

# ANALYTICAL REPORT

## PREPARED FOR

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Honolulu, Hawaii 96843

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## JOB DESCRIPTION

INTERA - Red-Hill-Incident

## JOB NUMBER

380-89420-1

# 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: 380-89420-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## 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: 380-89420-1

**Job ID: 380-89420-1**

**Eurofins Eaton Analytical Pomona**

## Job Narrative 380-89420-1

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 4/2/2024 9:19 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.3°C.

### PFAS

Method 533: Internal standard (ISTD) response for the following 533 sample was outside of acceptance limits: (LLCS 810-95782/2-A). 13C3-PFBA (197%), 13C2 PFOA (214%) and 13C4 PFOS (IS) (205%) failed high. Limit 50-150%. The ISTD may have been spiked twice into this sample. There is no volume left to re-extract sample BWS2253-J1-FB (380-89420-2). Data excluded due to this QC failure. Analysis of the FRB is required only if a field sample contains a method analyte or analytes at or above the MRL. Field sample results are ND.

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

# Detection Summary

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

Job ID: 380-89420-1

**Client Sample ID: BWS2253-J1-AQ**

**Lab Sample ID: 380-89420-1**

No Detections.

**Client Sample ID: BWS2253-J1-FB**

**Lab Sample ID: 380-89420-2**

No Detections.

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

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

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

Job ID: 380-89420-1

**Client Sample ID: BWS2253-J1-AQ**

**Lab Sample ID: 380-89420-1**

**Date Collected: 04/01/24 11:00**

**Matrix: Water**

**Date Received: 04/02/24 09:19**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		04/15/24 10:53	04/16/24 21:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C6 PFDA	95		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C5 PFHxA	96		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C4 PFHpA	94		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C8 PFOA	96		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C9 PFNA	100		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C7 PFUnA	92		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C2 PFDoA	90		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C4 PFBA	97		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C5 PFPeA	99		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C3 PFBS	96		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C3 PFHxS	94		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C8 PFOS	95		50 - 200	04/15/24 10:53	04/16/24 21:23	1

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# Client Sample Results

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

Job ID: 380-89420-1

**Client Sample ID: BWS2253-J1-AQ**

**Lab Sample ID: 380-89420-1**

**Date Collected: 04/01/24 11:00**

**Matrix: Water**

**Date Received: 04/02/24 09:19**

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	88		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C2-6:2-FTS	86		50 - 200	04/15/24 10:53	04/16/24 21:23	1
13C2-8:2-FTS	83		50 - 200	04/15/24 10:53	04/16/24 21:23	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafiuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	<2.0		2.0	ng/L		04/08/24 06:21	04/09/24 01:10	1

  

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	98		70 - 130	04/08/24 06:21	04/09/24 01:10	1
13C2 PFDA	100		70 - 130	04/08/24 06:21	04/09/24 01:10	1
d5-NEtFOSAA	103		70 - 130	04/08/24 06:21	04/09/24 01:10	1
13C3 HFPO-DA	93		70 - 130	04/08/24 06:21	04/09/24 01:10	1

**Client Sample ID: BWS2253-J1-FB**

**Lab Sample ID: 380-89420-2**

**Date Collected: 04/01/24 11:00**

**Matrix: Water**

**Date Received: 04/02/24 09:19**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafiuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1

Eurofins Eaton Analytical Pomona



# Client Sample Results

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

Job ID: 380-89420-1

**Client Sample ID: BWS2253-J1-FB**

**Lab Sample ID: 380-89420-2**

**Date Collected: 04/01/24 11:00**

**Matrix: Water**

**Date Received: 04/02/24 09:19**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		04/15/24 07:38	04/16/24 07:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		70 - 130	04/15/24 07:38	04/16/24 07:59	1
13C2 PFDA	91		70 - 130	04/15/24 07:38	04/16/24 07:59	1
d5-NEtFOSAA	93		70 - 130	04/15/24 07:38	04/16/24 07:59	1
13C3 HFPO-DA	88		70 - 130	04/15/24 07:38	04/16/24 07:59	1

# Surrogate Summary

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

Job ID: 380-89420-1

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFHxA	PFDA	d5NEFOS	HFPODA
		(70-130)	(70-130)	(70-130)	(70-130)
380-89420-1	BWS2253-J1-AQ	98	100	103	93
380-89420-1 MS	BWS2253-J1-AQ	98	96	90	94
380-89420-2	BWS2253-J1-FB	88	91	93	88
810-99371-B-5-A DU	Duplicate	96	108	97	96
810-100339-Z-1-A LMS	Matrix Spike	83	98	82	91
810-100358-B-1-A DU	Duplicate	98	99	89	93
LCS 810-94738/3-A	Lab Control Sample	102	100	91	96
LCS 810-95460/7-A	Lab Control Sample	101	99	93	102
LLCS 810-94738/2-A	Lab Control Sample	100	103	100	98
LLCS 810-95460/6-A	Lab Control Sample	93	94	95	88
MBL 810-94738/1-A	Method Blank	96	96	96	93
MBL 810-95460/5-A	Method Blank	94	98	102	92

