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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 310
Honolulu, Hawaii 96843

Generated 12/13/2023 11:59:27 AM Revision 1

JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-42555-1

Eurofins Eaton Analytical Pomona

Job Notes

Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis.

Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

Test results relate only to the sample(s) tested.

Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

This report shall not be reproduced except in full, without the written approval of the laboratory.

This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

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



Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

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12/13/2023 11:59:27 AM
Revision 1



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Definitions/Glossary

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

Job ID: 380-42555-1

Qualifiers

GC/MS Semi VOA

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

GC/MS Semi VOA TICs

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

LCMS

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

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

Glossary

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

Case Narrative

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

Job ID: 380-42555-1

Job ID: 380-42555-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-42555-1

Revision

The report being provided is a revision of the original report sent on 5/25/2023. The report (revision 1) is being revised to: remove Method 533 results with QC failures that deemed the data unreportable.

Comments

EPA 537.1 and EPA 533 are two distinct methods for the analysis of PFAS in drinking water. The analyses are conducted on differing instrumentation, with calibrations, extraction solvents and sample preservatives being dissimilar among the two methods. Therefore it is probable and not unexpected to see the methods having slight variations in analytical results.

No additional comments.

Receipt

The samples were received on 4/5/2023 10:20 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 was 1.7° C.

GC/MS Semi VOA

Method 525.2: The matrix spike (MS) recovery for preparation batch 380-35969 and analytical batch 380-36021 was below control limits for Anthracene, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

LCMS

Method 533: The following QC failures were observed for prep batch 38091 and/or analytical batch 38362: Several IDAs failed outside of method limits for: MBL and MRL. IDA failure in the MBL also caused analyte concentration to be biased high. Some IDAs also failed in sample: MOANALUA WELLS (331-223-TP202) (380-42555-1), AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-42555-2), AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-42555-3), HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-42555-4), FB:MOANALUA WELLS (331-223-TP202) (380-42555-9), FB:AIEA GULCH WELLS P2 (331-202-TP072) (380-42555-10), FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-42555-11) and FB: HALAWA WELLS UNITS 1&2 (331-206-TP065) (380-42555-12). All samples reported in this batch have either passed holding time or have no backup bottle for re-extraction. Samples reported with flags. Results are not acceptable per method and requires resample.

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

Subcontract non-Sister

See attached subcontract report.

Organic Prep

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

Subcontract Work

Methods 8015 Gas (Purgeable) LL (EAL), 8015 LL DRO/MRO/JP5/JP8: These methods were subcontracted to EMAX Laboratories Inc. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method 625 PAH Physis LL (EAL) + TICs: This method was subcontracted to Physis Environmental Laboratories. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

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

Job ID: 380-42555-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)
PWSID Number: HI0000331

Lab Sample ID: 380-42555-1

No Detections.

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

Lab Sample ID: 380-42555-2

No Detections.

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

Lab Sample ID: 380-42555-3

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
PWSID Number: HI0000331

Lab Sample ID: 380-42555-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.2		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.4		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: TB:MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-42555-5

No Detections.

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

Lab Sample ID: 380-42555-6

No Detections.

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

Lab Sample ID: 380-42555-7

No Detections.

Client Sample ID: TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-42555-8

No Detections.

Client Sample ID: FB:MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-42555-9

No Detections.

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

Lab Sample ID: 380-42555-10

No Detections.

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

Lab Sample ID: 380-42555-11

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

Detection Summary

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

Job ID: 380-42555-1

**Client Sample ID: FB: HALAWA WELLS UNITS 1&2
(331-206-TP065)**

Lab Sample ID: 380-42555-12

No Detections.

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This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-42555-1

Date Collected: 04/03/23 10:09

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
2,4'-DDE	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
2,4'-DDT	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
2,4-Dinitrotoluene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
2,6-Dinitrotoluene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
4,4'-DDD	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
4,4'-DDE	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
4,4'-DDT	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Acenaphthene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Acenaphthylene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Acetochlor	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Alachlor	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
alpha-BHC	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
alpha-Chlordane	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Anthracene	ND	F1	0.019	ug/L		04/06/23 16:50	04/07/23 14:15	1
Atrazine	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Benz(a)anthracene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Benzo[a]pyrene	ND		0.019	ug/L		04/06/23 16:50	04/07/23 14:15	1
Benzo[b]fluoranthene	ND	^3+	0.019	ug/L		04/06/23 16:50	04/07/23 14:15	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Benzo[k]fluoranthene	ND		0.019	ug/L		04/06/23 16:50	04/07/23 14:15	1
beta-BHC	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Bromacil	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Butachlor	ND	^3+	0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Butylbenzylphthalate	ND		0.49	ug/L		04/06/23 16:50	04/07/23 14:15	1
Caffeine	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Chlorobenzilate	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Chloroneb	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Chlorothalonil (Draconil, Bravo)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Chlorpyrifos	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Chrysene	ND		0.019	ug/L		04/06/23 16:50	04/07/23 14:15	1
delta-BHC	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Di(2-ethylhexyl)adipate	ND	*+	0.58	ug/L		04/06/23 16:50	04/07/23 14:15	1
Bis(2-ethylhexyl) phthalate	ND		0.58	ug/L		04/06/23 16:50	04/07/23 14:15	1
Diazinon (Qualitative)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Dibenz(a,h)anthracene	ND	^3+	0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Diclorvos (DDVP)	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Dieldrin	ND		0.19	ug/L		04/06/23 16:50	04/07/23 14:15	1
Diethylphthalate	ND		0.49	ug/L		04/06/23 16:50	04/07/23 14:15	1
Dimethylphthalate	ND		0.49	ug/L		04/06/23 16:50	04/07/23 14:15	1
Di-n-butyl phthalate	ND		0.97	ug/L		04/06/23 16:50	04/07/23 14:15	1
Di-n-octyl phthalate	ND	^3+	0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Endosulfan I (Alpha)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Endosulfan II (Beta)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Endosulfan sulfate	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Endrin	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Endrin aldehyde	ND	^3+	0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
EPTC	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Fluoranthene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-42555-1

Date Collected: 04/03/23 10:09

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
gamma-Chlordane	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Heptachlor	ND		0.039	ug/L		04/06/23 16:50	04/07/23 14:15	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Hexachlorobenzene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Indeno[1,2,3-cd]pyrene	ND	^3+	0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Isophorone	ND		0.49	ug/L		04/06/23 16:50	04/07/23 14:15	1
Lindane	ND		0.039	ug/L		04/06/23 16:50	04/07/23 14:15	1
Malathion	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Methoxychlor	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Metolachlor	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Metribuzin	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Molinate	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Naphthalene	ND		0.29	ug/L		04/06/23 16:50	04/07/23 14:15	1
Parathion	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Pendimethalin (Penoxaline)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Total Permethrin (mixed isomers)	ND	^3+	0.19	ug/L		04/06/23 16:50	04/07/23 14:15	1
Phenanthrene	ND		0.039	ug/L		04/06/23 16:50	04/07/23 14:15	1
Propachlor	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Pyrene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Simazine	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Terbacil	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Terbuthylazine	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1
Thiobencarb	ND		0.19	ug/L		04/06/23 16:50	04/07/23 14:15	1
trans-Nonachlor	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:15	1
Trifluralin	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:15	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	04/06/23 16:50	04/07/23 14:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	93		70 - 130	04/06/23 16:50	04/07/23 14:15	1
Triphenylphosphate	109		70 - 130	04/06/23 16:50	04/07/23 14:15	1
Perylene-d12	102		70 - 130	04/06/23 16:50	04/07/23 14:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-42555-1

