521		ug/L		106	50 - 150
Diclorvos (DDVP)	0.0489	0.0666		ug/L		136	50 - 150
Dieldrin	0.0979	0.110	J	ug/L		112	50 - 150
Diethylphthalate	0.147	0.202	J	ug/L		137	50 - 150
Dimethylphthalate	0.294	0.395	J	ug/L		135	50 - 150
Di-n-butyl phthalate	0.294	0.355	J	ug/L		121	49 - 243
Di-n-octyl phthalate	0.0979	0.0750	J	ug/L		77	50 - 150
Endosulfan I (Alpha)	0.0979	0.107		ug/L		109	50 - 150
Endosulfan II (Beta)	0.0979	0.122		ug/L		124	50 - 150
Endosulfan sulfate	0.0979	0.127		ug/L		129	50 - 150
Endrin	0.0979	0.112		ug/L		114	50 - 150
Endrin aldehyde	0.0979	0.0938	J	ug/L		96	50 - 150
EPTC	0.0979	0.104		ug/L		106	50 - 150
Fluoranthene	0.0489	0.0637	J	ug/L		130	50 - 150
Fluorene	0.0489	0.0625		ug/L		128	50 - 150
gamma-Chlordane	0.0245	0.0294	J	ug/L		120	50 - 150
Heptachlor	0.0392	0.0620	^3+	ug/L		158	50 - 150
Heptachlor epoxide (isomer B)	0.0489	0.0647		ug/L		132	50 - 150
Hexachlorobenzene	0.0489	<0.040		ug/L		81	50 - 150
Hexachlorocyclopentadiene	0.0489	0.0437	J	ug/L		89	50 - 150
Indeno[1,2,3-cd]pyrene	0.0489	0.0489	J	ug/L		100	50 - 150
Isophorone	0.0979	0.115	J	ug/L		117	50 - 150
Lindane	0.0392	0.0545		ug/L		139	50 - 150
Malathion	0.0979	0.135		ug/L		138	50 - 150
Methoxychlor	0.0979	0.0868	J	ug/L		89	50 - 150
Metolachlor	0.0489	0.0825	^3+	ug/L		169	50 - 150
Molinate	0.0979	0.104		ug/L		106	50 - 150
Naphthalene	0.0979	0.103	J	ug/L		105	50 - 150
Parathion	0.0979	0.0865	J	ug/L		88	50 - 150
Pendimethalin (Penoxaline)	0.0979	0.0950	J	ug/L		97	50 - 150
Phenanthrene	0.0196	0.0289	J	ug/L		148	50 - 150
Propachlor	0.0489	0.0524		ug/L		107	50 - 150
Pyrene	0.0489	0.0567		ug/L		116	50 - 150
Simazine	0.0489	0.0670		ug/L		137	50 - 150
Terbacil	0.0979	0.132		ug/L		135	50 - 150
Terbutylazine	0.0979	0.0945	J	ug/L		97	50 - 150
Thiobencarb	0.0979	0.138	J	ug/L		141	50 - 150
trans-Nonachlor	0.0245	0.0358	J	ug/L		146	50 - 150
Trifluralin	0.0979	0.0762	J	ug/L		78	50 - 150

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MRL 380-82677/22-A
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82677

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	94		70 - 130
Perylene-d12	104		70 - 130
Triphenylphosphate	112		70 - 130

Lab Sample ID: 380-87965-1 MS
Matrix: Drinking Water
Analysis Batch: 82925

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.098		1.93	1.76		ug/L		91	70 - 130
2,4'-DDD	<0.098		1.93	2.25		ug/L		117	70 - 130
2,4'-DDE	<0.098		1.93	2.22		ug/L		115	70 - 130
2,4'-DDT	<0.098		1.93	2.09		ug/L		108	70 - 130
2,4-Dinitrotoluene	<0.098		1.93	1.89		ug/L		98	70 - 130
2,6-Dinitrotoluene	<0.098		1.93	1.75		ug/L		90	70 - 130
2-Methylnaphthalene	<0.098		1.93	1.94		ug/L		100	70 - 130
4,4'-DDD	<0.098		1.93	2.09		ug/L		108	70 - 130
4,4'-DDE	<0.098		1.93	1.96		ug/L		101	70 - 130
4,4'-DDT	<0.098		1.93	1.94		ug/L		100	70 - 130
Acenaphthene	<0.098		1.93	1.70		ug/L		88	70 - 130
Acenaphthylene	<0.098		1.93	1.81		ug/L		94	70 - 130
Acetochlor	<0.098		1.93	2.38		ug/L		123	70 - 130
Alachlor	<0.049		1.93	2.15		ug/L		111	70 - 130
alpha-BHC	<0.098	^3+	1.93	2.08		ug/L		107	70 - 130
alpha-Chlordane	<0.049		1.93	2.23		ug/L		115	70 - 130
Anthracene	<0.020		1.93	1.40		ug/L		72	70 - 130
Atrazine	<0.049		1.93	1.96		ug/L		102	70 - 130
Benz(a)anthracene	<0.049		1.93	1.81		ug/L		94	70 - 130
Benzo[a]pyrene	<0.020		1.93	1.59		ug/L		82	70 - 130
Benzo[b]fluoranthene	<0.020		1.93	1.95		ug/L		101	70 - 130
Benzo[g,h,i]perylene	<0.049	F1 *+ ^+	1.93	2.75	F1	ug/L		142	70 - 130
Benzo[k]fluoranthene	<0.020		1.93	1.98		ug/L		102	70 - 130
beta-BHC	<0.098	^3+	1.93	2.12		ug/L		109	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.93	1.99		ug/L		103	70 - 130
Bromacil	<0.098		1.93	2.05		ug/L		106	70 - 130
Butachlor	<0.049		1.93	2.22		ug/L		115	70 - 130
Butylbenzylphthalate	<0.49		1.93	2.21		ug/L		114	70 - 130
Chlorobenzilate	<0.098	F1 *+	1.93	2.64	F1	ug/L		136	70 - 130
Chloroneb	<0.098		1.93	2.09		ug/L		108	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098		1.93	2.19		ug/L		113	70 - 130
Chlorpyrifos	<0.049	F1 *+	1.93	2.61	F1	ug/L		135	70 - 130
Chrysene	<0.020		1.93	1.86		ug/L		96	70 - 130
delta-BHC	<0.098		1.93	2.18		ug/L		113	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.93	2.17		ug/L		112	70 - 130
Dibenz(a,h)anthracene	<0.049		1.93	2.00		ug/L		103	70 - 130
Diclorvos (DDVP)	<0.049		1.93	2.38		ug/L		123	70 - 130
Dieldrin	<0.20		1.93	2.31		ug/L		119	70 - 130
Diethylphthalate	<0.49		1.93	2.13		ug/L		110	70 - 130