#### Surrogate Legend

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

d5NEFOS = d5-NEtFOSAA

HFPODA = 13C3 HFPO-DA

# Isotope Dilution Summary

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

Job ID: 380-89420-1

## 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)
380-89420-1	BWS2253-J1-AQ	96	95	96	94	96	100	92	90
810-100514-B-9-A DU	Duplicate	87	80	92	92	87	87	74	69
810-100519-E-2-A LMS	Matrix Spike	88	92	92	88	92	96	87	83
LLCS 810-95496/2-A	Lab Control Sample	90	91	91	92	94	95	90	82
MBL 810-95496/1-A	Method Blank	84	93	85	88	91	97	88	82

		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)
380-89420-1	BWS2253-J1-AQ	97	99	96	94	95	88	86	83
810-100514-B-9-A DU	Duplicate	95	98	94	92	82	172	119	94
810-100519-E-2-A LMS	Matrix Spike	92	95	93	93	93	81	84	85
LLCS 810-95496/2-A	Lab Control Sample	94	96	91	93	93	82	83	86
MBL 810-95496/1-A	Method Blank	91	94	88	93	93	79	81	88

### 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: INTERA - Red-Hill-Incident

Job ID: 380-89420-1

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

**Lab Sample ID: MBL 810-95496/1-A**  
**Matrix: Water**  
**Analysis Batch: 95597**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 95496**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.51		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.45		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.40		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.53		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluorobutanesulfonic acid (PFBS)	<0.42		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluorodecanoic acid (PFDA)	<0.36		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluorododecanoic acid (PFDoA)	<0.35		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluoroheptanoic acid (PFHpA)	<0.40		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluorohexanesulfonic acid (PFHxS)	<0.39		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluorohexanoic acid (PFHxA)	<0.42		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluorononanoic acid (PFNA)	<0.38		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluorooctanesulfonic acid (PFOS)	<0.39		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluoroundecanoic acid (PFUnA)	<0.38		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluorobutanoic acid (PFBA)	<0.52		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.57		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.56		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.68		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.93		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.45		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.32		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.35		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.44		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1
Perfluoropentanesulfonic acid (PFPeS)	<0.37		2.0	ng/L		04/15/24 10:53	04/16/24 17:45	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	84		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C6 PFDA	93		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C5 PFHxA	85		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C4 PFHpA	88		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C8 PFOA	91		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C9 PFNA	97		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C7 PFUnA	88		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C2 PFDoA	82		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C4 PFBA	91		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C5 PFPeA	94		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C3 PFBS	88		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C3 PFHxS	93		50 - 200	04/15/24 10:53	04/16/24 17:45	1

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# QC Sample Results

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

Job ID: 380-89420-1

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

**Lab Sample ID: MBL 810-95496/1-A**  
**Matrix: Water**  
**Analysis Batch: 95597**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 95496**

Isotope Dilution	MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 PFOS	93		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C2-4:2-FTS	79		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C2-6:2-FTS	81		50 - 200	04/15/24 10:53	04/16/24 17:45	1
13C2-8:2-FTS	88		50 - 200	04/15/24 10:53	04/16/24 17:45	1

**Lab Sample ID: LLCS 810-95496/2-A**  
**Matrix: Water**  
**Analysis Batch: 95597**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 95496**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	1.80	J	ng/L		96	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	1.93	J	ng/L		102	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.03		ng/L		101	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.78	1.70	J	ng/L		96	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.16		ng/L		108	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.00		ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.85	J	ng/L		101	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.11		ng/L		105	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.03		ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	1.91	J	ng/L		103	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.12		ng/L		106	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.97	J	ng/L		99	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	1.97	J	ng/L		98	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.92	2.19		ng/L		114	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.88	2.19		ng/L		117	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.90	2.01		ng/L		106	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.13		ng/L		107	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	1.78	1.97	J	ng/L		110	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.08		ng/L		104	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.05		ng/L		103	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.17		ng/L		109	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.91	1.75	J	ng/L		92	50 - 150

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# QC Sample Results

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

Job ID: 380-89420-1

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

**Lab Sample ID: LLCS 810-95496/2-A**  
**Matrix: Water**  
**Analysis Batch: 95597**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 95496**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.82	J	ng/L		97	50 - 150
<b>LLCS LLCS</b>							
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
13C3 HFPO-DA	90		50 - 200				
13C6 PFDA	91		50 - 200				
13C5 PFHxA	91		50 - 200				
13C4 PFHpA	92		50 - 200				
13C8 PFOA	94		50 - 200				
13C9 PFNA	95		50 - 200				
13C7 PFUnA	90		50 - 200				
13C2 PFDoA	82		50 - 200				
13C4 PFBA	94		50 - 200				
13C5 PFPeA	96		50 - 200				
13C3 PFBS	91		50 - 200				
13C3 PFHxS	93		50 - 200				
13C8 PFOS	93		50 - 200				
13C2-4:2-FTS	82		50 - 200				
13C2-6:2-FTS	83		50 - 200				
13C2-8:2-FTS	86		50 - 200				