Date Collected: 04/03/23 10:09

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 14:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	99		70 - 130	04/13/23 15:07	04/15/23 14:33	1
13C2 PFHxA	111		70 - 130	04/13/23 15:07	04/15/23 14:33	1
13C2 PFDA	97		70 - 130	04/13/23 15:07	04/15/23 14:33	1
13C3-GenX	97		70 - 130	04/13/23 15:07	04/15/23 14:33	1

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Acenaphthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Acenaphthylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Biphenyl	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Chrysene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Dibenzothiophene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		04/06/23 00:00	04/17/23 23:04	1
Fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Fluorene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Naphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Perylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Phenanthrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1
Pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 23:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	87		27 - 133	04/06/23 00:00	04/17/23 23:04	1
(d10-Phenanthrene)	90		43 - 129	04/06/23 00:00	04/17/23 23:04	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-42555-1

Date Collected: 04/03/23 10:09

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d12-Chrysene)	86		52 - 144	04/06/23 00:00	04/17/23 23:04	1
(d12-Perylene)	86		36 - 161	04/06/23 00:00	04/17/23 23:04	1
(d8-Naphthalene)	80		25 - 125	04/06/23 00:00	04/17/23 23:04	1

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			04/07/23 14:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	85		60 - 140		04/07/23 14:16	1

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.027		mg/L			04/14/23 18:02	1
JP5	ND	U	0.054		mg/L			04/14/23 18:02	1
JP8	ND	U	0.054		mg/L			04/14/23 18:02	1
MOTOR OIL	ND	U	0.054		mg/L			04/14/23 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	79		60 - 130		04/14/23 18:02	1
HEXACOSANE	89		60 - 130		04/14/23 18:02	1

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

Lab Sample ID: 380-42555-2

Date Collected: 04/03/23 11:52

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
2,4'-DDE	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
2,4'-DDT	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
2,4-Dinitrotoluene	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
2,6-Dinitrotoluene	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
4,4'-DDD	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
4,4'-DDE	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
4,4'-DDT	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Acenaphthene	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Acenaphthylene	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Acetochlor	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Alachlor	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
alpha-BHC	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
alpha-Chlordane	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Anthracene	ND		0.020	ug/L		04/06/23 16:50	04/07/23 14:35	1
Atrazine	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Benz(a)anthracene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Benzo[a]pyrene	ND		0.020	ug/L		04/06/23 16:50	04/07/23 14:35	1
Benzo[b]fluoranthene	ND	^3+	0.020	ug/L		04/06/23 16:50	04/07/23 14:35	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Benzo[k]fluoranthene	ND		0.020	ug/L		04/06/23 16:50	04/07/23 14:35	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-2

Date Collected: 04/03/23 11:52

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
beta-BHC	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Bromacil	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Butachlor	ND	^3+	0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Butylbenzylphthalate	ND		0.49	ug/L		04/06/23 16:50	04/07/23 14:35	1
Caffeine	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Chlorobenzilate	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Chloroneb	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Chlorothalonil (Draconil, Bravo)	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Chlorpyrifos	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Chrysene	ND		0.020	ug/L		04/06/23 16:50	04/07/23 14:35	1
delta-BHC	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Di(2-ethylhexyl)adipate	ND	*+	0.59	ug/L		04/06/23 16:50	04/07/23 14:35	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		04/06/23 16:50	04/07/23 14:35	1
Diazinon (Qualitative)	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Dibenz(a,h)anthracene	ND	^3+	0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Diclorvos (DDVP)	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Dieldrin	ND		0.20	ug/L		04/06/23 16:50	04/07/23 14:35	1
Diethylphthalate	ND		0.49	ug/L		04/06/23 16:50	04/07/23 14:35	1
Dimethylphthalate	ND		0.49	ug/L		04/06/23 16:50	04/07/23 14:35	1
Di-n-butyl phthalate	ND		0.98	ug/L		04/06/23 16:50	04/07/23 14:35	1
Di-n-octyl phthalate	ND	^3+	0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Endosulfan I (Alpha)	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Endosulfan II (Beta)	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Endosulfan sulfate	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Endrin	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Endrin aldehyde	ND	^3+	0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
EPTC	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Fluoranthene	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Fluorene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
gamma-Chlordane	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Heptachlor	ND		0.039	ug/L		04/06/23 16:50	04/07/23 14:35	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Hexachlorobenzene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Indeno[1,2,3-cd]pyrene	ND	^3+	0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Isophorone	ND		0.49	ug/L		04/06/23 16:50	04/07/23 14:35	1
Lindane	ND		0.039	ug/L		04/06/23 16:50	04/07/23 14:35	1
Malathion	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Methoxychlor	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Metolachlor	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Metribuzin	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Molinate	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Naphthalene	ND		0.29	ug/L		04/06/23 16:50	04/07/23 14:35	1
Parathion	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Pendimethalin (Penoxaline)	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Total Permethrin (mixed isomers)	ND	^3+	0.20	ug/L		04/06/23 16:50	04/07/23 14:35	1
Phenanthrene	ND		0.039	ug/L		04/06/23 16:50	04/07/23 14:35	1
Propachlor	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-2

Date Collected: 04/03/23 11:52

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Simazine	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Terbacil	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Terbutylazine	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1
Thiobencarb	ND		0.20	ug/L		04/06/23 16:50	04/07/23 14:35	1
trans-Nonachlor	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:35	1
Trifluralin	ND		0.098	ug/L		04/06/23 16:50	04/07/23 14:35	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	0.86	T J	ug/L		7.09	N/A	04/06/23 16:50	04/07/23 14:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	91		70 - 130	04/06/23 16:50	04/07/23 14:35	1
Triphenylphosphate	105		70 - 130	04/06/23 16:50	04/07/23 14:35	1
Perylene-d12	103		70 - 130	04/06/23 16:50	04/07/23 14:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	99		70 - 130	04/12/23 11:00	04/15/23 13:04	1
13C2 PFHxA	115		70 - 130	04/12/23 11:00	04/15/23 13:04	1
13C2 PFDA	104		70 - 130	04/12/23 11:00	04/15/23 13:04	1
13C3-GenX	103		70 - 130	04/12/23 11:00	04/15/23 13:04	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-2

Date Collected: 04/03/23 11:52

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Acenaphthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Acenaphthylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Biphenyl	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Chrysene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Dibenzothiophene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		04/06/23 00:00	04/18/23 00:49	1
Fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Fluorene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Naphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Perylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Phenanthrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1
Pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 00:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	86		27 - 133	04/06/23 00:00	04/18/23 00:49	1
(d10-Phenanthrene)	89		43 - 129	04/06/23 00:00	04/18/23 00:49	1
(d12-Chrysene)	87		52 - 144	04/06/23 00:00	04/18/23 00:49	1
(d12-Perylene)	87		36 - 161	04/06/23 00:00	04/18/23 00:49	1
(d8-Naphthalene)	77		25 - 125	04/06/23 00:00	04/18/23 00:49	1