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-1 MS
Matrix: Drinking Water
Analysis Batch: 82925

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				
Dimethylphthalate	<0.49		1.93	1.99		ug/L		103	70 - 130
Di-n-butyl phthalate	<0.98		3.87	4.72		ug/L		122	70 - 130
Di-n-octyl phthalate	<0.098		1.93	2.03		ug/L		105	70 - 130
Endosulfan I (Alpha)	<0.098		1.93	2.30		ug/L		119	70 - 130
Endosulfan II (Beta)	<0.098		1.93	2.35		ug/L		121	70 - 130
Endosulfan sulfate	<0.098		1.93	2.40		ug/L		124	70 - 130
Endrin	<0.098		1.93	2.45		ug/L		126	70 - 130
Endrin aldehyde	<0.098		1.93	2.04		ug/L		106	60 - 130
EPTC	<0.098		1.93	1.99		ug/L		103	70 - 130
Fluoranthene	<0.098		1.93	2.09		ug/L		108	70 - 130
Fluorene	<0.049		1.93	1.80		ug/L		93	70 - 130
gamma-Chlordane	<0.049		1.93	2.19		ug/L		113	70 - 130
Heptachlor	<0.039	^3+	1.93	2.42		ug/L		125	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.93	2.27		ug/L		117	70 - 130
Hexachlorobenzene	<0.049		1.93	2.05		ug/L		106	70 - 130
Hexachlorocyclopentadiene	<0.049		1.93	2.19		ug/L		113	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.93	2.02		ug/L		104	70 - 130
Isophorone	<0.49		1.93	1.94		ug/L		100	70 - 130
Lindane	<0.039		1.93	2.16		ug/L		111	70 - 130
Malathion	<0.098		1.93	2.08		ug/L		108	70 - 130
Methoxychlor	<0.098		1.93	2.03		ug/L		105	70 - 130
Metolachlor	<0.049	^3+	1.93	2.14		ug/L		111	70 - 130
Molinate	<0.098		1.93	2.06		ug/L		107	70 - 130
Naphthalene	<0.29		1.93	1.69		ug/L		87	70 - 130
Parathion	<0.098		1.93	2.29		ug/L		119	70 - 130
Pendimethalin (Penoxaline)	<0.098		1.93	2.00		ug/L		104	70 - 130
Phenanthrene	<0.039		1.93	1.88		ug/L		97	70 - 130
Propachlor	<0.049		1.93	2.20		ug/L		114	70 - 130
Pyrene	<0.049		1.93	2.04		ug/L		105	70 - 130
Simazine	<0.049		1.93	1.93		ug/L		100	70 - 130
Terbacil	<0.098		1.93	2.21		ug/L		114	70 - 130
Terbutylazine	<0.098		1.93	2.10		ug/L		109	70 - 130
Thiobencarb	<0.20		1.93	2.18		ug/L		113	70 - 130
trans-Nonachlor	<0.049		1.93	2.26		ug/L		117	70 - 130
Trifluralin	<0.098		1.93	2.18		ug/L		113	70 - 130
				MS	MS				
Surrogate	%Recovery	Qualifier	Limits						
2-Nitro-m-xylene	96		70 - 130						
Perylene-d12	102		70 - 130						
Triphenylphosphate	116		70 - 130						

Lab Sample ID: 380-88002-I-1-A DU
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
1-Methylnaphthalene	<0.098		<0.096		ug/L		NC	20	
2,4'-DDD	<0.098		<0.096		ug/L		NC	20	

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-88002-I-1-A DU
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
2,4'-DDE	<0.098		<0.096		ug/L		NC	20
2,4'-DDT	<0.098		<0.096		ug/L		NC	20
2,4-Dinitrotoluene	<0.098		<0.096		ug/L		NC	20
2,6-Dinitrotoluene	<0.098		<0.096		ug/L		NC	20
2-Methylnaphthalene	<0.098		<0.096		ug/L		NC	20
4,4'-DDD	<0.098		<0.096		ug/L		NC	20
4,4'-DDE	<0.098		<0.096		ug/L		NC	20
4,4'-DDT	<0.098		<0.096		ug/L		NC	20
Acenaphthene	<0.098		<0.096		ug/L		NC	20
Acenaphthylene	<0.098		<0.096		ug/L		NC	20
Acetochlor	<0.098		<0.096		ug/L		NC	20
Alachlor	<0.049		<0.048		ug/L		NC	20
alpha-BHC	<0.098	^3+	<0.096		ug/L		NC	20
alpha-Chlordane	<0.049		<0.048		ug/L		NC	20
Anthracene	<0.020		<0.019		ug/L		NC	20
Atrazine	<0.049		<0.048		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.048		ug/L		NC	20
Benzo[a]pyrene	<0.020		<0.019		ug/L		NC	20
Benzo[b]fluoranthene	<0.020		<0.019		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049	*+ ^+	<0.048	*+	ug/L		NC	20
Benzo[k]fluoranthene	<0.020		<0.019		ug/L		NC	20
beta-BHC	<0.098	^3+	<0.096		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.58		ug/L		NC	20
Bromacil	<0.098		<0.096		ug/L		NC	20
Butachlor	<0.049		<0.048		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.48		ug/L		NC	20
Chlorobenzilate	<0.098	*+	<0.096	*+	ug/L		NC	20
Chloroneb	<0.098		<0.096		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.098		<0.096		ug/L		NC	20
Chlorpyrifos	<0.049	*+	<0.048	*+	ug/L		NC	20
Chrysene	<0.020		<0.019		ug/L		NC	20
delta-BHC	<0.098		<0.096		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.59		<0.58		ug/L		NC	20
Dibenz(a,h)anthracene	<0.049		<0.048		ug/L		NC	20
Diclorvos (DDVP)	<0.049		<0.048		ug/L		NC	20
Dieldrin	<0.20		<0.19		ug/L		NC	20
Diethylphthalate	<0.49		<0.48		ug/L		NC	20
Dimethylphthalate	<0.49		<0.48		ug/L		NC	20
Di-n-butyl phthalate	<0.98		<0.96		ug/L		NC	20
Di-n-octyl phthalate	<0.098		<0.096		ug/L		NC	20
Endosulfan I (Alpha)	<0.098		<0.096		ug/L		NC	20
Endosulfan II (Beta)	<0.098		<0.096		ug/L		NC	20
Endosulfan sulfate	<0.098		<0.096		ug/L		NC	20
Endrin	<0.098		<0.096		ug/L		NC	20
Endrin aldehyde	<0.098		<0.096		ug/L		NC	20
EPTC	<0.098		<0.096		ug/L		NC	20
Fluoranthene	<0.098		<0.096		ug/L		NC	20
Fluorene	<0.049		<0.048		ug/L		NC	20
gamma-Chlordane	<0.049		<0.048		ug/L		NC	20

