

ANALYTICAL REPORT

PREPARED FOR

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City & County of Honolulu
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Honolulu, Hawaii 96843

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JOB DESCRIPTION

INTERA - Red-Hill-Incident

JOB NUMBER

380-137901-1

Eurofins Eaton Analytical Pomona

Job Notes

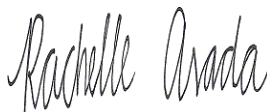
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The test results in this report relate only to the samples as received by the laboratory and meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval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

Compliance Statement

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

Authorization



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Definitions/Glossary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Qualifiers

LCMS

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

Glossary

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

Case Narrative

Client: City & County of Honolulu
Project: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Job ID: 380-137901-1

Eurofins Eaton Analytical Pomona

Job Narrative 380-137901-1

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 and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided 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 sample was received on 2/27/2025 10:00 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C.

PFAS

Method 1633_DOD5: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-836961.

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

Eurofins Eaton Analytical Pomona

Detection Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-137901-1

No Detections.

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

Client Sample Results

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-137901-1

Date Collected: 02/26/25 10:30

Matrix: Water

Date Received: 02/27/25 10:00

Method: EPA Draft 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<7.1		7.1	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluoropentanoic acid (PFPeA)	<3.6		3.6	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorohexanoic acid (PFHxA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluoroheptanoic acid (PFHpA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorooctanoic acid (PFOA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorononanoic acid (PFNA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorodecanoic acid (PFDA)	<2.9		2.9	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorotridecanoic acid (PFTTrDA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorotetradecanoic acid (PFTeDA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorobutanesulfonic acid (PFBS)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorohexanesulfonic acid (PFHxS)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluoroheptanesulfonic acid (PFHpS)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorooctanesulfonic acid (PFOS)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<7.1		7.1	ng/L		03/03/25 12:12	03/04/25 05:16	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<7.1		7.1	ng/L		03/03/25 12:12	03/04/25 05:16	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<7.1		7.1	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluorooctanesulfonamide (PFOSA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
N-methylperfluorooctane sulfonamide (NMeFOSA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
N-ethylperfluorooctane sulfonamide (NEtFOSA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.8		1.8	ng/L		03/03/25 12:12	03/04/25 05:16	1
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	<18		18	ng/L		03/03/25 12:12	03/04/25 05:16	1
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	<18		18	ng/L		03/03/25 12:12	03/04/25 05:16	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<7.1		7.1	ng/L		03/03/25 12:12	03/04/25 05:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<7.1		7.1	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<3.6		3.6	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<3.6		3.6	ng/L		03/03/25 12:12	03/04/25 05:16	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<3.6		3.6	ng/L		03/03/25 12:12	03/04/25 05:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	<7.1		7.1	ng/L		03/03/25 12:12	03/04/25 05:16	1