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			04/07/23 16:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	86		60 - 140		04/07/23 16:08	1

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.026		mg/L			04/14/23 18:21	1
JP5	ND	U	0.052		mg/L			04/14/23 18:21	1
JP8	ND	U	0.052		mg/L			04/14/23 18:21	1
MOTOR OIL	ND	U	0.052		mg/L			04/14/23 18:21	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-2

Date Collected: 04/03/23 11:52
Date Received: 04/05/23 10:20

Matrix: Drinking Water
PWSID Number: HI0000331

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	81		60 - 130		04/14/23 18:21	1
HEXACOSANE	101		60 - 130		04/14/23 18:21	1

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

Lab Sample ID: 380-42555-3

Date Collected: 04/03/23 11:07
Date Received: 04/05/23 10:20

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
2,4'-DDE	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
2,4'-DDT	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
2,4-Dinitrotoluene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
2,6-Dinitrotoluene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
4,4'-DDD	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
4,4'-DDE	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
4,4'-DDT	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Acenaphthene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Acenaphthylene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Acetochlor	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Alachlor	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
alpha-BHC	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
alpha-Chlordane	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Anthracene	ND		0.019	ug/L		04/06/23 16:50	04/07/23 14:56	1
Atrazine	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Benz(a)anthracene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Benzo[a]pyrene	ND		0.019	ug/L		04/06/23 16:50	04/07/23 14:56	1
Benzo[b]fluoranthene	ND	^3+	0.019	ug/L		04/06/23 16:50	04/07/23 14:56	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Benzo[k]fluoranthene	ND		0.019	ug/L		04/06/23 16:50	04/07/23 14:56	1
beta-BHC	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Bromacil	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Butachlor	ND	^3+	0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Butylbenzylphthalate	ND		0.49	ug/L		04/06/23 16:50	04/07/23 14:56	1
Caffeine	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Chlorobenzilate	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Chloroneb	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Chlorothalonil (Draconil, Bravo)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Chlorpyrifos	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Chrysene	ND		0.019	ug/L		04/06/23 16:50	04/07/23 14:56	1
delta-BHC	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Di(2-ethylhexyl)adipate	ND	*+	0.58	ug/L		04/06/23 16:50	04/07/23 14:56	1
Bis(2-ethylhexyl) phthalate	ND		0.58	ug/L		04/06/23 16:50	04/07/23 14:56	1
Diazinon (Qualitative)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Dibenz(a,h)anthracene	ND	^3+	0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Diclorvos (DDVP)	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Dieldrin	ND		0.19	ug/L		04/06/23 16:50	04/07/23 14:56	1
Diethylphthalate	ND		0.49	ug/L		04/06/23 16:50	04/07/23 14:56	1

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Client Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-3

Date Collected: 04/03/23 11:07

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dimethylphthalate	ND		0.49	ug/L		04/06/23 16:50	04/07/23 14:56	1
Di-n-butyl phthalate	ND		0.97	ug/L		04/06/23 16:50	04/07/23 14:56	1
Di-n-octyl phthalate	ND	^3+	0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Endosulfan I (Alpha)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Endosulfan II (Beta)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Endosulfan sulfate	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Endrin	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Endrin aldehyde	ND	^3+	0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
EPTC	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Fluoranthene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Fluorene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
gamma-Chlordane	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Heptachlor	ND		0.039	ug/L		04/06/23 16:50	04/07/23 14:56	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Hexachlorobenzene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Indeno[1,2,3-cd]pyrene	ND	^3+	0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Isophorone	ND		0.49	ug/L		04/06/23 16:50	04/07/23 14:56	1
Lindane	ND		0.039	ug/L		04/06/23 16:50	04/07/23 14:56	1
Malathion	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Methoxychlor	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Metolachlor	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Metribuzin	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Molinate	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Naphthalene	ND		0.29	ug/L		04/06/23 16:50	04/07/23 14:56	1
Parathion	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Pendimethalin (Penoxaline)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Total Permethrin (mixed isomers)	ND	^3+	0.19	ug/L		04/06/23 16:50	04/07/23 14:56	1
Phenanthrene	ND		0.039	ug/L		04/06/23 16:50	04/07/23 14:56	1
Propachlor	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Pyrene	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Simazine	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Terbacil	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Terbutylazine	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1
Thiobencarb	ND		0.19	ug/L		04/06/23 16:50	04/07/23 14:56	1
trans-Nonachlor	ND		0.049	ug/L		04/06/23 16:50	04/07/23 14:56	1
Trifluralin	ND		0.097	ug/L		04/06/23 16:50	04/07/23 14:56	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	04/06/23 16:50	04/07/23 14:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	90		70 - 130	04/06/23 16:50	04/07/23 14:56	1
Triphenylphosphate	110		70 - 130	04/06/23 16:50	04/07/23 14:56	1
Perylene-d12	100		70 - 130	04/06/23 16:50	04/07/23 14:56	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-3

Date Collected: 04/03/23 11:07

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
N-methylperfluorooctanesulfonamide cetic acid (NMeFOSAA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Perfluorotridecanoic acid (PFTTrDA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	99		70 - 130			04/12/23 11:00	04/15/23 13:14	1
13C2 PFHxA	108		70 - 130			04/12/23 11:00	04/15/23 13:14	1
13C2 PFDA	100		70 - 130			04/12/23 11:00	04/15/23 13:14	1
13C3-GenX	103		70 - 130			04/12/23 11:00	04/15/23 13:14	1

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Acenaphthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Acenaphthylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Biphenyl	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Chrysene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-3

Date Collected: 04/03/23 11:07

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzo[a,h]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Dibenzothiophene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		04/06/23 00:00	04/18/23 02:33	1
Fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Fluorene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Naphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Perylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Phenanthrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1
Pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 02:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	85		27 - 133	04/06/23 00:00	04/18/23 02:33	1
(d10-Phenanthrene)	88		43 - 129	04/06/23 00:00	04/18/23 02:33	1
(d12-Chrysene)	87		52 - 144	04/06/23 00:00	04/18/23 02:33	1
(d12-Perylene)	85		36 - 161	04/06/23 00:00	04/18/23 02:33	1
(d8-Naphthalene)	77		25 - 125	04/06/23 00:00	04/18/23 02:33	1

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			04/07/23 16:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	87		60 - 140		04/07/23 16:46	1

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			04/14/23 18:39	1
JP5	ND	U	0.050		mg/L			04/14/23 18:39	1
JP8	ND	U	0.050		mg/L			04/14/23 18:39	1
MOTOR OIL	ND	U	0.050		mg/L			04/14/23 18:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	71		60 - 130		04/14/23 18:39	1
HEXACOSANE	89		60 - 130		04/14/23 18:39	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)

Lab Sample ID: 380-42555-4

Date Collected: 04/03/23 10:30

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
2,4'-DDE	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
2,4'-DDT	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
2,4-Dinitrotoluene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
2,6-Dinitrotoluene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
4,4'-DDD	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
4,4'-DDE	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-42555-4