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QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-88002-I-1-A DU
Matrix: Water
Analysis Batch: 82925

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 82677

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Heptachlor	<0.039	^3+	<0.038		ug/L		NC	20
Heptachlor epoxide (isomer B)	<0.049		<0.048		ug/L		NC	20
Hexachlorobenzene	<0.049		<0.048		ug/L		NC	20
Hexachlorocyclopentadiene	<0.049		<0.048		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.049		<0.048		ug/L		NC	20
Isophorone	<0.49		<0.48		ug/L		NC	20
Lindane	<0.039		<0.038		ug/L		NC	20
Malathion	<0.098		<0.096		ug/L		NC	20
Methoxychlor	<0.098		<0.096		ug/L		NC	20
Metolachlor	<0.049	^3+	<0.048		ug/L		NC	20
Molinate	<0.098		<0.096		ug/L		NC	20
Naphthalene	<0.29		<0.29		ug/L		NC	20
Parathion	<0.098		<0.096		ug/L		NC	20
Pendimethalin (Penoxaline)	<0.098		<0.096		ug/L		NC	20
Phenanthrene	<0.039		<0.038		ug/L		NC	20
Propachlor	<0.049		<0.048		ug/L		NC	20
Pyrene	<0.049		<0.048		ug/L		NC	20
Simazine	<0.049		<0.048		ug/L		NC	20
Terbacil	<0.098		<0.096		ug/L		NC	20
Terbutylazine	<0.098		<0.096		ug/L		NC	20
Thiobencarb	<0.20		<0.19		ug/L		NC	20
Total Permethrin (mixed isomers)	<0.20		<0.19		ug/L		NC	20
trans-Nonachlor	<0.049		<0.048		ug/L		NC	20
Trifluralin	<0.098		<0.096		ug/L		NC	20

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	95		70 - 130
Perylene-d12	97		70 - 130
Triphenylphosphate	113		70 - 130

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

Lab Sample ID: MBL 380-83206/19-A
Matrix: Water
Analysis Batch: 83345

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 83206

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1

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QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MBL 380-83206/19-A
Matrix: Water
Analysis Batch: 83345

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 83206

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		03/26/24 04:28	03/27/24 08:27	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	81		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C6 PFDA	91		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C5 PFHxA	98		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C4 PFHpA	106		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C8 PFOA	101		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C9 PFNA	90		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C7 PFUnA	88		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C2 PFDoA	89		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C4 PFBA	100		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C5 PFPeA	99		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C3 PFBS	98		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C3 PFHxS	99		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C8 PFOS	95		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C2-4:2-FTS	119		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C2-6:2-FTS	120		50 - 200	03/26/24 04:28	03/27/24 08:27	1
13C2-8:2-FTS	97		50 - 200	03/26/24 04:28	03/27/24 08:27	1

Lab Sample ID: LCS 380-83206/21-A
Matrix: Water
Analysis Batch: 83345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83206

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	60.2	59.7		ng/L		99	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCS 380-83206/21-A
Matrix: Water
Analysis Batch: 83345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83206

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid(9Cl-PF3ONS)	60.2	59.0		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	59.0		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	59.9		ng/L		99	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	63.2		ng/L		105	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	61.9		ng/L		103	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	64.6		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	62.8		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	61.9		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	61.0		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	60.2	61.3		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	59.6		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	63.9		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	66.9		ng/L		111	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	61.7		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	62.4		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	64.4		ng/L		107	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	61.3		ng/L		102	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	62.3		ng/L		103	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.2	59.4		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	61.7		ng/L		102	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	55.4		ng/L		92	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	59.5		ng/L		99	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	64.2		ng/L		107	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.2	58.4		ng/L		97	70 - 130

<i>Isotope Dilution</i>	<i>LCS %Recovery</i>	<i>LCS Qualifier</i>	<i>Limits</i>
13C3 HFPO-DA	77		50 - 200
13C6 PFDA	87		50 - 200
13C5 PFHxA	93		50 - 200
13C4 PFHpA	94		50 - 200
13C8 PFOA	92		50 - 200
13C9 PFNA	88		50 - 200
13C7 PFUnA	88		50 - 200
13C2 PFDoA	86		50 - 200
13C4 PFBA	90		50 - 200

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCS 380-83206/21-A
Matrix: Water
Analysis Batch: 83345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83206

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C5 PFPeA	98		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	101		50 - 200
13C8 PFOS	95		50 - 200
13C2-4:2-FTS	115		50 - 200
13C2-6:2-FTS	120		50 - 200
13C2-8:2-FTS	100		50 - 200

Lab Sample ID: MRL 380-83206/20-A
Matrix: Water
Analysis Batch: 83345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83206

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.06	J	ng/L		103	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.93	J	ng/L		96	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.04	J	ng/L		102	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.87	J	ng/L		93	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.14	J	ng/L		107	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.20	J	ng/L		110	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.17	J	ng/L		108	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.24	J	ng/L		112	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.20	J	ng/L		110	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.17	J	ng/L		108	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.23	J	ng/L		111	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.37	J	ng/L		118	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.10	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.20	J	ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.33	J	ng/L		116	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.32	J	ng/L		115	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.31	J	ng/L		115	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	1.91	J	ng/L		95	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.12	J	ng/L		106	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.08	J	ng/L		103	50 - 150

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MRL 380-83206/20-A
Matrix: Water
Analysis Batch: 83345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83206