Eurofins Eaton Analytical Pomona

Client Sample Results

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-137901-1

Date Collected: 02/26/25 10:30

Matrix: Water

Date Received: 02/27/25 10:00

Method: EPA Draft 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	<7.1		7.1	ng/L		03/03/25 12:12	03/04/25 05:16	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEISA)	<3.6		3.6	ng/L		03/03/25 12:12	03/04/25 05:16	1
3-Perfluoropropylpropanoic acid (3:3 FTCA)	<8.9		8.9	ng/L		03/03/25 12:12	03/04/25 05:16	1
3-Perfluoropentylpropanoic acid (5:3 FTCA)	<45		45	ng/L		03/03/25 12:12	03/04/25 05:16	1
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	<45		45	ng/L		03/03/25 12:12	03/04/25 05:16	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C4 PFBA	85.5		5 - 130			03/03/25 12:12	03/04/25 05:16	1
13C5 PFPeA	89.1		40 - 130			03/03/25 12:12	03/04/25 05:16	1
13C5 PFHxA	85.1		40 - 130			03/03/25 12:12	03/04/25 05:16	1
13C4 PFHpA	82.3		40 - 130			03/03/25 12:12	03/04/25 05:16	1
13C8 PFOA	80.1		40 - 130			03/03/25 12:12	03/04/25 05:16	1
13C9 PFNA	84.0		40 - 130			03/03/25 12:12	03/04/25 05:16	1
13C6 PFDA	87.3		40 - 130			03/03/25 12:12	03/04/25 05:16	1
13C7 PFUnA	80.6		30 - 130			03/03/25 12:12	03/04/25 05:16	1
13C2 PFDoA	85.1		10 - 130			03/03/25 12:12	03/04/25 05:16	1
13C2 PFTeDA	75.1		10 - 130			03/03/25 12:12	03/04/25 05:16	1
13C3 PFBS	87.3		40 - 135			03/03/25 12:12	03/04/25 05:16	1
13C3 PFHxS	79.7		40 - 130			03/03/25 12:12	03/04/25 05:16	1
13C8 PFOS	84.5		40 - 130			03/03/25 12:12	03/04/25 05:16	1
13C8 PFOSA	79.4		40 - 130			03/03/25 12:12	03/04/25 05:16	1
d3-NMeFOSAA	75.5		40 - 170			03/03/25 12:12	03/04/25 05:16	1
d5-NEtFOSAA	79.6		25 - 135			03/03/25 12:12	03/04/25 05:16	1
13C2 4:2 FTS	76.7		40 - 200			03/03/25 12:12	03/04/25 05:16	1
13C2 6:2 FTS	81.8		40 - 200			03/03/25 12:12	03/04/25 05:16	1
13C2 8:2 FTS	67.7		40 - 300			03/03/25 12:12	03/04/25 05:16	1
13C3 HFPO-DA	87.6		40 - 130			03/03/25 12:12	03/04/25 05:16	1
d7-N-MeFOSE-M	74.2		10 - 130			03/03/25 12:12	03/04/25 05:16	1
d9-N-EtFOSE-M	75.0		10 - 130			03/03/25 12:12	03/04/25 05:16	1
d5-NEtPFOSA	71.6		10 - 130			03/03/25 12:12	03/04/25 05:16	1
d3-NMePFOSA	72.4		10 - 130			03/03/25 12:12	03/04/25 05:16	1

Action Limit Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-137901-1

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			
Perfluorooctanoic acid (PFOA)	<1.8		ng/L	4	1.8	Draft 1633	Total/NA
Perfluorononanoic acid (PFNA)	<1.8		ng/L	10	1.8	Draft 1633	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<1.8		ng/L	10	1.8	Draft 1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<1.8		ng/L	4	1.8	Draft 1633	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<7.1		ng/L	10	7.1	Draft 1633	Total/NA

Isotope Dilution Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Method: Draft 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (5-130)	PFPeA (40-130)	13C5PHA (40-130)	C4PFHA (40-130)	C8PFOA (40-130)	C9PFNA (40-130)	C6PFDA (40-130)	13C7PUA (30-130)
380-137901-1	BWS2253-J1-AQ	85.5	89.1	85.1	82.3	80.1	84.0	87.3	80.6
LCS 320-836961/3-A	Lab Control Sample	92.1	92.3	88.2	85.0	91.8	92.7	92.7	87.0
LCSD 320-836961/4-A	Lab Control Sample Dup	89.8	91.2	85.1	83.9	83.3	90.9	84.8	79.5
LLCS 320-836961/2-A	Lab Control Sample	90.1	91.9	84.2	86.8	82.3	88.8	89.4	79.3
MB 320-836961/1-A	Method Blank	90.8	92.4	85.6	89.5	88.8	99.7	90.3	87.3

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDaA (10-130)	PFTDA (10-130)	C3PFBS (40-135)	C3PFHS (40-130)	C8PFOS (40-130)	PFOSA (40-130)	d3NMFOS (40-170)	d5NEFOS (25-135)
380-137901-1	BWS2253-J1-AQ	85.1	75.1	87.3	79.7	84.5	79.4	75.5	79.6
LCS 320-836961/3-A	Lab Control Sample	92.2	86.4	89.4	90.6	87.5	87.2	81.3	87.7
LCSD 320-836961/4-A	Lab Control Sample Dup	95.8	92.0	96.0	88.7	83.1	85.5	77.8	77.2
LLCS 320-836961/2-A	Lab Control Sample	85.8	83.7	85.7	86.7	85.5	76.6	73.4	80.3
MB 320-836961/1-A	Method Blank	88.2	90.1	90.0	93.0	82.8	81.1	72.6	81.3

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M242FTS (40-200)	M262FTS (40-200)	M282FTS (40-300)	HFPODA (40-130)	NMFM (10-130)	NEFM (10-130)	d5NPFSA (10-130)	d3NMFSA (10-130)
380-137901-1	BWS2253-J1-AQ	76.7	81.8	67.7	87.6	74.2	75.0	71.6	72.4
LCS 320-836961/3-A	Lab Control Sample	77.6	89.5	78.0	92.1	87.2	85.5	83.2	79.7
LCSD 320-836961/4-A	Lab Control Sample Dup	83.6	80.4	79.7	92.2	90.0	88.0	79.8	77.9
LLCS 320-836961/2-A	Lab Control Sample	73.5	73.7	71.7	93.2	76.2	77.0	70.8	70.2
MB 320-836961/1-A	Method Blank	76.7	85.4	76.8	98.7	79.2	76.5	72.3	65.4