**Lab Sample ID: 810-100519-E-2-A LMS**  
**Matrix: Water**  
**Analysis Batch: 95597**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 95496**

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		1.79	1.69	J	ng/L		94	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		1.77	1.71	J	ng/L		97	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		1.79	1.83	J	ng/L		102	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		1.90	1.96	J	ng/L		103	50 - 150
Perfluorobutanesulfonic acid (PFBS)	<2.0		1.68	1.65	J	ng/L		98	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		1.90	1.94	J	ng/L		102	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		1.90	1.99	J	ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	<2.0		1.90	1.89	J	ng/L		100	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	<2.0		1.73	1.64	J	ng/L		95	50 - 150
Perfluorohexanoic acid (PFHxA)	<2.0		1.90	1.96	J	ng/L		103	50 - 150
Perfluorononanoic acid (PFNA)	<2.0		1.90	1.93	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	<2.0		1.76	1.81	J	ng/L		103	50 - 150
Perfluorooctanoic acid (PFOA)	<2.0		1.90	1.98	J	ng/L		105	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		1.90	1.94	J	ng/L		103	50 - 150
Perfluorobutanoic acid (PFBA)	<2.0		1.90	1.88	J	ng/L		99	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-89420-1

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

**Lab Sample ID: 810-100519-E-2-A LMS**  
**Matrix: Water**  
**Analysis Batch: 95597**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 95496**

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		1.82	2.16		ng/L		119	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		1.78	1.98	J	ng/L		111	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		1.81	1.93	J	ng/L		107	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		1.90	1.87	J	ng/L		99	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		1.69	1.74	J	ng/L		103	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		1.90	2.03		ng/L		107	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		1.90	1.87	J	ng/L		99	50 - 150
Perfluoropentanoic acid (PFPeA)	<2.0		1.90	1.90	J	ng/L		100	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		1.81	1.74	J	ng/L		96	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	<2.0		1.78	1.69	J	ng/L		95	50 - 150

Isotope Dilution	LMS %Recovery	LMS Qualifier	Limits
13C3 HFPO-DA	88		50 - 200
13C6 PFDA	92		50 - 200
13C5 PFHxA	92		50 - 200
13C4 PFHpA	88		50 - 200
13C8 PFOA	92		50 - 200
13C9 PFNA	96		50 - 200
13C7 PFUnA	87		50 - 200
13C2 PFDoA	83		50 - 200
13C4 PFBA	92		50 - 200
13C5 PFPeA	95		50 - 200
13C3 PFBS	93		50 - 200
13C3 PFHxS	93		50 - 200
13C8 PFOS	93		50 - 200
13C2-4:2-FTS	81		50 - 200
13C2-6:2-FTS	84		50 - 200
13C2-8:2-FTS	85		50 - 200

**Lab Sample ID: 810-100514-B-9-A DU**  
**Matrix: Water**  
**Analysis Batch: 95597**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 95496**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		<2.0		ng/L		NC	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		<2.0		ng/L		NC	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		<2.0		ng/L		NC	30

# QC Sample Results

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

Job ID: 380-89420-1

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

**Lab Sample ID: 810-100514-B-9-A DU**  
**Matrix: Water**  
**Analysis Batch: 95597**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 95496**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Hexafluoropropylene Oxide	<2.0		<2.0		ng/L		NC	30
Dimer Acid (HFPO-DA/GenX)								
Perfluorobutanesulfonic acid (PFBS)	11		11.5		ng/L		5	30
Perfluorodecanoic acid (PFDA)	<2.0		<2.0		ng/L		NC	30
Perfluorododecanoic acid (PFDoA)	<2.0		<2.0		ng/L		NC	30
Perfluoroheptanoic acid (PFHpA)	4.4		4.41		ng/L		0.2	30
Perfluorohexanesulfonic acid (PFHxS)	13		13.7		ng/L		4	30
Perfluorohexanoic acid (PFHxA)	14		14.2		ng/L		2	30
Perfluorononanoic acid (PFNA)	<2.0		<2.0		ng/L		NC	30
Perfluorooctanesulfonic acid (PFOS)	12		13.1		ng/L		10	30
Perfluorooctanoic acid (PFOA)	9.6		9.45		ng/L		2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		<2.0		ng/L		NC	30
Perfluorobutanoic acid (PFBA)	11		11.8		ng/L		4	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		<2.0		ng/L		NC	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		<2.0		ng/L		NC	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		<2.0		ng/L		NC	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		<2.0		ng/L		NC	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		<2.0		ng/L		NC	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		<2.0		ng/L		NC	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		<2.0		ng/L		NC	30
Perfluoropentanoic acid (PFPeA)	13		13.5		ng/L		3	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		<2.0		ng/L		NC	30
Perfluoropentanesulfonic acid (PFPeS)	2.1		2.19		ng/L		3	30