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanoic acid (PFPeA)	2.01	2.34	J	ng/L		117	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.26	J	ng/L		113	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.08	J	ng/L		104	50 - 150
Isotope Dilution	MRL	MRL	Qualifier				Limits
	%Recovery						
13C3 HFPO-DA	85						50 - 200
13C6 PFDA	91						50 - 200
13C5 PFHxA	97						50 - 200
13C4 PFHpA	104						50 - 200
13C8 PFOA	101						50 - 200
13C9 PFNA	94						50 - 200
13C7 PFUnA	89						50 - 200
13C2 PFDoA	91						50 - 200
13C4 PFBA	97						50 - 200
13C5 PFPeA	96						50 - 200
13C3 PFBS	104						50 - 200
13C3 PFHxS	105						50 - 200
13C8 PFOS	100						50 - 200
13C2-4:2-FTS	118						50 - 200
13C2-6:2-FTS	124						50 - 200
13C2-8:2-FTS	103						50 - 200

Lab Sample ID: 380-87955-E-1-A MS
Matrix: Water
Analysis Batch: 83345

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 83206

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	*5-	60.4	59.5		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0	*5-	60.4	57.8		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0	*5-	60.4	54.9		ng/L		91	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0	*5-	60.4	56.2	*5-	ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0	*5-	60.4	61.8		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0	*5-	60.4	63.4	*5-	ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0	*5-	60.4	63.7		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0	*5-	60.4	60.5		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0	*5-	60.4	59.6		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0	*5-	60.4	58.2		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	<2.0	*5-	60.4	60.1	*5-	ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	NR	*5-	60.4	59.5		ng/L		NaN	70 - 130
Perfluorooctanoic acid (PFOA)	NR	*5-	60.4	62.6	*5-	ng/L		NaN	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87955-E-1-A MS
Matrix: Water
Analysis Batch: 83345

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 83206

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	<2.0	*5-	60.4	62.9		ng/L		104	70 - 130
Perfluorobutanoic acid (PFBA)	18	F1 *5-	60.4	59.6	F1	ng/L		69	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0	*5-	60.4	61.9		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0	*5-	60.4	65.0		ng/L		108	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0	*5-	60.4	64.4		ng/L		107	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0	*5-	60.4	55.9		ng/L		93	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0	*5-	60.4	58.6		ng/L		97	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0	*5-	60.4	57.6		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0	*5-	60.4	59.2		ng/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	NR	*5-	60.4	64.0		ng/L		NaN	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0	*5-	60.4	64.7		ng/L		107	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0	*5-	60.4	57.1		ng/L		95	70 - 130

Isotope Dilution	%Recovery	MS Qualifier	MS Limits
13C3 HFPO-DA	49	*5-	50 - 200
13C6 PFDA	46	*5-	50 - 200
13C5 PFHxA	53		50 - 200
13C4 PFHpA	53		50 - 200
13C8 PFOA	46	*5-	50 - 200
13C9 PFNA	44	*5-	50 - 200
13C7 PFUnA	52		50 - 200
13C2 PFDoA	52		50 - 200
13C4 PFBA	52		50 - 200
13C5 PFPeA	52		50 - 200
13C3 PFBS	95		50 - 200
13C3 PFHxS	99		50 - 200
13C8 PFOS	91		50 - 200
13C2-4:2-FTS	114		50 - 200
13C2-6:2-FTS	107		50 - 200
13C2-8:2-FTS	95		50 - 200

Lab Sample ID: 380-87955-F-1-A MSD
Matrix: Water
Analysis Batch: 83345

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 83206

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	*5-	60.4	61.9		ng/L		102	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0	*5-	60.4	57.6		ng/L		95	70 - 130	0	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87955-F-1-A MSD
Matrix: Water
Analysis Batch: 83345

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 83206

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0	*5-	60.4	58.1		ng/L		96	70 - 130	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0	*5-	60.4	60.4		ng/L		100	70 - 130	7	30
Perfluorobutanesulfonic acid (PFBS)	<2.0	*5-	60.4	65.0		ng/L		108	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	<2.0	*5-	60.4	61.2		ng/L		101	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0	*5-	60.4	64.8		ng/L		107	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0	*5-	60.4	62.4		ng/L		103	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0	*5-	60.4	61.4		ng/L		102	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0	*5-	60.4	62.6		ng/L		104	70 - 130	7	30
Perfluorononanoic acid (PFNA)	<2.0	*5-	60.4	60.5		ng/L		100	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	NR	*5-	60.4	59.9		ng/L		NaN	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	NR	*5-	60.4	66.0		ng/L		NaN	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	<2.0	*5-	60.4	68.8		ng/L		114	70 - 130	9	30
Perfluorobutanoic acid (PFBA)	18	F1 *5-	60.4	64.2		ng/L		76	70 - 130	7	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0	*5-	60.4	63.4		ng/L		105	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0	*5-	60.4	68.6		ng/L		114	70 - 130	6	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0	*5-	60.4	68.4		ng/L		113	70 - 130	6	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0	*5-	60.4	54.2		ng/L		90	70 - 130	3	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0	*5-	60.4	62.0		ng/L		103	70 - 130	6	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0	*5-	60.4	62.4		ng/L		103	70 - 130	8	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0	*5-	60.4	59.1		ng/L		98	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	NR	*5-	60.4	63.6		ng/L		NaN	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0	*5-	60.4	65.3		ng/L		108	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0	*5-	60.4	61.1		ng/L		101	70 - 130	7	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	70		50 - 200
13C6 PFDA	65		50 - 200
13C5 PFHxA	74		50 - 200
13C4 PFHpA	75		50 - 200
13C8 PFOA	65		50 - 200
13C9 PFNA	62		50 - 200
13C7 PFUnA	67		50 - 200
13C2 PFDoA	74		50 - 200
13C4 PFBA	75		50 - 200
13C5 PFPeA	77		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	107		50 - 200

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87955-F-1-A MSD
Matrix: Water
Analysis Batch: 83345

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 83206

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C8 PFOS	101		50 - 200
13C2-4:2-FTS	120		50 - 200
13C2-6:2-FTS	113		50 - 200
13C2-8:2-FTS	105		50 - 200

Lab Sample ID: MBL 380-83699/21-A
Matrix: Water
Analysis Batch: 83929

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 83699

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		03/29/24 07:51	04/01/24 18:22	1

Isotope Dilution	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C3 HFPO-DA	72		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C6 PFDA	82		50 - 200	03/29/24 07:51	04/01/24 18:22	1

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QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MBL 380-83699/21-A
Matrix: Water
Analysis Batch: 83929

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 83699

Isotope Dilution	MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C5 PFHxA	85		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C4 PFHpA	91		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C8 PFOA	89		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C9 PFNA	86		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C7 PFUnA	83		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C2 PFDoA	82		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C4 PFBA	92		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C5 PFPeA	92		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C3 PFBS	85		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C3 PFHxS	92		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C8 PFOS	87		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C2-4:2-FTS	114		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C2-6:2-FTS	109		50 - 200	03/29/24 07:51	04/01/24 18:22	1
13C2-8:2-FTS	86		50 - 200	03/29/24 07:51	04/01/24 18:22	1