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDaA = 13C2 PFDaA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 PFOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = 13C2 4:2 FTS
M262FTS = 13C2 6:2 FTS
M282FTS = 13C2 8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA

QC Sample Results

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Method: Draft 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Lab Sample ID: MB 320-836961/1-A

Matrix: Water

Analysis Batch: 837147

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 836961

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<8.0		8.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluoropentanoic acid (PFPeA)	<4.0		4.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorodecanoic acid (PFDA)	<3.2		3.2	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorotetradecanoic acid (PFTeDA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<8.0		8.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<8.0		8.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<8.0		8.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluorooctanesulfonamide (PFOSA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
N-methylperfluorooctane sulfonamide (NMeFOSA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
N-ethylperfluorooctane sulfonamide (NEtFOSA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	<20		20	ng/L		03/03/25 12:12	03/03/25 21:05	1
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	<20		20	ng/L		03/03/25 12:12	03/03/25 21:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<8.0		8.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<8.0		8.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<4.0		4.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<4.0		4.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<4.0		4.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	<8.0		8.0	ng/L		03/03/25 12:12	03/03/25 21:05	1

Eurofins Eaton Analytical Pomona

QC Sample Results

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Method: Draft 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 320-836961/1-A

Matrix: Water

Analysis Batch: 837147

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 836961

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	<8.0		8.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<4.0		4.0	ng/L		03/03/25 12:12	03/03/25 21:05	1
3-Perfluoropropylpropanoic acid (3:3 FTCA)	<10		10	ng/L		03/03/25 12:12	03/03/25 21:05	1
3-Perfluoropentylpropanoic acid (5:3 FTCA)	<50		50	ng/L		03/03/25 12:12	03/03/25 21:05	1
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	<50		50	ng/L		03/03/25 12:12	03/03/25 21:05	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	90.8		5 - 130	03/03/25 12:12	03/03/25 21:05	1
13C5 PFPeA	92.4		40 - 130	03/03/25 12:12	03/03/25 21:05	1
13C5 PFHxA	85.6		40 - 130	03/03/25 12:12	03/03/25 21:05	1
13C4 PFHpA	89.5		40 - 130	03/03/25 12:12	03/03/25 21:05	1
13C8 PFOA	88.8		40 - 130	03/03/25 12:12	03/03/25 21:05	1
13C9 PFNA	99.7		40 - 130	03/03/25 12:12	03/03/25 21:05	1
13C6 PFDA	90.3		40 - 130	03/03/25 12:12	03/03/25 21:05	1
13C7 PFUnA	87.3		30 - 130	03/03/25 12:12	03/03/25 21:05	1
13C2 PFDoA	88.2		10 - 130	03/03/25 12:12	03/03/25 21:05	1
13C2 PFTeDA	90.1		10 - 130	03/03/25 12:12	03/03/25 21:05	1
13C3 PFBS	90.0		40 - 135	03/03/25 12:12	03/03/25 21:05	1
13C3 PFHxS	93.0		40 - 130	03/03/25 12:12	03/03/25 21:05	1
13C8 PFOS	82.8		40 - 130	03/03/25 12:12	03/03/25 21:05	1
13C8 PFOSA	81.1		40 - 130	03/03/25 12:12	03/03/25 21:05	1
d3-NMeFOSAA	72.6		40 - 170	03/03/25 12:12	03/03/25 21:05	1
d5-NEtFOSAA	81.3		25 - 135	03/03/25 12:12	03/03/25 21:05	1
13C2 4:2 FTS	76.7		40 - 200	03/03/25 12:12	03/03/25 21:05	1
13C2 6:2 FTS	85.4		40 - 200	03/03/25 12:12	03/03/25 21:05	1
13C2 8:2 FTS	76.8		40 - 300	03/03/25 12:12	03/03/25 21:05	1
13C3 HFPO-DA	98.7		40 - 130	03/03/25 12:12	03/03/25 21:05	1
d7-N-MeFOSE-M	79.2		10 - 130	03/03/25 12:12	03/03/25 21:05	1
d9-N-EtFOSE-M	76.5		10 - 130	03/03/25 12:12	03/03/25 21:05	1
d5-NEtPFOSA	72.3		10 - 130	03/03/25 12:12	03/03/25 21:05	1
d3-NMePFOSA	65.4		10 - 130	03/03/25 12:12	03/03/25 21:05	1