Isotope Dilution	DU DU		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	87		50 - 200
13C6 PFDA	80		50 - 200
13C5 PFHxA	92		50 - 200
13C4 PFHpA	92		50 - 200
13C8 PFOA	87		50 - 200
13C9 PFNA	87		50 - 200
13C7 PFUnA	74		50 - 200
13C2 PFDoA	69		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	98		50 - 200
13C3 PFBS	94		50 - 200
13C3 PFHxS	92		50 - 200
13C8 PFOS	82		50 - 200



# QC Sample Results

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

Job ID: 380-89420-1

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

**Lab Sample ID: 810-100514-B-9-A DU**  
**Matrix: Water**  
**Analysis Batch: 95597**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 95496**

Isotope Dilution	DU DU		Limits
	%Recovery	Qualifier	
13C2-4:2-FTS	172		50 - 200
13C2-6:2-FTS	119		50 - 200
13C2-8:2-FTS	94		50 - 200

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

**Lab Sample ID: MBL 810-94738/1-A**  
**Matrix: Water**  
**Analysis Batch: 94785**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 94738**

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.64		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.64		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.49		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.62		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Perfluorobutanesulfonic acid (PFBS)	<0.71		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Perfluorodecanoic acid (PFDA)	<0.60		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Perfluorododecanoic acid (PFDoA)	<0.63		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Perfluoroheptanoic acid (PFHpA)	<0.52		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Perfluorohexanesulfonic acid (PFHxS)	<0.44		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Perfluorohexanoic acid (PFHxA)	<0.63		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Perfluorononanoic acid (PFNA)	<0.48		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Perfluorooctanesulfonic acid (PFOS)	<0.53		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Perfluorooctanoic acid (PFOA)	<0.50		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Perfluoroundecanoic acid (PFUnA)	<0.63		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Perfluorotetradecanoic acid (PFTA)	<0.65		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
Perfluorotridecanoic acid (PFTrDA)	<0.60		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	<0.51		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	<0.62		2.0	ng/L		04/08/24 06:21	04/09/24 00:39	1

Surrogate	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	96		70 - 130	04/08/24 06:21	04/09/24 00:39	1
13C2 PFDA	96		70 - 130	04/08/24 06:21	04/09/24 00:39	1
d5-NEtFOSAA	96		70 - 130	04/08/24 06:21	04/09/24 00:39	1
13C3 HFPO-DA	93		70 - 130	04/08/24 06:21	04/09/24 00:39	1

**Lab Sample ID: LCS 810-94738/3-A**  
**Matrix: Water**  
**Analysis Batch: 94785**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 94738**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-89420-1

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

**Lab Sample ID: LCS 810-94738/3-A**  
**Matrix: Water**  
**Analysis Batch: 94785**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 94738**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid(9Cl-PF3ONS)	100	90.4		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	100	97.6		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	100	94.4		ng/L		94	70 - 130
Perfluorobutanesulfonic acid (PFBS)	100	90.1		ng/L		90	70 - 130
Perfluorodecanoic acid (PFDA)	100	100		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	100	88.3		ng/L		88	70 - 130
Perfluoroheptanoic acid (PFHpA)	100	98.4		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	100	94.3		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	100	97.5		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	100	96.1		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	100	88.9		ng/L		89	70 - 130
Perfluorooctanoic acid (PFOA)	100	96.9		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	100	96.0		ng/L		96	70 - 130
Perfluorotetradecanoic acid (PFTA)	100	100		ng/L		100	70 - 130
Perfluorotridecanoic acid (PFTrDA)	100	90.0		ng/L		90	70 - 130
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	100	89.3		ng/L		89	70 - 130
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	100	90.8		ng/L		91	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	102		70 - 130
13C2 PFDA	100		70 - 130
d5-NEtFOSAA	91		70 - 130
13C3 HFPO-DA	96		70 - 130

**Lab Sample ID: LLCS 810-94738/2-A**  
**Matrix: Water**  
**Analysis Batch: 94785**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 94738**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaund ecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.68	J	ng/L		84	50 - 150
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.74	J	ng/L		87	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.88	J	ng/L		94	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.90	J	ng/L		95	50 - 150

# QC Sample Results

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

Job ID: 380-89420-1

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

**Lab Sample ID: LLCS 810-94738/2-A**  
**Matrix: Water**  
**Analysis Batch: 94785**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 94738**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid (PFBS)	2.00	1.87	J	ng/L		94	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.04		ng/L		102	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.81	J	ng/L		90	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.09		ng/L		104	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.83	J	ng/L		91	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.17		ng/L		108	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.88	J	ng/L		94	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.84	J	ng/L		92	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.95	J	ng/L		97	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	1.77	J	ng/L		88	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.01		ng/L		101	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.78	J	ng/L		89	50 - 150

Surrogate	LLCS %Recovery	LLCS Qualifier	LLCS Limits
13C2 PFHxA	100		70 - 130
13C2 PFDA	103		70 - 130
d5-NEtFOSAA	100		70 - 130
13C3 HFPO-DA	98		70 - 130