Lab Sample ID: LCS 380-83699/23-A
Matrix: Water
Analysis Batch: 83929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83699

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.0	57.8		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.0	58.9		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.0	60.9		ng/L		101	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.0	60.1		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.0	61.2		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	60.0	60.5		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	60.0	62.1		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.0	60.0		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.0	59.1		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	60.0	63.4		ng/L		106	70 - 130
Perfluorononanoic acid (PFNA)	60.0	59.4		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.0	58.0		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	60.0	58.0		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.0	63.9		ng/L		107	70 - 130
Perfluorobutanoic acid (PFBA)	60.0	61.4		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.0	64.1		ng/L		107	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.0	60.9		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.0	62.1		ng/L		104	70 - 130

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QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCS 380-83699/23-A
Matrix: Water
Analysis Batch: 83929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83699

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nonafluoro-3,6-dioxahheptanoic acid (NFDHA)	60.0	51.5		ng/L		86	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.0	59.2		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.0	62.0		ng/L		103	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.0	60.7		ng/L		101	70 - 130
Perfluoropentanoic acid (PFPeA)	60.0	65.5		ng/L		109	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.0	63.1		ng/L		105	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.0	57.1		ng/L		95	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	75		50 - 200
13C6 PFDA	84		50 - 200
13C5 PFHxA	84		50 - 200
13C4 PFHpA	88		50 - 200
13C8 PFOA	92		50 - 200
13C9 PFNA	91		50 - 200
13C7 PFUnA	82		50 - 200
13C2 PFDoA	88		50 - 200
13C4 PFBA	94		50 - 200
13C5 PFPeA	94		50 - 200
13C3 PFBS	94		50 - 200
13C3 PFHxS	101		50 - 200
13C8 PFOS	95		50 - 200
13C2-4:2-FTS	111		50 - 200
13C2-6:2-FTS	115		50 - 200
13C2-8:2-FTS	96		50 - 200

Lab Sample ID: MRL 380-83699/22-A
Matrix: Water
Analysis Batch: 83929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83699

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.92	J	ng/L		96	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.05	J	ng/L		102	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.15	J	ng/L		107	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.23	J	ng/L		111	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.41	J	ng/L		120	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.22	J	ng/L		111	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.13	J	ng/L		106	50 - 150

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MRL 380-83699/22-A
Matrix: Water
Analysis Batch: 83929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83699

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroheptanoic acid (PFHpA)	2.01	2.23	J	ng/L		111	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.12	J	ng/L		106	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.49	J	ng/L		124	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.24	J	ng/L		111	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.29	J	ng/L		114	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.27	J	ng/L		113	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.18	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.18	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.15	J	ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.23	J	ng/L		111	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.06	J	ng/L		103	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	2.30	J	ng/L		114	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.30	J	ng/L		114	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.96	J	ng/L		98	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.41	J	ng/L		120	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.23	J	ng/L		111	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.11	J	ng/L		105	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	69		50 - 200
13C6 PFDA	82		50 - 200
13C5 PFHxA	88		50 - 200
13C4 PFHpA	91		50 - 200
13C8 PFOA	92		50 - 200
13C9 PFNA	82		50 - 200
13C7 PFUnA	83		50 - 200
13C2 PFDoA	83		50 - 200
13C4 PFBA	93		50 - 200
13C5 PFPeA	93		50 - 200
13C3 PFBS	88		50 - 200
13C3 PFHxS	96		50 - 200
13C8 PFOS	92		50 - 200
13C2-4:2-FTS	122		50 - 200
13C2-6:2-FTS	119		50 - 200
13C2-8:2-FTS	92		50 - 200

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-88483-B-1-B LMS
Matrix: Water
Analysis Batch: 83929

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 83699

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	1.85	J	ng/L		92	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	1.85	J	ng/L		92	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.01		ng/L		100	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.14		ng/L		106	50 - 150
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.01	2.15		ng/L		107	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.02		ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.06		ng/L		103	50 - 150
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	2.12		ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.01	2.12		ng/L		106	50 - 150
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	2.10		ng/L		105	50 - 150
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.09		ng/L		104	50 - 150
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.01	2.17		ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	<2.0		2.01	2.23		ng/L		111	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.11		ng/L		105	50 - 150
Perfluorobutanoic acid (PFBA)	<2.0		2.01	1.98	J	ng/L		98	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.01	2.15		ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.01	2.23		ng/L		111	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.01	2.26		ng/L		113	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.01	1.80	J	ng/L		89	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.01	2.04		ng/L		101	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.01	2.08		ng/L		104	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.01	1.93	J	ng/L		96	50 - 150
Perfluoropentanoic acid (PFPeA)	<2.0		2.01	2.26		ng/L		113	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.01	2.16		ng/L		108	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.01	1.99	J	ng/L		99	50 - 150
		LMS	LMS						
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	74		50 - 200						
13C6 PFDA	88		50 - 200						
13C5 PFHxA	91		50 - 200						
13C4 PFHpA	97		50 - 200						
13C8 PFOA	96		50 - 200						
13C9 PFNA	92		50 - 200						

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-88483-B-1-B LMS
Matrix: Water
Analysis Batch: 83929

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 83699

<i>Isotope Dilution</i>	<i>LMS %Recovery</i>	<i>LMS Qualifier</i>	<i>Limits</i>
13C7 PFUnA	88		50 - 200
13C2 PFDoA	93		50 - 200
13C4 PFBA	98		50 - 200
13C5 PFPeA	99		50 - 200
13C3 PFBS	97		50 - 200
13C3 PFHxS	100		50 - 200
13C8 PFOS	97		50 - 200
13C2-4:2-FTS	122		50 - 200
13C2-6:2-FTS	117		50 - 200
13C2-8:2-FTS	102		50 - 200