Lab Sample ID: LCS 320-836961/3-A

Matrix: Water

Analysis Batch: 837147

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 836961

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	128	134		ng/L		104	70 - 140
Perfluoropentanoic acid (PFPeA)	64.0	62.2		ng/L		97	65 - 135
Perfluorohexanoic acid (PFHxA)	32.0	34.7		ng/L		108	70 - 145
Perfluoroheptanoic acid (PFHpA)	32.0	35.7		ng/L		112	70 - 150
Perfluorooctanoic acid (PFOA)	32.0	38.3		ng/L		120	70 - 150
Perfluorononanoic acid (PFNA)	32.0	32.4		ng/L		101	70 - 150
Perfluorodecanoic acid (PFDA)	32.0	35.1		ng/L		110	70 - 140

Eurofins Eaton Analytical Pomona

QC Sample Results

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Method: Draft 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 320-836961/3-A

Matrix: Water

Analysis Batch: 837147

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 836961

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	32.0	32.2		ng/L		101	70 - 145
Perfluorododecanoic acid (PFDoA)	32.0	34.3		ng/L		107	70 - 140
Perfluorotridecanoic acid (PFTrDA)	32.0	33.4		ng/L		104	65 - 140
Perfluorotetradecanoic acid (PFTeDA)	32.0	34.7		ng/L		108	60 - 140
Perfluorobutanesulfonic acid (PFBS)	28.4	28.6		ng/L		101	60 - 145
Perfluoropentanesulfonic acid (PFPeS)	30.1	31.6		ng/L		105	65 - 140
Perfluorohexanesulfonic acid (PFHxS)	29.2	31.0		ng/L		106	65 - 145
Perfluoroheptanesulfonic acid (PFHpS)	30.5	32.6		ng/L		107	70 - 150
Perfluorooctanesulfonic acid (PFOS)	29.8	33.3		ng/L		112	55 - 150
Perfluorononanesulfonic acid (PFNS)	30.8	35.0		ng/L		114	65 - 145
Perfluorodecanesulfonic acid (PFDS)	30.8	33.6		ng/L		109	60 - 145
Perfluorododecanesulfonic acid (PFDoS)	31.0	31.7		ng/L		102	50 - 145
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	134		ng/L		112	70 - 145
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	122	122		ng/L		100	65 - 155
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	123	149		ng/L		121	60 - 150
Perfluorooctanesulfonamide (PFOSA)	32.0	36.2		ng/L		113	70 - 145
N-methylperfluorooctane sulfonamide (NMeFOSA)	32.0	32.8		ng/L		103	60 - 150
N-ethylperfluorooctane sulfonamide (NEtFOSA)	32.0	32.7		ng/L		102	65 - 145
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	32.0	33.2		ng/L		104	50 - 140
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	32.0	31.7		ng/L		99	70 - 145
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	320	330		ng/L		103	70 - 145
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	320	334		ng/L		104	70 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	128	129		ng/L		101	70 - 140
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	121	122		ng/L		101	65 - 145
Perfluoro-3-methoxypropanoic acid (PFMPA)	64.0	70.7		ng/L		110	55 - 140
Perfluoro-4-methoxybutanoic acid (PFMBA)	64.0	65.3		ng/L		102	60 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	64.0	73.1		ng/L		114	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	120	126		ng/L		105	70 - 155

Eurofins Eaton Analytical Pomona

QC Sample Results

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Method: Draft 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 320-836961/3-A

Matrix: Water

Analysis Batch: 837147

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 836961

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	121	127		ng/L		105	55 - 160
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	57.1	59.9		ng/L		105	70 - 140
3-Perfluoropropylpropanoic acid (3:3 FTCA)	160	176		ng/L		110	65 - 130
3-Perfluoropentylpropanoic acid (5:3 FTCA)	799	861		ng/L		108	70 - 135
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	799	888		ng/L		111	50 - 145