Date Collected: 04/03/23 10:30

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Acenaphthene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Acenaphthylene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Acetochlor	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Alachlor	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
alpha-BHC	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
alpha-Chlordane	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Anthracene	ND		0.019	ug/L		04/06/23 16:50	04/07/23 15:36	1
Atrazine	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Benz(a)anthracene	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Benzo[a]pyrene	ND		0.019	ug/L		04/06/23 16:50	04/07/23 15:36	1
Benzo[b]fluoranthene	ND	^3+	0.019	ug/L		04/06/23 16:50	04/07/23 15:36	1
Benzo[g,h,i]perylene	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Benzo[k]fluoranthene	ND		0.019	ug/L		04/06/23 16:50	04/07/23 15:36	1
beta-BHC	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Bromacil	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Butachlor	ND	^3+	0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Butylbenzylphthalate	ND		0.48	ug/L		04/06/23 16:50	04/07/23 15:36	1
Caffeine	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Chlorobenzilate	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Chloroneb	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Chlorothalonil (Draconil, Bravo)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Chlorpyrifos	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Chrysene	ND		0.019	ug/L		04/06/23 16:50	04/07/23 15:36	1
delta-BHC	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Di(2-ethylhexyl)adipate	ND	*+	0.58	ug/L		04/06/23 16:50	04/07/23 15:36	1
Bis(2-ethylhexyl) phthalate	ND		0.58	ug/L		04/06/23 16:50	04/07/23 15:36	1
Diazinon (Qualitative)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Dibenz(a,h)anthracene	ND	^3+	0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Diclorvos (DDVP)	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Dieldrin	ND		0.19	ug/L		04/06/23 16:50	04/07/23 15:36	1
Diethylphthalate	ND		0.48	ug/L		04/06/23 16:50	04/07/23 15:36	1
Dimethylphthalate	ND		0.48	ug/L		04/06/23 16:50	04/07/23 15:36	1
Di-n-butyl phthalate	ND		0.97	ug/L		04/06/23 16:50	04/07/23 15:36	1
Di-n-octyl phthalate	ND	^3+	0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Endosulfan I (Alpha)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Endosulfan II (Beta)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Endosulfan sulfate	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Endrin	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Endrin aldehyde	ND	^3+	0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
EPTC	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Fluoranthene	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Fluorene	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
gamma-Chlordane	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Heptachlor	ND		0.039	ug/L		04/06/23 16:50	04/07/23 15:36	1
Heptachlor epoxide (isomer B)	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Hexachlorobenzene	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Hexachlorocyclopentadiene	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-42555-4

Date Collected: 04/03/23 10:30

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Indeno[1,2,3-cd]pyrene	ND	^3+	0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Isophorone	ND		0.48	ug/L		04/06/23 16:50	04/07/23 15:36	1
Lindane	ND		0.039	ug/L		04/06/23 16:50	04/07/23 15:36	1
Malathion	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Methoxychlor	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Metolachlor	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Metribuzin	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Molinate	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Naphthalene	ND		0.29	ug/L		04/06/23 16:50	04/07/23 15:36	1
Parathion	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Pendimethalin (Penoxaline)	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Total Permethrin (mixed isomers)	ND	^3+	0.19	ug/L		04/06/23 16:50	04/07/23 15:36	1
Phenanthrene	ND		0.039	ug/L		04/06/23 16:50	04/07/23 15:36	1
Propachlor	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Pyrene	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Simazine	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Terbacil	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Terbutylazine	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1
Thiobencarb	ND		0.19	ug/L		04/06/23 16:50	04/07/23 15:36	1
trans-Nonachlor	ND		0.048	ug/L		04/06/23 16:50	04/07/23 15:36	1
Trifluralin	ND		0.097	ug/L		04/06/23 16:50	04/07/23 15:36	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	04/06/23 16:50	04/07/23 15:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	92		70 - 130	04/06/23 16:50	04/07/23 15:36	1
Triphenylphosphate	112		70 - 130	04/06/23 16:50	04/07/23 15:36	1
Perylene-d12	101		70 - 130	04/06/23 16:50	04/07/23 15:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
Perfluorooctanoic acid (PFOA)	2.2		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
Perfluorohexanesulfonic acid (PFHxS)	2.4		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-42555-4

Date Collected: 04/03/23 10:30

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
Perfluorotridecanoic acid (PFTTrDA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 13:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	88		70 - 130			04/12/23 11:00	04/15/23 13:23	1
13C2 PFHxA	115		70 - 130			04/12/23 11:00	04/15/23 13:23	1
13C2 PFDA	100		70 - 130			04/12/23 11:00	04/15/23 13:23	1
13C3-GenX	103		70 - 130			04/12/23 11:00	04/15/23 13:23	1

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Acenaphthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Acenaphthylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Biphenyl	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Chrysene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Dibenzothiophene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		04/06/23 00:00	04/18/23 04:18	1
Fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Fluorene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Naphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Perylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Phenanthrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/18/23 04:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	86		27 - 133				04/06/23 00:00	04/18/23 04:18	1
(d10-Phenanthrene)	89		43 - 129				04/06/23 00:00	04/18/23 04:18	1
(d12-Chrysene)	88		52 - 144				04/06/23 00:00	04/18/23 04:18	1
(d12-Perylene)	88		36 - 161				04/06/23 00:00	04/18/23 04:18	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-42555-4

Date Collected: 04/03/23 10:30

Matrix: Drinking Water

Date Received: 04/05/23 10:20

PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d8-Naphthalene)	77		25 - 125	04/06/23 00:00	04/18/23 04:18	1

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			04/07/23 17:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	88		60 - 140		04/07/23 17:23	1

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.028		mg/L			04/14/23 18:58	1
JP5	ND	U	0.057		mg/L			04/14/23 18:58	1
JP8	ND	U	0.057		mg/L			04/14/23 18:58	1
MOTOR OIL	ND	U	0.057		mg/L			04/14/23 18:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	80		60 - 130		04/14/23 18:58	1
HEXACOSANE	94		60 - 130		04/14/23 18:58	1

Client Sample ID: TB:MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-42555-5

Date Collected: 04/03/23 10:09

Matrix: Water

Date Received: 04/05/23 10:20

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			04/07/23 18:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	88		60 - 140		04/07/23 18:00	1

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

Lab Sample ID: 380-42555-6

Date Collected: 04/03/23 11:52

Matrix: Water

Date Received: 04/05/23 10:20

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			04/07/23 18:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	91		60 - 140		04/07/23 18:38	1

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

Lab Sample ID: 380-42555-7

Date Collected: 04/03/23 11:07

Matrix: Water

Date Received: 04/05/23 10:20

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			04/07/23 19:52	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-7

Date Collected: 04/03/23 11:07
Date Received: 04/05/23 10:20

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	88		60 - 140		04/07/23 19:52	1

Client Sample ID: TB: HALAWA WELLS UNITS 1&2
(331-206-TP065)

Lab Sample ID: 380-42555-8

Date Collected: 04/03/23 10:30
Date Received: 04/05/23 10:20

Matrix: Water

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			04/07/23 20:30	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
BROMOFLUOROBENZENE	89		60 - 140		04/07/23 20:30	1			