Lab Sample ID: 380-88483-C-1-B LMSD
Matrix: Water
Analysis Batch: 83929

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 83699

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>LMSD Result</i>	<i>LMSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	1.78	J	ng/L		89	50 - 150	4	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	1.81	J	ng/L		90	50 - 150	2	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.06		ng/L		103	50 - 150	3	50
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.21		ng/L		110	50 - 150	3	50
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.01	2.04		ng/L		102	50 - 150	5	50
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.05		ng/L		102	50 - 150	1	50
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.10		ng/L		105	50 - 150	2	50
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	2.20		ng/L		109	50 - 150	4	50
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.01	2.01		ng/L		100	50 - 150	5	50
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	2.04		ng/L		102	50 - 150	3	50
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.14		ng/L		107	50 - 150	3	50
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.01	2.14		ng/L		107	50 - 150	2	50
Perfluorooctanoic acid (PFOA)	<2.0		2.01	2.09		ng/L		104	50 - 150	6	50
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.14		ng/L		107	50 - 150	1	50
Perfluorobutanoic acid (PFBA)	<2.0		2.01	2.08		ng/L		104	50 - 150	5	50
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.01	2.18		ng/L		108	50 - 150	1	50
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.01	2.17		ng/L		108	50 - 150	3	50
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.01	2.15		ng/L		107	50 - 150	5	50
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.01	1.63	J	ng/L		81	50 - 150	9	50
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.01	1.93	J	ng/L		96	50 - 150	5	50

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-88483-C-1-B LMSD
Matrix: Water
Analysis Batch: 83929

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 83699

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.01	2.15		ng/L		107	50 - 150	3	50
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.01	1.87	J	ng/L		93	50 - 150	3	50
Perfluoropentanoic acid (PFPeA)	<2.0		2.01	2.17		ng/L		108	50 - 150	4	50
Perfluoroheptanesulfonic acid (PFHpS)	2.0		2.01	2.12		ng/L		106	50 - 150	2	50
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.01	1.94	J	ng/L		96	50 - 150	3	50
LMSD LMSD											
Isotope Dilution	%Recovery	Qualifier	Limits								
13C3 HFPO-DA	76		50 - 200								
13C6 PFDA	89		50 - 200								
13C5 PFHxA	91		50 - 200								
13C4 PFHpA	94		50 - 200								
13C8 PFOA	98		50 - 200								
13C9 PFNA	91		50 - 200								
13C7 PFUnA	86		50 - 200								
13C2 PFDoA	90		50 - 200								
13C4 PFBA	97		50 - 200								
13C5 PFPeA	106		50 - 200								
13C3 PFBS	93		50 - 200								
13C3 PFHxS	99		50 - 200								
13C8 PFOS	96		50 - 200								
13C2-4:2-FTS	118		50 - 200								
13C2-6:2-FTS	117		50 - 200								
13C2-8:2-FTS	96		50 - 200								

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

Lab Sample ID: MBL 380-82576/21-A
Matrix: Water
Analysis Batch: 82755

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82576

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<0.58		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<0.42		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1

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QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MBL 380-82576/21-A
Matrix: Water
Analysis Batch: 82755

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82576

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		03/21/24 11:19	03/22/24 16:14	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	113		70 - 130			03/21/24 11:19	03/22/24 16:14	1
13C2 PFHxA	115		70 - 130			03/21/24 11:19	03/22/24 16:14	1
13C2 PFDA	113		70 - 130			03/21/24 11:19	03/22/24 16:14	1
13C3-GenX	104		70 - 130			03/21/24 11:19	03/22/24 16:14	1

Lab Sample ID: LCS 380-82576/23-A
Matrix: Water
Analysis Batch: 82755

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82576

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	24.9		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	26.2		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	25.8		ng/L		103	70 - 130
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	25.1	25.5		ng/L		102	70 - 130
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	25.1	25.8		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	26.2		ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	25.9		ng/L		103	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	25.8		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	26.3		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	27.6		ng/L		110	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	24.4		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	28.0		ng/L		112	70 - 130
Perfluorononanoic acid (PFNA)	25.1	25.9		ng/L		104	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	25.2		ng/L		100	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	27.0		ng/L		108	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	24.6		ng/L		98	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	24.9		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	27.5		ng/L		110	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

<i>Surrogate</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
<i>%Recovery</i>	<i>Qualifier</i>		
<i>d5-NEtFOSAA</i>	105		70 - 130
<i>13C2 PFHxA</i>	112		70 - 130
<i>13C2 PFDA</i>	110		70 - 130
<i>13C3-GenX</i>	108		70 - 130

Lab Sample ID: MRL 380-82576/22-A
Matrix: Water
Analysis Batch: 82755

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82576

<i>Analyte</i>	<i>Spike</i>	<i>MRL</i>	<i>MRL</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>
<i>Added</i>	<i>Result</i>	<i>Qualifier</i>					<i>Limits</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.04	J	ng/L		102	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.12	J	ng/L		105	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.21	J	ng/L		110	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.16	J	ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.25	J	ng/L		112	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.09	J	ng/L		104	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.20	J	ng/L		109	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.25	J	ng/L		112	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.12	J	ng/L		106	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.16	J	ng/L		108	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.05	J	ng/L		102	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.01	J	ng/L		100	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.27	J	ng/L		113	50 - 150

<i>Surrogate</i>	<i>MRL</i>	<i>MRL</i>	<i>Limits</i>
<i>%Recovery</i>	<i>Qualifier</i>		
<i>d5-NEtFOSAA</i>	108		70 - 130
<i>13C2 PFHxA</i>	114		70 - 130
<i>13C2 PFDA</i>	113		70 - 130
<i>13C3-GenX</i>	109		70 - 130

QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87670-AH-1-A MS
Matrix: Water
Analysis Batch: 82755

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 82576

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.2	24.6		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	26.7		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	25.4		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	26.2		ng/L		104	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.2	25.7		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	26.8		ng/L		106	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	24.5		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.2	27.0		ng/L		108	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.2	26.6		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.2	27.0		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	25.4		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	27.8		ng/L		111	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.2	26.7		ng/L		106	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	25.7		ng/L		102	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	26.6		ng/L		106	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		25.2	25.4		ng/L		101	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	24.9		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	27.4		ng/L		109	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
d5-NEtFOSAA	110		70 - 130
13C2 PFHxA	115		70 - 130
13C2 PFDA	111		70 - 130
13C3-GenX	111		70 - 130

Lab Sample ID: 380-87670-AJ-1-A MSD
Matrix: Water
Analysis Batch: 82755

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 82576

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.2	24.5		ng/L		98	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	26.5		ng/L		106	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	25.0		ng/L		99	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	25.7		ng/L		102	70 - 130	2	30

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QC Sample Results

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87670-AJ-1-A MSD
Matrix: Water
Analysis Batch: 82755