**Lab Sample ID: 380-89420-1 MS**  
**Matrix: Water**  
**Analysis Batch: 94785**

**Client Sample ID: BWS2253-J1-AQ**  
**Prep Type: Total/NA**  
**Prep Batch: 94738**

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		96.0	92.5		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		96.0	96.9		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		96.0	94.2		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		96.0	92.6		ng/L		96	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		96.0	102		ng/L		106	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		96.0	95.6		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		96.0	82.2		ng/L		86	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		96.0	97.7		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		96.0	99.5		ng/L		104	70 - 130

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# QC Sample Results

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

Job ID: 380-89420-1

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

**Lab Sample ID: 810-99371-B-5-A DU**  
**Matrix: Water**  
**Analysis Batch: 94785**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 94738**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Perfluorotetradecanoic acid (PFTA)	<2.0		<2.0		ng/L		NC	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		<2.0		ng/L		NC	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		<2.0		ng/L		NC	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		<2.0		ng/L		NC	30
Surrogate	DU %Recovery	DU Qualifier	Limits					
13C2 PFHxA	96		70 - 130					
13C2 PFDA	108		70 - 130					
d5-NEtFOSAA	97		70 - 130					
13C3 HFPO-DA	96		70 - 130					

**Lab Sample ID: MBL 810-95460/5-A**  
**Matrix: Water**  
**Analysis Batch: 95540**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 95460**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.64		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.64		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.49		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.62		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Perfluorobutanesulfonic acid (PFBS)	<0.71		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Perfluorodecanoic acid (PFDA)	<0.60		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Perfluorododecanoic acid (PFDoA)	<0.63		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Perfluoroheptanoic acid (PFHpA)	<0.52		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Perfluorohexanesulfonic acid (PFHxS)	<0.44		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Perfluorohexanoic acid (PFHxA)	<0.63		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Perfluorononanoic acid (PFNA)	<0.48		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Perfluorooctanesulfonic acid (PFOS)	<0.53		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Perfluorooctanoic acid (PFOA)	<0.50		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Perfluoroundecanoic acid (PFUnA)	<0.63		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Perfluorotetradecanoic acid (PFTA)	<0.65		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Perfluorotridecanoic acid (PFTrDA)	<0.60		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.51		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.62		2.0	ng/L		04/15/24 07:38	04/16/24 00:56	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		70 - 130			04/15/24 07:38	04/16/24 00:56	1
13C2 PFDA	98		70 - 130			04/15/24 07:38	04/16/24 00:56	1
d5-NEtFOSAA	102		70 - 130			04/15/24 07:38	04/16/24 00:56	1
13C3 HFPO-DA	92		70 - 130			04/15/24 07:38	04/16/24 00:56	1

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# QC Sample Results

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

Job ID: 380-89420-1

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

**Lab Sample ID: LCS 810-95460/7-A**  
**Matrix: Water**  
**Analysis Batch: 95540**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 95460**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	100	82.5		ng/L		82	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	100	86.0		ng/L		86	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	100	89.8		ng/L		90	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	100	87.3		ng/L		87	70 - 130
Perfluorobutanesulfonic acid (PFBS)	100	93.0		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	100	90.9		ng/L		91	70 - 130
Perfluorododecanoic acid (PFDoA)	100	84.8		ng/L		85	70 - 130
Perfluoroheptanoic acid (PFHpA)	100	90.9		ng/L		91	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	100	94.2		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	100	91.5		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	100	88.9		ng/L		89	70 - 130
Perfluorooctanesulfonic acid (PFOS)	100	86.0		ng/L		86	70 - 130
Perfluorooctanoic acid (PFOA)	100	87.8		ng/L		88	70 - 130
Perfluoroundecanoic acid (PFUnA)	100	85.6		ng/L		86	70 - 130
Perfluorotetradecanoic acid (PFTA)	100	84.4		ng/L		84	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	100	78.3		ng/L		78	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	100	80.8		ng/L		81	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	100	84.1		ng/L		84	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	101		70 - 130
13C2 PFDA	99		70 - 130
d5-NEtFOSAA	93		70 - 130
13C3 HFPO-DA	102		70 - 130

**Lab Sample ID: LLCS 810-95460/6-A**  
**Matrix: Water**  
**Analysis Batch: 95540**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 95460**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.38	J	ng/L		69	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.34	J	ng/L		67	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.50	J	ng/L		75	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-89420-1

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

**Lab Sample ID: LLCS 810-95460/6-A**  
**Matrix: Water**  
**Analysis Batch: 95540**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 95460**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.43	J	ng/L		72	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.58	J	ng/L		79	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.48	J	ng/L		74	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.47	J	ng/L		74	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.61	J	ng/L		80	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.54	J	ng/L		77	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.61	J	ng/L		80	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.54	J	ng/L		77	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.51	J	ng/L		76	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.53	J	ng/L		77	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.49	J	ng/L		74	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.56	J	ng/L		78	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	1.41	J	ng/L		70	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.56	J	ng/L		78	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.35	J	ng/L		68	50 - 150