Client Sample ID: FB:MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-42555-9

Date Collected: 04/03/23 10:09
Date Received: 04/05/23 10:20

Matrix: Water

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:02	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	104		70 - 130	04/13/23 15:07	04/15/23 15:02	1		
13C2 PFHxA	110		70 - 130	04/13/23 15:07	04/15/23 15:02	1		
13C2 PFDA	104		70 - 130	04/13/23 15:07	04/15/23 15:02	1		
13C3-GenX	102		70 - 130	04/13/23 15:07	04/15/23 15:02	1		

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Client Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-10

Date Collected: 04/03/23 11:52

Matrix: Water

Date Received: 04/05/23 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	100		70 - 130			04/13/23 15:07	04/15/23 15:12	1
13C2 PFHxA	114		70 - 130			04/13/23 15:07	04/15/23 15:12	1
13C2 PFDA	102		70 - 130			04/13/23 15:07	04/15/23 15:12	1
13C3-GenX	103		70 - 130			04/13/23 15:07	04/15/23 15:12	1

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

Lab Sample ID: 380-42555-11

Date Collected: 04/03/23 11:07

Matrix: Water

Date Received: 04/05/23 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1

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Client Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-11

Date Collected: 04/03/23 11:07

Matrix: Water

Date Received: 04/05/23 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
Perfluorotridecanoic acid (PFTTrDA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 07:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	95		70 - 130			04/14/23 15:30	04/18/23 07:22	1
13C2 PFHxA	114		70 - 130			04/14/23 15:30	04/18/23 07:22	1
13C2 PFDA	111		70 - 130			04/14/23 15:30	04/18/23 07:22	1
13C3-GenX	108		70 - 130			04/14/23 15:30	04/18/23 07:22	1

Client Sample ID: FB: HALAWA WELLS UNITS 1&2
(331-206-TP065)

Lab Sample ID: 380-42555-12

Date Collected: 04/03/23 10:30

Matrix: Water

Date Received: 04/05/23 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Perfluorotridecanoic acid (PFTTrDA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 15:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	100		70 - 130			04/13/23 15:07	04/15/23 15:21	1

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Client Sample Results

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

Job ID: 380-42555-1

**Client Sample ID: FB: HALAWA WELLS UNITS 1&2
(331-206-TP065)**

Lab Sample ID: 380-42555-12

Date Collected: 04/03/23 10:30

Matrix: Water

Date Received: 04/05/23 10:20

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

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
13C2 PFHxA	114		70 - 130	04/13/23 15:07	04/15/23 15:21	1
13C2 PFDA	103		70 - 130	04/13/23 15:07	04/15/23 15:21	1
13C3-GenX	103		70 - 130	04/13/23 15:07	04/15/23 15:21	1

Action Limit Summary

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

Job ID: 380-42555-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-42555-1

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	ND		ug/L	2	0.049	525.2	Total/NA
Atrazine	ND		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	ND		ug/L	0.2	0.019	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND	*+	ug/L	400	0.58	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.58	525.2	Total/NA
Endrin	ND		ug/L	2	0.097	525.2	Total/NA
Heptachlor	ND		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.049	525.2	Total/NA
Lindane	ND		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	ND		ug/L	40	0.097	525.2	Total/NA
Simazine	ND		ug/L	4	0.049	525.2	Total/NA

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

Lab Sample ID: 380-42555-2

PWSID Number: HI0000331

Compliance Check

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

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

Action Limit Summary

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-3

(331-203-TP400)

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	ND		ug/L	2	0.049	525.2	Total/NA
Atrazine	ND		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	ND		ug/L	0.2	0.019	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND	*+	ug/L	400	0.58	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.58	525.2	Total/NA
Endrin	ND		ug/L	2	0.097	525.2	Total/NA
Heptachlor	ND		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.049	525.2	Total/NA
Lindane	ND		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	ND		ug/L	40	0.097	525.2	Total/NA
Simazine	ND		ug/L	4	0.049	525.2	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-42555-4

(331-206-TP065)

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	ND		ug/L	2	0.048	525.2	Total/NA
Atrazine	ND		ug/L	3	0.048	525.2	Total/NA
Benzo[a]pyrene	ND		ug/L	0.2	0.019	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND	*+	ug/L	400	0.58	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.58	525.2	Total/NA
Endrin	ND		ug/L	2	0.097	525.2	Total/NA
Heptachlor	ND		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2	0.048	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.048	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.048	525.2	Total/NA
Lindane	ND		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	ND		ug/L	40	0.097	525.2	Total/NA
Simazine	ND		ug/L	4	0.048	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-42555-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	TPP (70-130)	PRY (70-130)
380-42555-1	MOANALUA WELLS (331-223-T	93	109	102
380-42555-1 MS	MOANALUA WELLS (331-223-TP202)	92	109	106
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	91	105	103
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	90	110	100
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	92	112	101

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	TPP (70-130)	PRY (70-130)
380-42597-I-1-A DU	Duplicate	93	107	98
LCS 380-35969/3-A	Lab Control Sample	92	111	106
LCS 380-35969/4-A	Lab Control Sample Dup	92	110	105
MB 380-35969/1-A	Method Blank	95	112	90
MRL 380-35969/2-A	Lab Control Sample	92	112	89

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

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-42555-1	MOANALUA WELLS (331-223-T	99	111	97	97
380-42555-1 MS	MOANALUA WELLS (331-223-TP202)	102	117	101	103
380-42555-1 MSD	MOANALUA WELLS (331-223-TP202)	103	121	113	110
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	99	115	104	103
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	99	108	100	103
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	88	115	100	103

Surrogate Legend
 d5NEFOS = d5-NEtFOSAA
 PFHxA = 13C2 PFHxA
 PFDA = 13C2 PFDA

Surrogate Summary

Client: City & County of Honolulu
 Project/Site: RED-HILL
 GenX = 13C3-GenX

Job ID: 380-42555-1

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	d5NEFOS	PFHxA	PFDA	GenX
		(70-130)	(70-130)	(70-130)	(70-130)
380-42020-A-2-A DU	Duplicate	85	112	93	100
380-42020-B-1-A MS	Matrix Spike	92	118	103	109
380-42555-9	FB:MOANALUA WELLS (331-223-TP202)	104	110	104	102
380-42555-10	FB:AIEA GULCH WELLS P2 (331-202-TP072)	100	114	102	103
380-42555-11	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	95	114	111	108
380-42555-12	FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	100	114	103	103
380-43486-B-1-A LMS	Matrix Spike	90	122	109	112
380-43486-C-1-A LMSD	Matrix Spike Duplicate	87	111	102	106
LCS 380-36405/23-A	Lab Control Sample	89	111	99	105
LCS 380-36625/23-A	Lab Control Sample	102	118	105	111
LCS 380-36727/23-A	Lab Control Sample	95	114	109	110
LCSD 380-36405/24-A	Lab Control Sample Dup	97	114	112	108
LCSD 380-36625/24-A	Lab Control Sample Dup	96	116	105	104
LCSD 380-36727/24-A	Lab Control Sample Dup	96	116	110	112
MBL 380-36405/21-A	Method Blank	102	111	109	105
MBL 380-36625/21-A	Method Blank	110	118	107	108
MBL 380-36727/21-A	Method Blank	108	107	111	102
MRL 380-36405/22-A	Lab Control Sample	95	112	104	105
MRL 380-36625/22-A	Lab Control Sample	104	119	105	107
MRL 380-36727/22-A	Lab Control Sample	102	103	101	98