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 82576

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		25.2	26.0		ng/L		104	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	25.9		ng/L		103	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	24.7		ng/L		98	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		25.2	25.8		ng/L		102	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	<2.0		25.2	25.8		ng/L		102	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.2	26.5		ng/L		105	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	26.1		ng/L		104	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	27.0		ng/L		108	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		25.2	26.3		ng/L		104	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	24.7		ng/L		98	70 - 130	4	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	25.6		ng/L		102	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		25.2	24.8		ng/L		98	70 - 130	2	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	24.8		ng/L		99	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	26.7		ng/L		106	70 - 130	3	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	104		70 - 130								
13C2 PFHxA	113		70 - 130								
13C2 PFDA	110		70 - 130								
13C3-GenX	107		70 - 130								

QC Association Summary

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

GC/MS Semi VOA

Prep Batch: 82677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-87965-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	
380-87965-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	525.2	
MB 380-82677/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-82677/23-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-82677/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-82677/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-87965-1 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	
380-88002-I-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 82925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-87965-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	82677
380-87965-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	525.2	82677
MB 380-82677/21-A	Method Blank	Total/NA	Water	525.2	82677
LCS 380-82677/23-A	Lab Control Sample	Total/NA	Water	525.2	82677
LCSD 380-82677/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	82677
MRL 380-82677/22-A	Lab Control Sample	Total/NA	Water	525.2	82677
380-87965-1 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	82677
380-88002-I-1-A DU	Duplicate	Total/NA	Water	525.2	82677

LCMS

Prep Batch: 82576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-87965-5	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	537.1 DW	
380-87965-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Water	537.1 DW	
380-87965-7	FB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	537.1 DW	
380-87965-8	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	537.1 DW	
MBL 380-82576/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-82576/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-82576/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-87670-AH-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-87670-AJ-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 82755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-87965-5	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	537.1	82576
380-87965-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Water	537.1	82576
380-87965-7	FB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	537.1	82576
380-87965-8	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	537.1	82576
MBL 380-82576/21-A	Method Blank	Total/NA	Water	537.1	82576
LCS 380-82576/23-A	Lab Control Sample	Total/NA	Water	537.1	82576
MRL 380-82576/22-A	Lab Control Sample	Total/NA	Water	537.1	82576
380-87670-AH-1-A MS	Matrix Spike	Total/NA	Water	537.1	82576
380-87670-AJ-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	82576

Prep Batch: 83206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-87965-5	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	533	
MBL 380-83206/19-A	Method Blank	Total/NA	Water	533	
LCS 380-83206/21-A	Lab Control Sample	Total/NA	Water	533	

QC Association Summary

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

LCMS (Continued)

Prep Batch: 83206 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 380-83206/20-A	Lab Control Sample	Total/NA	Water	533	
380-87955-E-1-A MS	Matrix Spike	Total/NA	Water	533	
380-87955-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 83345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-87965-5	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	533	83206
MBL 380-83206/19-A	Method Blank	Total/NA	Water	533	83206
LCS 380-83206/21-A	Lab Control Sample	Total/NA	Water	533	83206
MRL 380-83206/20-A	Lab Control Sample	Total/NA	Water	533	83206
380-87955-E-1-A MS	Matrix Spike	Total/NA	Water	533	83206
380-87955-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	83206

Prep Batch: 83699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-87965-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Water	533	
MBL 380-83699/21-A	Method Blank	Total/NA	Water	533	
LCS 380-83699/23-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-83699/22-A	Lab Control Sample	Total/NA	Water	533	
380-88483-B-1-B LMS	Matrix Spike	Total/NA	Water	533	
380-88483-C-1-B LMSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 83929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-87965-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Water	533	83699
MBL 380-83699/21-A	Method Blank	Total/NA	Water	533	83699
LCS 380-83699/23-A	Lab Control Sample	Total/NA	Water	533	83699
MRL 380-83699/22-A	Lab Control Sample	Total/NA	Water	533	83699
380-88483-B-1-B LMS	Matrix Spike	Total/NA	Water	533	83699
380-88483-C-1-B LMSD	Matrix Spike Duplicate	Total/NA	Water	533	83699

Lab Chronicle

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-1

Date Collected: 03/18/24 10:25

Matrix: Drinking Water

Date Received: 03/20/24 10:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			82677	N8NE	EA POM	03/22/24 11:08
Total/NA	Analysis	525.2		1	82925	Q8LA	EA POM	03/24/24 10:52

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

Lab Sample ID: 380-87965-2

Date Collected: 03/18/24 10:45

Matrix: Drinking Water

Date Received: 03/20/24 10:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			82677	N8NE	EA POM	03/22/24 11:08
Total/NA	Analysis	525.2		1	82925	Q8LA	EA POM	03/24/24 12:32

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

Lab Sample ID: 380-87965-5

Date Collected: 03/18/24 10:25

Matrix: Water

Date Received: 03/20/24 10:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			83206	XTD8	EA POM	03/26/24 04:28
Total/NA	Analysis	533		1	83345	SZ9R	EA POM	03/27/24 11:58
Total/NA	Prep	537.1 DW			82576	A5GB	EA POM	03/21/24 11:19
Total/NA	Analysis	537.1		1	82755	R6YA	EA POM	03/22/24 19:13

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

Lab Sample ID: 380-87965-6

Date Collected: 03/18/24 10:45

Matrix: Water

Date Received: 03/20/24 10:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			83699	SL5Q	EA POM	03/29/24 07:51
Total/NA	Analysis	533		1	83929	SZ9R	EA POM	04/01/24 19:48
Total/NA	Prep	537.1 DW			82576	A5GB	EA POM	03/21/24 11:19
Total/NA	Analysis	537.1		1	82755	R6YA	EA POM	03/22/24 19:23

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

Lab Sample ID: 380-87965-7

Date Collected: 03/18/24 10:25

Matrix: Water

Date Received: 03/20/24 10:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			82576	A5GB	EA POM	03/21/24 11:19
Total/NA	Analysis	537.1		1	82755	R6YA	EA POM	03/22/24 19:32

Lab Chronicle

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-87965-8

Date Collected: 03/18/24 10:45

Matrix: Water

Date Received: 03/20/24 10:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			82576	A5GB	EA POM	03/21/24 11:19
Total/NA	Analysis	537.1		1	82755	R6YA	EA POM	03/22/24 19:42

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: 380-87965-1
 SDG: 525.2, 533, 537.1

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	02-12-24 *

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 renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

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

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

Method Summary

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

Job ID: 380-87965-1
SDG: 525.2, 533, 537.1

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

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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