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	92.1		5 - 130
13C5 PFPeA	92.3		40 - 130
13C5 PFHxA	88.2		40 - 130
13C4 PFHpA	85.0		40 - 130
13C8 PFOA	91.8		40 - 130
13C9 PFNA	92.7		40 - 130
13C6 PFDA	92.7		40 - 130
13C7 PFUnA	87.0		30 - 130
13C2 PFDoA	92.2		10 - 130
13C2 PFTeDA	86.4		10 - 130
13C3 PFBS	89.4		40 - 135
13C3 PFHxS	90.6		40 - 130
13C8 PFOS	87.5		40 - 130
13C8 PFOSA	87.2		40 - 130
d3-NMeFOSAA	81.3		40 - 170
d5-NEtFOSAA	87.7		25 - 135
13C2 4:2 FTS	77.6		40 - 200
13C2 6:2 FTS	89.5		40 - 200
13C2 8:2 FTS	78.0		40 - 300
13C3 HFPO-DA	92.1		40 - 130
d7-N-MeFOSE-M	87.2		10 - 130
d9-N-EtFOSE-M	85.5		10 - 130
d5-NEtPFOSA	83.2		10 - 130
d3-NMePFOSA	79.7		10 - 130

Lab Sample ID: LCSD 320-836961/4-A

Matrix: Water

Analysis Batch: 837147

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 836961

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	128	131		ng/L		102	70 - 140	2	30
Perfluoropentanoic acid (PFPeA)	64.0	64.7		ng/L		101	65 - 135	4	30
Perfluorohexanoic acid (PFHxA)	32.0	35.2		ng/L		110	70 - 145	1	30
Perfluoroheptanoic acid (PFHpA)	32.0	35.4		ng/L		110	70 - 150	1	30
Perfluorooctanoic acid (PFOA)	32.0	36.2		ng/L		113	70 - 150	5	30
Perfluorononanoic acid (PFNA)	32.0	30.6		ng/L		96	70 - 150	6	30
Perfluorodecanoic acid (PFDA)	32.0	36.4		ng/L		114	70 - 140	4	30

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QC Sample Results

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Method: Draft 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCSD 320-836961/4-A

Matrix: Water

Analysis Batch: 837147

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 836961

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA)	32.0	33.6		ng/L		105	70 - 145	4	30
Perfluorododecanoic acid (PFDoA)	32.0	33.2		ng/L		104	70 - 140	3	30
Perfluorotridecanoic acid (PFTrDA)	32.0	32.3		ng/L		101	65 - 140	3	30
Perfluorotetradecanoic acid (PFTeDA)	32.0	34.0		ng/L		106	60 - 140	2	30
Perfluorobutanesulfonic acid (PFBS)	28.4	27.7		ng/L		98	60 - 145	3	30
Perfluoropentanesulfonic acid (PFPeS)	30.1	33.6		ng/L		112	65 - 140	6	30
Perfluorohexanesulfonic acid (PFHxS)	29.2	32.6		ng/L		112	65 - 145	5	30
Perfluoroheptanesulfonic acid (PFHpS)	30.5	33.1		ng/L		108	70 - 150	1	30
Perfluorooctanesulfonic acid (PFOS)	29.8	32.9		ng/L		111	55 - 150	1	30
Perfluorononanesulfonic acid (PFNS)	30.8	35.7		ng/L		116	65 - 145	2	30
Perfluorodecanesulfonic acid (PFDS)	30.8	33.1		ng/L		107	60 - 145	2	30
Perfluorododecanesulfonic acid (PFDoS)	31.0	34.2		ng/L		110	50 - 145	8	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	128		ng/L		106	70 - 145	5	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	122	133		ng/L		109	65 - 155	8	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	123	152		ng/L		124	60 - 150	2	30
Perfluorooctanesulfonamide (PFOSA)	32.0	35.3		ng/L		110	70 - 145	3	30
N-methylperfluorooctane sulfonamide (NMeFOSA)	32.0	33.1		ng/L		103	60 - 150	1	30
N-ethylperfluorooctane sulfonamide (NEtFOSA)	32.0	32.9		ng/L		103	65 - 145	0	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	32.0	31.1		ng/L		97	50 - 140	7	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	32.0	33.5		ng/L		105	70 - 145	5	30
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	320	333		ng/L		104	70 - 145	1	30
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	320	333		ng/L		104	70 - 135	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	128	132		ng/L		103	70 - 140	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	121	126		ng/L		104	65 - 145	3	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	64.0	71.3		ng/L		111	55 - 140	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	64.0	66.8		ng/L		104	60 - 150	2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	64.0	75.2		ng/L		118	50 - 150	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	120	124		ng/L		104	70 - 155	2	30

Eurofins Eaton Analytical Pomona

QC Sample Results

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Method: Draft 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCSD 320-836961/4-A