Surrogate Legend

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

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: BlankMatrix

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Acenaphtl	Phenanth	CRY	NPT	PRY
		(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
104900-B1	Method Blank	85	90	89	77	87
104900-BS1	Lab Control Sample	82	85	87	73	84
104900-BS2	Lab Control Sample Dup	85	89	90	75	90

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
 (d10-Phenanthrene) = (d10-Phenanthrene)
 CRY = (d12-Chrysene)
 NPT = (d8-Naphthalene)
 PRY = (d12-Perylene)

Surrogate Summary

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

Job ID: 380-42555-1

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
380-42555-1	MOANALUA WELLS (331-223-T	87	90	86	80	86
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	86	89	87	77	87
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	85	88	87	77	85
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	86	89	88	77	88

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
 (d10-Phenanthrene) = (d10-Phenanthrene)
 CRY = (d12-Chrysene)
 NPT = (d8-Naphthalene)
 PRY = (d12-Perylene)

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (60-140)
380-42555-1	MOANALUA WELLS (331-223-T	85
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	86
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	87
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	88

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: WATER

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (60-140)
23D058-01M	Matrix Spike	112
23D058-01S	Matrix Spike Duplicate	109

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: WATER

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB
23VGH7D05B	Method Blank	

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Surrogate Summary

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

Job ID: 380-42555-1

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (70-130)
23VGH7D05C	LCD	108
23VGH7D05L	Lab Control Sample	105

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-42555-5	TB:MOANALUA WELLS (331-223-1&2)	88
380-42555-6	TB:AIEA GULCH WELLS P2 (331-202-TP072)	91
380-42555-7	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	88
380-42555-8	TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	89

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)
380-42555-1	MOANALUA WELLS (331-223-1)	79	89
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	81	101
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	71	89
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	80	94

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)
23DSD016WC	LCD	83	102
23DSD016WL	Lab Control Sample	70	101
23J5D016WC	LCD	78	91
23J5D016WL	Lab Control Sample	91	101
23J8D016WC	LCD	83	93
23J8D016WL	Lab Control Sample	98	97

Surrogate Legend

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Surrogate Summary

Client: City & County of Honolulu

Job ID: 380-42555-1

Project/Site: RED-HILL

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

BB .XACOSAI

Lab Sample ID

Client Sample ID

23DSD016WB

Method Blank

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18

Isotope Dilution Summary

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

Job ID: 380-42555-1

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

Matrix: Drinking Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-42555-1	MOANALUA WELLS (331-223-T	17 *5- ^3-	29 *5- ^3-	19 *5- ^3-	18 *5- ^3-	19 *5- ^3-	21 *5- ^3-	37 *5-	49 *5-
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	30 *5- ^3-	34 *5- ^3-	35 *5- ^3-	31 *5- ^3-	28 *5- ^3-	28 *5- ^3-	42 *5-	58
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	24 *5- ^3-	36 *5- ^3-	31 *5- ^3-	28 *5- ^3-	27 *5- ^3-	25 *5- ^3-	40 *5-	57
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	37 *5- ^3-	31 *5- ^3-	41 *5- ^3-	39 *5- ^3-	36 *5- ^3-	32 *5- ^3-	35 *5-	50

		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)
380-42555-1	MOANALUA WELLS (331-223-T	25 *5- ^3-	25 *5- ^3-	93	95	100	112	162	121
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	37 *5- ^3-	39 *5- ^3-	97	96	99	111	109	112
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	37 *5- ^3-	38 *5- ^3-	95	94	97	116	189	253 *5+
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	32 *5- ^3-	37 *5- ^3-	90	92	96	115	109	117

Surrogate Legend

- HFPODA = 13C3 HFPO-DA
- C6PFDA = 13C6 PFDA
- 13C5PHA = 13C5 PFHxA
- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- 13C7PUA = 13C7 PFUnA
- PFDaA = 13C2 PFDaA
- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- C3PFBS = 13C3 PFBS
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- 42FTS = 13C2-4:2-FTS
- 62FTS = 13C2-6:2-FTS
- 82FTS = 13C2-8:2-FTS

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

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-42555-9	FB:MOANALUA WELLS (331-22	22 *5- ^3-	50 ^3-	29 *5- ^3-	34 *5- ^3-	44 *5- ^3-	45 *5- ^3-	56	66
380-42555-10	FB:AIEA GULCH WELLS P2 (331-202-TP072)	46 *5- ^3-	68 ^3-	56 ^3-	60 ^3-	64 ^3-	65 ^3-	75	85
380-42555-11	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	35 *5- ^3-	59 ^3-	41 *5- ^3-	46 *5- ^3-	50 ^3-	57 ^3-	68	83
380-42555-12	FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	47 *5- ^3-	71 ^3-	58 ^3-	61 ^3-	66 ^3-	69 ^3-	74	86
380-42190-AR-1-A MS	Matrix Spike	19 *5-	65	28 *5-	36 *5-	54	59	68	77
380-42191-AR-1-A DU	Duplicate	29 *5-	53	33 *5-	32 *5-	33 *5-	43 *5-	58	74
LCS 380-38091/23-A	Lab Control Sample	53	64	59	58	59	63	68	80

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Isotope Dilution Summary

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

Job ID: 380-42555-1

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

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)
LCSD 380-38091/24-A	Lab Control Sample Dup	51	65	61	59	61	63	65	81
MBL 380-38091/21-A	Method Blank	9 *5-	42 *5-	14 *5-	18 *5-	29 *5-	32 *5-	45 *5-	56
MRL 380-38091/22-A	Lab Control Sample	11 *5- ^3-	45 *5- ^3-	16 *5- ^3-	21 *5- ^3-	32 *5- ^3-	37 *5- ^3-	50	63

		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)
380-42555-9	FB:MOANALUA WELLS (331-22	28 *5- ^3-	30 *5- ^3-	94	96	98	107	156	109
380-42555-10	FB:AIEA GULCH WELLS P2 (331-202-TP072)	54 ^3-	62 ^3-	100	98	96	112	109	106
380-42555-11	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	40 *5- ^3-	40 *5- ^3-	98	94	97	105	105	107
380-42555-12	FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	57 ^3-	57 ^3-	96	93	95	112	106	105
380-42190-AR-1-A MS	Matrix Spike	21 *5-	24 *5-	92	91	98	101	151	103
380-42191-AR-1-A DU	Duplicate	35 *5-	34 *5-	92	97	99	104	102	112
LCS 380-38091/23-A	Lab Control Sample	62	60	96	97	99	100	105	103
LCSD 380-38091/24-A	Lab Control Sample Dup	56	57	94	94	99	104	104	107
MBL 380-38091/21-A	Method Blank	14 *5-	14 *5-	91	91	94	101	157	155
MRL 380-38091/22-A	Lab Control Sample	17 *5- ^3-	16 *5- ^3-	97	97	96	106	146	102