Surrogate	LLCS %Recovery	LLCS Qualifier	LLCS Limits
13C2 PFHxA	93		70 - 130
13C2 PFDA	94		70 - 130
d5-NEtFOSAA	95		70 - 130
13C3 HFPO-DA	88		70 - 130

**Lab Sample ID: 810-100339-Z-1-A LMS**  
**Matrix: Water**  
**Analysis Batch: 95540**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 95460**

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		1.97	1.44	J	ng/L		73	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		1.97	1.50	J	ng/L		76	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		1.97	1.46	J	ng/L		74	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		1.97	1.52	J	ng/L		77	50 - 150
Perfluorobutanesulfonic acid (PFBS)	6.2		1.97	7.56		ng/L		67	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		1.97	1.62	J	ng/L		82	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		1.97	1.31	J	ng/L		67	50 - 150
Perfluoroheptanoic acid (PFHpA)	11		1.97	12.0	4	ng/L		53	50 - 150

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# QC Sample Results

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

Job ID: 380-89420-1

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

**Lab Sample ID: 810-100358-B-1-A DU**  
**Matrix: Water**  
**Analysis Batch: 95540**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 95460**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Perfluoroundecanoic acid (PFUnA)	<2.0		<2.0		ng/L		NC	30
Perfluorotetradecanoic acid (PFTA)	<2.0		<2.0		ng/L		NC	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		<2.0		ng/L		NC	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		<2.0		ng/L		NC	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		<2.0		ng/L		NC	30
<b>DU DU</b>								
Surrogate	%Recovery	Qualifier	Limits					
13C2 PFHxA	98		70 - 130					
13C2 PFDA	99		70 - 130					
d5-NEtFOSAA	89		70 - 130					
13C3 HFPO-DA	93		70 - 130					

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# QC Association Summary

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

Job ID: 380-89420-1

## LCMS

### Prep Batch: 94738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-89420-1	BWS2253-J1-AQ	Total/NA	Water	537.1 DW	
MBL 810-94738/1-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 810-94738/3-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LLCS 810-94738/2-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-89420-1 MS	BWS2253-J1-AQ	Total/NA	Water	537.1 DW	
810-99371-B-5-A DU	Duplicate	Total/NA	Water	537.1 DW	

### Analysis Batch: 94785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-89420-1	BWS2253-J1-AQ	Total/NA	Water	537.1	94738
MBL 810-94738/1-A	Method Blank	Total/NA	Water	537.1	94738
LCS 810-94738/3-A	Lab Control Sample	Total/NA	Water	537.1	94738
LLCS 810-94738/2-A	Lab Control Sample	Total/NA	Water	537.1	94738
380-89420-1 MS	BWS2253-J1-AQ	Total/NA	Water	537.1	94738
810-99371-B-5-A DU	Duplicate	Total/NA	Water	537.1	94738

### Prep Batch: 95460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-89420-2	BWS2253-J1-FB	Total/NA	Water	537.1 DW	
MBL 810-95460/5-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 810-95460/7-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LLCS 810-95460/6-A	Lab Control Sample	Total/NA	Water	537.1 DW	
810-100339-Z-1-A LMS	Matrix Spike	Total/NA	Water	537.1 DW	
810-100358-B-1-A DU	Duplicate	Total/NA	Water	537.1 DW	

### Prep Batch: 95496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-89420-1	BWS2253-J1-AQ	Total/NA	Water	533	
MBL 810-95496/1-A	Method Blank	Total/NA	Water	533	
LLCS 810-95496/2-A	Lab Control Sample	Total/NA	Water	533	
810-100519-E-2-A LMS	Matrix Spike	Total/NA	Water	533	
810-100514-B-9-A DU	Duplicate	Total/NA	Water	533	

### Analysis Batch: 95540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-89420-2	BWS2253-J1-FB	Total/NA	Water	537.1	95460
MBL 810-95460/5-A	Method Blank	Total/NA	Water	537.1	95460
LCS 810-95460/7-A	Lab Control Sample	Total/NA	Water	537.1	95460
LLCS 810-95460/6-A	Lab Control Sample	Total/NA	Water	537.1	95460
810-100339-Z-1-A LMS	Matrix Spike	Total/NA	Water	537.1	95460
810-100358-B-1-A DU	Duplicate	Total/NA	Water	537.1	95460

### Analysis Batch: 95597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-89420-1	BWS2253-J1-AQ	Total/NA	Water	533	95496
MBL 810-95496/1-A	Method Blank	Total/NA	Water	533	95496
LLCS 810-95496/2-A	Lab Control Sample	Total/NA	Water	533	95496
810-100519-E-2-A LMS	Matrix Spike	Total/NA	Water	533	95496
810-100514-B-9-A DU	Duplicate	Total/NA	Water	533	95496