Sample Summary

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

Job ID: 380-87965-1
 SDG: 525.2, 533, 537.1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-87965-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	03/18/24 10:25	03/20/24 10:55	HI0000331
380-87965-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	03/18/24 10:45	03/20/24 10:55	HI0000331
380-87965-5	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Water	03/18/24 10:25	03/20/24 10:55	HI0000331
380-87965-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	03/18/24 10:45	03/20/24 10:55	HI0000331
380-87965-7	FB:AIEA GULCH WELLS P2 (331-202-TP072)	Water	03/18/24 10:25	03/20/24 10:55	
380-87965-8	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	03/18/24 10:45	03/20/24 10:55	

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

Chain of Custody Record



Client Information Client Contact: Dr. Ron Fenstemacher Phone: 808-748-5840 Company: City and County of Honolulu		Lab PM: Arada, Rachelle E-Mail: Rachelle.Arada@et.eurofins.com		Carrier Tracking No(s): State of Origin:		COC No: Page 1 of 2 Job #			
Due Date Requested: TAT Requested (days): Standard Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: C20525101 exp 05312023 WO #:		Analysis Requested SUBCONTRACT - 625 PAH Physis LL (EAL) + TICS SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil SUBCONTRACT - (MOD) 525 plus Plus TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) 525.2.PREC - (MOD) 525 plus Plus TICs 537.1.DW.PREC - 537.1 Full List 533 - All Analytes		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anichlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: ammonium acetate		Total Number of Containers:		Special Instructions/Note: Chlorinated	
Project Name: RED HILL/HBWS Sites Event Desc. RUSH Weekly Red Hill Project #: 38001111 SSON#:		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/>		Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Method of Shipment: FED EX 2 7756 0792 4515 Date/Time: 03/20/2024 10:55 Company: EEAP			
Sample Identification MOANALUA WELLS AIEA GULCH WELLS PUMP 2 AIEA WELLS PUMPS 1&2 (260) Pump 2 HALAWA WELLS UNIT 1&2 (write pump number)		Sample Date: 3/18/24 Sample Time: 10:25 Sample Time: 10:45		Sample Type (C=Comp, G=grab) G Preservation Code: G		Matrix (W=water, S=solid, O=wastabil, BT=Tissue, A=Air)			
TB MOANALUA WELLS TB AIEA GULCH WELLS PUMP 2 TB AIEA WELLS PUMPS 1&2 (260) TB HALAWA WELLS UNIT 1&2		Date: 3/19/24 Date/Time: 12:00		Date/Time: 03/20/2024 10:55 Date/Time:		Date/Time:			
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		Date: 3/19/24 Date/Time: 12:00		Date/Time: 03/20/2024 10:55 Date/Time:		Date/Time:			
Deliverable Requested I, II, III, IV, Other (specify)		Date: 3/19/24 Date/Time: 12:00		Date/Time: 03/20/2024 10:55 Date/Time:		Date/Time:			
Empty Kit Relinquished by:		Date: 3/19/24 Date/Time: 12:00		Date/Time: 03/20/2024 10:55 Date/Time:		Date/Time:			
Relinquished by:		Date: 3/19/24 Date/Time: 12:00		Date/Time: 03/20/2024 10:55 Date/Time:		Date/Time:			
Relinquished by:		Date: 3/19/24 Date/Time: 12:00		Date/Time: 03/20/2024 10:55 Date/Time:		Date/Time:			
Relinquished by:		Date: 3/19/24 Date/Time: 12:00		Date/Time: 03/20/2024 10:55 Date/Time:		Date/Time:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Date: 3/19/24 Date/Time: 12:00		Date/Time: 03/20/2024 10:55 Date/Time:		Date/Time:			
Custody Seal No.		Date: 3/19/24 Date/Time: 12:00		Date/Time: 03/20/2024 10:55 Date/Time:		Date/Time:			

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

Chain of Custody Record



Client Information Client Contact: Dr Ron Fenstemacher Phone: 808-748-5840 Company: PANKAMOL HUANG City and County of Honolulu Address: 630 South Beretania St. Chemistry Lab City: Honolulu State, Zip: Hawaii 96843 Phone: 808-748-5841 Email: RFENSTEMACHER@hbws.org Project Name: RED HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill Site: Hawaii		Lab PM: Arada, Rachelle E-Mail: Rachelle.Arada@bet.eurofins.com Carrier Tracking No(s): State of Origin:		COC No: Page: Page 1 of 2 Job #:			
Due Date Requested: TAT Requested (days): Standard Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: C20525101 exp 05312023 WOC#: 38001111 Project #: 38001111 SSOW#:		Analysis Requested Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICS R RA RA OA RA Y Z SUBCONTRACT - 8015 Gas (Purgable) LL (EAL) RA RA RA OA RA Y Z SUBCONTRACT - (MOD) 525 plus Plus TICS 525.2.PREC - (MOD) 525 plus Plus TICS 525.1.DW.PREC - 527.1 Full List SUBCONTRACT - 8015 Gas (Purgable) LL (EAL) 533 - All Analytes					
Sample Identification MOANALUA WELLS AIEA GULCH WELLS PUMP 2 AIEA WELLS PUMPS 1&2 (260) HALAWA WELLS UNIT 1&2 (write pump number) TB MOANALUA WELLS TB AIEA GULCH WELLS PUMP 2 TB AIEA WELLS PUMPS 1&2 (260) TB HALAWA WELLS UNIT 1&2		Sample Date 3/19/24 3/19/24	Sample Time 1025 1045	Sample Type (C=Comp, G=grab) G G G G	Matrix (Water, Solid, Organic, BT=Tissue, A=Air) Water Water Water Water Water Water Water	Preservation Code: G G G G	Special Instructions/Note: Chlorinated
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)		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		Special Instructions/QC Requirements Method of Shipment: FED EX ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ① 450 0792 4504 ② 450 0792 4515			
Empty Kit Relinquished by: PANKAMOL HUANG Relinquished by: PANKAMOL HUANG Relinquished by:		Date: 3/19/24 1200 Date/Time: 03/20/2024 10:55 Date/Time:		Date/Time:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Copier Temperature(s) °C and Other Remarks: ① 20.1 °C ② 19.3 °C ③ 20.1 °C ④ 19.9 °C ⑤ 66.0 °C ⑥ 66.0 °C		Ver: 01/16/2019			



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-87965-1
SDG Number: 525.2, 533, 537.1

Login Number: 87965
List Number: 1
Creator: Ngo, Theodore

List Source: Eurofins Eaton Analytical Pomona

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