Surrogate Legend

- HFPODA = 13C3 HFPO-DA
- C6PFDA = 13C6 PFDA
- 13C5PHA = 13C5 PFHxA
- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- 13C7PUA = 13C7 PFUnA
- PFDoA = 13C2 PFDoA
- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- C3PFBS = 13C3 PFBS
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- 42FTS = 13C2-4:2-FTS
- 62FTS = 13C2-6:2-FTS
- 82FTS = 13C2-8:2-FTS

QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: MB 380-35969/1-A
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 35969

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
2,4'-DDE	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
2,4'-DDT	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
2,4-Dinitrotoluene	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
2,6-Dinitrotoluene	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
4,4'-DDD	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
4,4'-DDE	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
4,4'-DDT	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Acenaphthene	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Acenaphthylene	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Acetochlor	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Alachlor	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
alpha-BHC	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
alpha-Chlordane	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Anthracene	ND		0.020	ug/L		04/06/23 16:50	04/07/23 12:11	1
Atrazine	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Benz(a)anthracene	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Benzo[a]pyrene	ND		0.020	ug/L		04/06/23 16:50	04/07/23 12:11	1
Benzo[b]fluoranthene	ND		0.020	ug/L		04/06/23 16:50	04/07/23 12:11	1
Benzo[g,h,i]perylene	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Benzo[k]fluoranthene	ND		0.020	ug/L		04/06/23 16:50	04/07/23 12:11	1
beta-BHC	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Bromacil	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Butachlor	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Butylbenzylphthalate	ND		0.51	ug/L		04/06/23 16:50	04/07/23 12:11	1
Caffeine	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Chlorobenzilate	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Chloroneb	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Chlorothalonil (Draconil, Bravo)	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Chlorpyrifos	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Chrysene	ND		0.020	ug/L		04/06/23 16:50	04/07/23 12:11	1
delta-BHC	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Di(2-ethylhexyl)adipate	ND		0.61	ug/L		04/06/23 16:50	04/07/23 12:11	1
Bis(2-ethylhexyl) phthalate	ND		0.61	ug/L		04/06/23 16:50	04/07/23 12:11	1
Diazinon (Qualitative)	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Dibenz(a,h)anthracene	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Diclorvos (DDVP)	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Dieldrin	ND		0.20	ug/L		04/06/23 16:50	04/07/23 12:11	1
Diethylphthalate	ND		0.51	ug/L		04/06/23 16:50	04/07/23 12:11	1
Dimethylphthalate	ND		0.51	ug/L		04/06/23 16:50	04/07/23 12:11	1
Di-n-butyl phthalate	ND		1.0	ug/L		04/06/23 16:50	04/07/23 12:11	1
Di-n-octyl phthalate	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Endosulfan I (Alpha)	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Endosulfan II (Beta)	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Endosulfan sulfate	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Endrin	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Endrin aldehyde	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
EPTC	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: MB 380-35969/1-A
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 35969

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Fluorene	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
gamma-Chlordane	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Heptachlor	ND		0.040	ug/L		04/06/23 16:50	04/07/23 12:11	1
Heptachlor epoxide (isomer B)	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Hexachlorobenzene	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Hexachlorocyclopentadiene	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Indeno[1,2,3-cd]pyrene	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Isophorone	ND		0.51	ug/L		04/06/23 16:50	04/07/23 12:11	1
Lindane	ND		0.040	ug/L		04/06/23 16:50	04/07/23 12:11	1
Malathion	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Methoxychlor	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Metolachlor	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Metribuzin	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Molinate	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Naphthalene	ND		0.30	ug/L		04/06/23 16:50	04/07/23 12:11	1
Parathion	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Pendimethalin (Penoxaline)	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		04/06/23 16:50	04/07/23 12:11	1
Phenanthrene	ND		0.040	ug/L		04/06/23 16:50	04/07/23 12:11	1
Propachlor	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Pyrene	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Simazine	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Terbacil	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Terbutylazine	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1
Thiobencarb	ND		0.20	ug/L		04/06/23 16:50	04/07/23 12:11	1
trans-Nonachlor	ND		0.051	ug/L		04/06/23 16:50	04/07/23 12:11	1
Trifluralin	ND		0.10	ug/L		04/06/23 16:50	04/07/23 12:11	1

<i>Tentatively Identified Compound</i>	<i>Est. Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RT</i>	<i>CAS No.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Unknown</i>	1.70	T J	ug/L		2.42	N/A	04/06/23 16:50	04/07/23 12:11	1
<i>Phenol, 4-(1,1-dimethylpropyl)-</i>	0.590	T J N	ug/L		3.90	80-46-6	04/06/23 16:50	04/07/23 12:11	1
<i>9-Octadecenamamide, (Z)-</i>	0.682	T J N	ug/L		7.58	301-02-0	04/06/23 16:50	04/07/23 12:11	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>2-Nitro-m-xylene</i>	95		70 - 130	04/06/23 16:50	04/07/23 12:11	1
<i>Triphenylphosphate</i>	112		70 - 130	04/06/23 16:50	04/07/23 12:11	1
<i>Perylene-d12</i>	90		70 - 130	04/06/23 16:50	04/07/23 12:11	1

Lab Sample ID: LCS 380-35969/3-A
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35969

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.97	1.80		ug/L		91	70 - 130
2,4'-DDE	1.97	1.99		ug/L		101	70 - 130
2,4'-DDT	1.97	1.83		ug/L		93	70 - 130
2,4-Dinitrotoluene	1.97	1.70		ug/L		86	70 - 130

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: LCS 380-35969/3-A
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35969