Matrix: Water

Analysis Batch: 837147

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 836961

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	121	135		ng/L		112	55 - 160	6	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	57.1	60.2		ng/L		105	70 - 140	0	30
3-Perfluoropropylpropanoic acid (3:3 FTCA)	160	178		ng/L		112	65 - 130	1	30
3-Perfluoropentylpropanoic acid (5:3 FTCA)	799	900		ng/L		113	70 - 135	4	30
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	799	919		ng/L		115	50 - 145	3	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C4 PFBA	89.8		5 - 130
13C5 PFPeA	91.2		40 - 130
13C5 PFHxA	85.1		40 - 130
13C4 PFHpA	83.9		40 - 130
13C8 PFOA	83.3		40 - 130
13C9 PFNA	90.9		40 - 130
13C6 PFDA	84.8		40 - 130
13C7 PFUnA	79.5		30 - 130
13C2 PFDoA	95.8		10 - 130
13C2 PFTeDA	92.0		10 - 130
13C3 PFBS	96.0		40 - 135
13C3 PFHxS	88.7		40 - 130
13C8 PFOS	83.1		40 - 130
13C8 PFOSA	85.5		40 - 130
d3-NMeFOSAA	77.8		40 - 170
d5-NEtFOSAA	77.2		25 - 135
13C2 4:2 FTS	83.6		40 - 200
13C2 6:2 FTS	80.4		40 - 200
13C2 8:2 FTS	79.7		40 - 300
13C3 HFPO-DA	92.2		40 - 130
d7-N-MeFOSE-M	90.0		10 - 130
d9-N-EtFOSE-M	88.0		10 - 130
d5-NEtPFOSA	79.8		10 - 130
d3-NMePFOSA	77.9		10 - 130

Lab Sample ID: LLCS 320-836961/2-A

Matrix: Water

Analysis Batch: 837147

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 836961

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	12.8	13.1		ng/L		103	70 - 140
Perfluoropentanoic acid (PFPeA)	6.40	6.00		ng/L		94	65 - 135
Perfluorohexanoic acid (PFHxA)	3.20	3.58		ng/L		112	70 - 145
Perfluoroheptanoic acid (PFHpA)	3.20	3.74		ng/L		117	70 - 150
Perfluorooctanoic acid (PFOA)	3.20	3.74		ng/L		117	70 - 150
Perfluorononanoic acid (PFNA)	3.20	3.36		ng/L		105	70 - 150
Perfluorodecanoic acid (PFDA)	3.20	2.95 J		ng/L		92	70 - 140

Eurofins Eaton Analytical Pomona

QC Sample Results

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Method: Draft 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 320-836961/2-A

Matrix: Water

Analysis Batch: 837147

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 836961

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	3.20	2.94		ng/L		92	70 - 145
Perfluorododecanoic acid (PFDoA)	3.20	3.26		ng/L		102	70 - 140
Perfluorotridecanoic acid (PFTrDA)	3.20	2.94		ng/L		92	65 - 140
Perfluorotetradecanoic acid (PFTeDA)	3.20	3.06		ng/L		96	60 - 140
Perfluorobutanesulfonic acid (PFBS)	2.84	2.93		ng/L		103	60 - 145
Perfluoropentanesulfonic acid (PFPeS)	3.01	3.23		ng/L		107	65 - 140
Perfluorohexanesulfonic acid (PFHxS)	2.92	3.34		ng/L		114	65 - 145
Perfluoroheptanesulfonic acid (PFHpS)	3.05	3.49		ng/L		114	70 - 150
Perfluorooctanesulfonic acid (PFOS)	2.98	2.64		ng/L		89	55 - 150
Perfluorononanesulfonic acid (PFNS)	3.08	2.98		ng/L		97	65 - 145
Perfluorodecanesulfonic acid (PFDS)	3.08	3.13		ng/L		101	60 - 145
Perfluorododecanesulfonic acid (PFDoS)	3.10	2.87		ng/L		92	50 - 145
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	12.0	12.9		ng/L		108	70 - 145
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	12.2	13.3		ng/L		109	65 - 155
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	12.3	14.3		ng/L		116	60 - 150
Perfluorooctanesulfonamide (PFOSA)	3.20	3.49		ng/L		109	70 - 145
N-methylperfluorooctane sulfonamide (NMeFOSA)	3.20	3.28		ng/L		102	60 - 150
N-ethylperfluorooctane sulfonamide (NEtFOSA)	3.20	3.21		ng/L		100	65 - 145
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	3.20	3.13		ng/L		98	50 - 140
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	3.20	3.30		ng/L		103	70 - 145
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	32.0	32.7		ng/L		102	70 - 145
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	32.0	31.2		ng/L		97	70 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	12.8	11.9		ng/L		93	70 - 140
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	12.1	12.0		ng/L		99	65 - 145
Perfluoro-3-methoxypropanoic acid (PFMPA)	6.40	7.30		ng/L		114	55 - 140
Perfluoro-4-methoxybutanoic acid (PFMBA)	6.40	6.57		ng/L		103	60 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	6.40	7.40		ng/L		116	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	12.0	12.9		ng/L		108	70 - 155