# Lab Chronicle

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

Job ID: 380-89420-1

**Client Sample ID: BWS2253-J1-AQ**

**Lab Sample ID: 380-89420-1**

**Date Collected: 04/01/24 11:00**

**Matrix: Water**

**Date Received: 04/02/24 09:19**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			95496	KB	EA SB	04/15/24 10:53
Total/NA	Analysis	533		1	95597	MH	EA SB	04/16/24 21:23
Total/NA	Prep	537.1 DW			94738	DB	EA SB	04/08/24 06:21
Total/NA	Analysis	537.1		1	94785	BS	EA SB	04/09/24 01:10

**Client Sample ID: BWS2253-J1-FB**

**Lab Sample ID: 380-89420-2**

**Date Collected: 04/01/24 11:00**

**Matrix: Water**

**Date Received: 04/02/24 09:19**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			95460	KM	EA SB	04/15/24 07:38
Total/NA	Analysis	537.1		1	95540	BS	EA SB	04/16/24 07:59

**Laboratory References:**

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



# Accreditation/Certification Summary

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

Job ID: 380-89420-1

## Laboratory: Eurofins Eaton Analytical South Bend

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

Authority	Program	Identification Number	Expiration Date
A2LA	ISO/IEC 17025	5794.01	07-31-24
Alabama	State	40700	06-30-24
Alaska	State	IN00035	06-30-24
Arizona	State	AZ0432	07-26-24
Arkansas (DW)	State	EPA IN00035	06-30-24
California	State	2920	06-30-24
Colorado	State	IN00035	02-28-25
Connecticut	State	PH-0132	03-31-26
Delaware (DW)	State	IN00035	06-30-24
Florida	NELAP	E87775	06-30-24
Georgia (DW)	State	929	06-30-24
Guam	State	23-011R	07-15-24
Hawaii	State	IN035	06-30-24
Idaho (DW)	State	IN00035	12-31-24
IL Dept. of Public Health (Micro)	State	17767	07-01-24
Illinois	NELAP	200001	09-19-24
Indiana	State	C-71-01	12-31-25
Indiana (Micro)	State	M-76-07	12-31-25
Iowa	State	IA Lab #098	11-01-25
Kansas	NELAP	E-10233	10-31-24
Kentucky (DW)	State	KY90056	12-31-24
Louisiana (DW)	State	LA014	12-31-24
Maine	State	IN00035	05-01-25
Maryland	State	209	06-30-24
Massachusetts	State	M-IN035	06-30-24
MI - RadChem Recognition	State	9926	06-30-24
Michigan	State	9926	06-30-24
Minnesota	NELAP	1989807	12-31-24
Mississippi	State	IN00035	06-30-24
Missouri	State	880	09-30-24
Montana (DW)	State	CERT0026	01-01-25
Nebraska	State	NE-OS-05-04	06-30-24
Nevada	State	IN000352024-01	07-31-24
New Hampshire	NELAP	2124	11-05-24
New Jersey	NELAP	IN598	04-18-24
New Mexico	State	IN00035	06-30-24
New York	NELAP	11398	04-01-25
North Carolina (DW)	State	18700	07-31-24
North Dakota	State	R-035	06-30-24
Northern Mariana Islands (DW)	State	IN00035	06-30-24
Ohio	State	87775	06-30-24
Oklahoma	NELAP	D9508	08-31-24
Oregon	NELAP	4156	09-16-24
Pennsylvania	NELAP	68-00466	04-30-25
Puerto Rico	State	IN00035	04-01-25
Rhode Island	State	LAO00343	12-30-24
South Carolina	State	95005001	07-01-25
South Dakota (DW)	State	IN00035	06-30-24
Tennessee	State	TN02973	06-30-24
Texas	NELAP	T104704187-22-16	12-31-24

# Accreditation/Certification Summary

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

Job ID: 380-89420-1

## Laboratory: Eurofins Eaton Analytical South Bend (Continued)

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

Authority	Program	Identification Number	Expiration Date
Texas	TCEQ Water Supply	TX207	06-30-24
USEPA Reg X SDWA	US Federal Programs	IN00035	08-24-24
USEPA UCMR 5	US Federal Programs	IN00035	12-31-25
Utah	NELAP	IN00035	07-31-24
Vermont	State	VT-8775	11-15-24
Virginia	NELAP	460275	03-14-25
Washington	State	C837	01-01-25
West Virginia (DW)	State	9927 C	01-31-25
Wisconsin	State	999766900	08-31-24
Wisconsin (Micro)	State	10121	12-31-24
Wyoming	State	8TMS-L	06-30-24

# Method Summary

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

Job ID: 380-89420-1

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA SB
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA SB
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA SB
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA SB

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

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



# Sample Summary

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

Job ID: 380-89420-1

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<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Received</u>
380-89420-1	BWS2253-J1-AQ	Water	04/01/24 11:00	04/02/24 09:19
380-89420-2	BWS2253-J1-FB	Water	04/01/24 11:00	04/02/24 09:19

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- 16

# Chain of Custody Record



Client Information		Sampler	Lab PM	Carrier/Tracking No(s)	COC No		
Client Contact: Mr. Erwin Kawata City & County of Honolulu		E Kakone, K. Gooding Phone (858)205-0730	Arada, Rachelle E-Mail Rachelle.Arada@et.eurofins.com	State of Origin Hawaii	Page 1 of 1 Job #		
Address: 630 South Beretania Street Honolulu HI, 96843 Phone: 808-748-5066(Tel) Email: ekawata@hbws.org Project Name: HRS-340E - RED-HILL - INTERA Site: Site J		Due Date Requested: TAT Requested (days): Standard Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: C20525101 exp 05312023 WO #: 38002227 SSONW#	Analysis Requested SUBCONTRACT - TPH 8015 Diesel and Motor Oil SUBCONTRACT - TPH 8015 Jet Fuel 6 SUBCONTRACT - TPH 8015 Jet Fuel 8 SUBCONTRACT - 8015 Gas PFAS 553 - All Analytes PFAS 537.1 DW, PREC-537.1 Full List PFAS 1633, PODE, 4933 Std List 4208B (MCP Super Volatiles List 4208B (MCP Super Volatiles List SUBCONTRACT - 5016C SUBCONTRACT - 535.4, PREC (2-Butoxyethanol)	Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecalhydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	Special Instructions/Note: x = testing comes from another container. Subcontract Notes: 625 PAH - Physis 8015 TPH D+M, 8015 C. 8015 gas - EEA POM 8015 Gas - EEA POM 82608 - EEA POM 625.1 - EEA POM PFAS 537.1 & 533 - EEA POM PFAS 1633 - EEA SAC Bill and Report to EEA - Pomona		
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, C=concrete, O=oil, G=Gas, A=Air)	Field Filtered Sample (Yes or No)	Preservation Code	Total Number of Containers
BWS2253-J1-AQ	4/1/24	1100	G	Water	<input checked="" type="checkbox"/>	G	6
BWS2253-J1-FB	4/1/24	1100	G	Water	<input checked="" type="checkbox"/>	G	2
Possible Hazard Identification <input checked="" 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 checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
Empty Kit Relinquished by:							Method of Shipment/FEDEx Priority Overnight: 2728 Q216887
Relinquished by:		Date/Time: 4/1/24 1245	Company: INTERA	Received by: Danni Curtis	Date/Time: 4-2-24 9:19	Company: EEA	
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:	Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: 1.5-0.2=1.3 (630A) Met From		Cooler Temperature(s) °C and Other Remarks		Company:	





# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM:	Carrier Tracking No(e):	GOC No:
Client Contact: Shipping/Receiving		Arada, Rachelle	Arada, Rachelle		380-116639.1
Company: Eurofins Eaton Analytical		Phone:	E-Mail:	State of Origin:	Page:
Address: 110 S Hill Street, South Bend, IN, 46617		574-233-4777 (Tel) 574-233-8207 (Fax)	Rachelle.Arada@et.eurofins.com	Hawaii	Page 1 of 1
Project Name: HRS-340E - RED-HILL - INTERA		Site:	Accreditations Required (See note): State - Hawaii		
Due Date Requested: 4/22/2024		Analysis Requested			
TAT Requested (days):		537.1_DW_PREC/537.1_DW_Prep 537.1 Full List			
PO #:		537.333_Prep All Analytes			
WO #:		Perform MS/MSD (Yes or No)			
Project #: 38002227		Field Filtered Sample (Yes or No)			
SSOW#:		Total Number of Containers			
Sample Date		Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Seawater, Other)	Preservation Code:
4/1/24	11:00 Hawaiian	Water			
4/1/24	11:00 Hawaiian	Water			
Special Instructions/Note:					
BWS2253-J1-AQ (380-89420-1)					30
BWS2253-J1-FB (380-89420-2)					22
					25/2/21
					Client-Provided Sample - Certification
<p>Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte &amp; accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to Eurofins Eaton Analytical, LLC.</p>					
<b>Possible Hazard Identification</b>					
Unconfirmed					
Deliverable Requested: I, II, III, IV, Other (specify)					
Primary Deliverable Rank: 2					
Empty Kit Relinquished by:					
Relinquished by: Raul Ariza					
Relinquished by: Raul Ariza					
Relinquished by:					
Custody Seals Intact: Custody Seal No.:					
Δ Yes Δ No					
<p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</p> <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:					
Received by: Raul Ariza					
Date/Time: 4/3-24 9:00					
Company: Eurofins Eaton Analytical					
Received by: Raul Ariza					
Date/Time: 4/5/24 08:45					
Company: Eurofins Eaton Analytical					
Received by:					
Date/Time:					
Company:					
Cooler Temperature(s) °C and Other Remarks:					



# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-89420-1

**Login Number: 89420**  
**List Number: 1**  
**Creator: Ngo, Theodore**

**List Source: Eurofins Eaton Analytical Pomona**

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



# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-89420-1

**Login Number: 89420**  
**List Number: 2**  
**Creator: Williams, Kameron**

**List Source: Eurofins Eaton Analytical South Bend**  
**List Creation: 04/05/24 01:03 PM**

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	Initial Temp: 3.0; Corrected Temp: 2.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	False	Client provided containers