Eurofins Eaton Analytical Pomona

QC Sample Results

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Method: Draft 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 320-836961/2-A

Matrix: Water

Analysis Batch: 837147

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 836961

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	12.1	13.1		ng/L		108	55 - 160
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	5.71	6.22		ng/L		109	70 - 140
3-Perfluoropropylpropanoic acid (3:3 FTCA)	16.0	17.2		ng/L		108	65 - 130
3-Perfluoropentylpropanoic acid (5:3 FTCA)	79.9	89.4		ng/L		112	70 - 135
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	79.9	84.8		ng/L		106	50 - 145

Isotope Dilution	LLCS %Recovery	LLCS Qualifier	LLCS Limits
13C4 PFBA	90.1		5 - 130
13C5 PFPeA	91.9		40 - 130
13C5 PFHxA	84.2		40 - 130
13C4 PFHpA	86.8		40 - 130
13C8 PFOA	82.3		40 - 130
13C9 PFNA	88.8		40 - 130
13C6 PFDA	89.4		40 - 130
13C7 PFUnA	79.3		30 - 130
13C2 PFDoA	85.8		10 - 130
13C2 PFTeDA	83.7		10 - 130
13C3 PFBS	85.7		40 - 135
13C3 PFHxS	86.7		40 - 130
13C8 PFOS	85.5		40 - 130
13C8 PFOSA	76.6		40 - 130
d3-NMeFOSAA	73.4		40 - 170
d5-NEtFOSAA	80.3		25 - 135
13C2 4:2 FTS	73.5		40 - 200
13C2 6:2 FTS	73.7		40 - 200
13C2 8:2 FTS	71.7		40 - 300
13C3 HFPO-DA	93.2		40 - 130
d7-N-MeFOSE-M	76.2		10 - 130
d9-N-EtFOSE-M	77.0		10 - 130
d5-NEtPFOSA	70.8		10 - 130
d3-NMePFOSA	70.2		10 - 130

QC Association Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

LCMS

Prep Batch: 836961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-137901-1	BWS2253-J1-AQ	Total/NA	Water	1633	
MB 320-836961/1-A	Method Blank	Total/NA	Water	1633	
LCS 320-836961/3-A	Lab Control Sample	Total/NA	Water	1633	
LCSD 320-836961/4-A	Lab Control Sample Dup	Total/NA	Water	1633	
LLCS 320-836961/2-A	Lab Control Sample	Total/NA	Water	1633	

Analysis Batch: 837147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-137901-1	BWS2253-J1-AQ	Total/NA	Water	Draft 1633	836961
MB 320-836961/1-A	Method Blank	Total/NA	Water	Draft 1633	836961
LCS 320-836961/3-A	Lab Control Sample	Total/NA	Water	Draft 1633	836961
LCSD 320-836961/4-A	Lab Control Sample Dup	Total/NA	Water	Draft 1633	836961
LLCS 320-836961/2-A	Lab Control Sample	Total/NA	Water	Draft 1633	836961

Lab Chronicle

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Client Sample ID: BWS2253-J1-AQ
Date Collected: 02/26/25 10:30
Date Received: 02/27/25 10:00

Lab Sample ID: 380-137901-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	1633			836961	ERR	EET SAC	03/03/25 12:12
Total/NA	Analysis	Draft 1633		1	837147	C1P	EET SAC	03/04/25 05:16

Laboratory References:
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Laboratory: Eurofins Sacramento

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-27
ANAB	Dept. of Defense ELAP	L2468	01-20-27
ANAB	Dept. of Energy	L2468.01	01-20-27
ANAB	ISO/IEC 17025	L2468	01-20-27
Arizona	State	AZ0708	08-11-25
Arkansas DEQ	State	88-0691	05-18-25
California	State	2897	01-31-26
Colorado	State	CA00044	08-31-25
Florida	NELAP	E87570	06-30-25
Georgia	State	4040	01-29-26
Illinois	NELAP	200060	03-31-25
Kansas	NELAP	E-10375	10-31-25
Louisiana	NELAP	01944	06-30-25
Louisiana (All)	NELAP	01944	06-30-25
Maine	State	CA00004	04-14-26
Minnesota	NELAP	2749448	12-31-25
Nevada	State	CA00044	07-31-25
New Hampshire	NELAP	2997	04-19-25
New Jersey	NELAP	CA005	06-30-25
New York	NELAP	11666	04-01-25
Ohio	State	41252	01-29-26
Oregon	NELAP	4040	01-29-26
Texas	NELAP	T104704399-23-17	05-31-25
US Fish & Wildlife	US Federal Programs	A22139	04-30-25
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442023-16	02-28-26
Virginia	NELAP	460278	03-14-25
Washington	State	C581	05-05-25
West Virginia (DW)	State	9930C	01-31-26
Wisconsin	State	998204680	08-31-25
Wyoming	State Program	8TMS-L	01-28-19 *

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

Eurofins Eaton Analytical Pomona

Method Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Method	Method Description	Protocol	Laboratory
Draft 1633	Per- and Polyfluoroalkyl Substances by LC/MS/MS	EPA	EET SAC
1633	Solid-Phase Extraction (SPE)	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-137901-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-137901-1	BWS2253-J1-AQ	Water	02/26/25 10:30	02/27/25 10:00

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

Chain of Custody Record



380-137901 COC

Client Information Sampler: N. Mattner/J. Joseph/E. Kakone Client Contact: Mr. Erwin Kawata Phone: 808-205-0730 City & County of Honolulu			Lab P.M.: Arada, Rachelle E-Mail: Rachelle.Arada@et.eurofinstus.com PWSID:			Carrier Tracking No(s): State of Origin: Hawaii Page 1 of 1 Job #:			COC No: 380-137901		
Date Requested: TAT Requested (days): Standard Compliance Project: ☐ Yes ☒ No PO #: C20525101 exp 05312023 WO #: 808-748-5066(Tel) Email: ekawata@hbsw.org Project #: 38000861 Project Name: HRS-340E - RED-HILL - INTERA Site: Site J			Date: 2/26/25 Time: 1300 Date/Time: 2/26/25; 1300			Date/Time: 2/26/25 Date/Time: 2/27/25 Date/Time: 2/27/25			Date/Time: 2/27/25 Date/Time: 2/27/25 Date/Time: 2/27/25		
Address: 630 South Beretania Street City: Honolulu State, Zip: HI, 96843 Phone: 808-748-5066(Tel) Email: ekawata@hbsw.org Project #: 38000861 Project Name: HRS-340E - RED-HILL - INTERA Site: Site J			Date: 2/26/25 Time: 1300 Date/Time: 2/26/25; 1300			Date/Time: 2/26/25 Date/Time: 2/27/25 Date/Time: 2/27/25			Date/Time: 2/27/25 Date/Time: 2/27/25 Date/Time: 2/27/25		
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Address: 630 South Beretania Street City: Honolulu State, Zip: HI, 96843 Phone: 808-748-5066(Tel) Email: ekawata@hbsw.org Project #: 38000861 Project Name: HRS-340E - RED-HILL - INTERA Site: Site J			Date: 2/26/25 Time: 1300 Date/Time: 2/26/25; 1300			Date/Time: 2/26/25 Date/Time: 2/27/25 Date/Time: 2/27/25			Date/Time: 2/27/25 Date/Time: 2/27/25 Date/Time: 2/27/25		
Address: 630 South Beretania Street City: Honolulu State, Zip: HI, 96843 Phone: 808-748-5066(Tel) Email: ekawata@hbsw.org Project #: 38000861 Project Name: HRS-340E - RED-HILL - INTERA Site: Site J			Date: 2/26/25 Time: 1300 Date/Time: 2/26/25; 1300			Date/Time: 2/26/25 Date/Time: 2/27/25 Date/Time: 2/27/25			Date/Time: 2/27/25 Date/Time: 2/27/25 Date/Time: 2/27/25		
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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-137901-1

Login Number: 137901

List Source: Eurofins Eaton Analytical Pomona

List Number: 1

Creator: Edrosa, Rey

Question	Answer	Comment
The coolers custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is 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	
CIO4 headspace requirement met (>50% for CA, >30% for other states).	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-137901-1

Login Number: 137901

List Number: 2

Creator: Morazzini, Dominic S

List Source: Eurofins Sacramento

List Creation: 02/27/25 05:01 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal present with no number.
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
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	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	