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,6-Dinitrotoluene	1.97	1.66		ug/L		84	70 - 130
4,4'-DDD	1.97	1.80		ug/L		91	70 - 130
4,4'-DDE	1.97	2.13		ug/L		108	70 - 130
4,4'-DDT	1.97	1.77		ug/L		90	70 - 130
Acenaphthene	1.97	1.84		ug/L		93	70 - 130
Acenaphthylene	1.97	1.91		ug/L		97	70 - 130
Acetochlor	1.97	2.02		ug/L		103	70 - 130
Alachlor	1.97	2.09		ug/L		106	70 - 130
alpha-BHC	1.97	1.98		ug/L		100	70 - 130
alpha-Chlordane	1.97	2.21		ug/L		112	70 - 130
Anthracene	1.97	1.99		ug/L		101	70 - 130
Atrazine	1.97	2.15		ug/L		109	70 - 130
Benz(a)anthracene	1.97	1.91		ug/L		97	70 - 130
Benzo[a]pyrene	1.97	2.24		ug/L		114	70 - 130
Benzo[b]fluoranthene	1.97	2.00		ug/L		101	70 - 130
Benzo[g,h,i]perylene	1.97	2.10		ug/L		106	70 - 130
Benzo[k]fluoranthene	1.97	1.90		ug/L		96	70 - 130
beta-BHC	1.97	1.94		ug/L		98	70 - 130
Bromacil	1.97	1.95		ug/L		99	70 - 130
Butachlor	1.97	2.12		ug/L		107	70 - 130
Butylbenzylphthalate	1.97	2.38		ug/L		121	70 - 130
Caffeine	1.97	1.25		ug/L		63	45 - 137
Chlorobenzilate	1.97	2.21		ug/L		112	70 - 130
Chloroneb	1.97	1.94		ug/L		98	70 - 130
Chlorothalonil (Draconil, Bravo)	1.97	2.33		ug/L		118	70 - 130
Chlorpyrifos	1.97	2.16		ug/L		109	70 - 130
Chrysene	1.97	1.91		ug/L		97	70 - 130
delta-BHC	1.97	1.94		ug/L		98	70 - 130
Di(2-ethylhexyl)adipate	1.97	2.58	+	ug/L		131	70 - 130
Bis(2-ethylhexyl) phthalate	1.97	2.10		ug/L		106	70 - 130
Diazinon (Qualitative)	1.97	1.68		ug/L		85	15 - 132
Dibenz(a,h)anthracene	1.97	2.09		ug/L		106	70 - 130
Diclorvos (DDVP)	1.97	1.84		ug/L		93	70 - 130
Dieldrin	1.97	2.03		ug/L		103	70 - 130
Diethylphthalate	1.97	2.10		ug/L		106	70 - 130
Dimethylphthalate	1.97	2.05		ug/L		104	70 - 130
Di-n-butyl phthalate	3.94	4.32		ug/L		109	70 - 130
Di-n-octyl phthalate	1.97	2.13		ug/L		108	70 - 130
Endosulfan I (Alpha)	1.97	1.98		ug/L		101	70 - 130
Endosulfan II (Beta)	1.97	2.01		ug/L		102	70 - 130
Endosulfan sulfate	1.97	2.21		ug/L		112	70 - 130
Endrin	1.97	1.96		ug/L		100	70 - 130
Endrin aldehyde	1.97	2.15		ug/L		109	70 - 130
EPTC	1.97	1.99		ug/L		101	70 - 130
Fluoranthene	1.97	2.09		ug/L		106	70 - 130
Fluorene	1.97	2.08		ug/L		105	70 - 130
gamma-Chlordane	1.97	2.20		ug/L		112	70 - 130
Heptachlor	1.97	1.95		ug/L		99	70 - 130
Heptachlor epoxide (isomer B)	1.97	2.31		ug/L		117	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: LCS 380-35969/3-A
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35969

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorobenzene	1.97	2.15		ug/L		109	70 - 130
Hexachlorocyclopentadiene	1.97	1.83		ug/L		93	70 - 130
Indeno[1,2,3-cd]pyrene	1.97	2.03		ug/L		103	70 - 130
Isophorone	1.97	1.84		ug/L		93	70 - 130
Lindane	1.97	1.96		ug/L		100	70 - 130
Malathion	1.97	2.18		ug/L		111	70 - 130
Methoxychlor	1.97	1.95		ug/L		99	70 - 130
Metolachlor	1.97	2.18		ug/L		111	70 - 130
Metribuzin	1.97	1.81		ug/L		92	70 - 130
Molinate	1.97	2.02		ug/L		102	70 - 130
Naphthalene	1.97	1.72		ug/L		87	70 - 130
Parathion	1.97	2.06		ug/L		105	70 - 130
Pendimethalin (Penoxaline)	1.97	2.06		ug/L		104	70 - 130
Phenanthrene	1.97	1.88		ug/L		95	70 - 130
Propachlor	1.97	2.01		ug/L		102	70 - 130
Pyrene	1.97	2.06		ug/L		104	70 - 130
Simazine	1.97	1.88		ug/L		95	70 - 130
Terbacil	1.97	2.09		ug/L		106	70 - 130
Terbutylazine	1.97	1.89		ug/L		96	70 - 130
Thiobencarb	1.97	1.97		ug/L		100	70 - 130
trans-Nonachlor	1.97	1.87		ug/L		95	70 - 130
Trifluralin	1.97	2.13		ug/L		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	92		70 - 130
Triphenylphosphate	111		70 - 130
Perylene-d12	106		70 - 130

Lab Sample ID: LCSD 380-35969/4-A
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 35969

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD	1.99	1.79		ug/L		90	70 - 130	1	20
2,4'-DDE	1.99	2.00		ug/L		100	70 - 130	0	20
2,4'-DDT	1.99	1.84		ug/L		92	70 - 130	0	20
2,4-Dinitrotoluene	1.99	1.81		ug/L		91	70 - 130	6	20
2,6-Dinitrotoluene	1.99	1.77		ug/L		89	70 - 130	6	20
4,4'-DDD	1.99	1.80		ug/L		91	70 - 130	0	20
4,4'-DDE	1.99	2.08		ug/L		105	70 - 130	2	20
4,4'-DDT	1.99	1.82		ug/L		91	70 - 130	2	20
Acenaphthene	1.99	1.86		ug/L		94	70 - 130	1	20
Acenaphthylene	1.99	2.01		ug/L		101	70 - 130	5	20
Acetochlor	1.99	2.09		ug/L		105	70 - 130	3	20
Alachlor	1.99	2.06		ug/L		104	70 - 130	1	20
alpha-BHC	1.99	2.01		ug/L		101	70 - 130	2	20
alpha-Chlordane	1.99	2.21		ug/L		111	70 - 130	0	20
Anthracene	1.99	2.01		ug/L		101	70 - 130	1	20

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: LCSD 380-35969/4-A
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 35969

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Atrazine	1.99	2.31		ug/L		116	70 - 130	7	20	
Benz(a)anthracene	1.99	1.91		ug/L		96	70 - 130	0	20	
Benzo[a]pyrene	1.99	2.25		ug/L		113	70 - 130	0	20	
Benzo[b]fluoranthene	1.99	1.98		ug/L		99	70 - 130	1	20	
Benzo[g,h,i]perylene	1.99	2.01		ug/L		101	70 - 130	4	20	
Benzo[k]fluoranthene	1.99	1.97		ug/L		99	70 - 130	4	20	
beta-BHC	1.99	2.02		ug/L		102	70 - 130	4	20	
Bromacil	1.99	2.02		ug/L		101	70 - 130	3	20	
Butachlor	1.99	2.13		ug/L		107	70 - 130	0	20	
Butylbenzylphthalate	1.99	2.39		ug/L		120	70 - 130	0	20	
Caffeine	1.99	1.26		ug/L		63	45 - 137	1	20	
Chlorobenzilate	1.99	2.18		ug/L		110	70 - 130	1	20	
Chloroneb	1.99	1.98		ug/L		100	70 - 130	2	20	
Chlorothalonil (Draconil, Bravo)	1.99	2.24		ug/L		113	70 - 130	4	20	
Chlorpyrifos	1.99	2.15		ug/L		108	70 - 130	0	20	
Chrysene	1.99	1.92		ug/L		97	70 - 130	1	20	
delta-BHC	1.99	1.96		ug/L		98	70 - 130	1	20	
Di(2-ethylhexyl)adipate	1.99	2.51		ug/L		126	70 - 130	3	20	
Bis(2-ethylhexyl) phthalate	1.99	2.12		ug/L		107	70 - 130	1	20	
Diazinon (Qualitative)	1.99	1.74		ug/L		87	15 - 132	4	20	
Dibenz(a,h)anthracene	1.99	2.02		ug/L		102	70 - 130	3	20	
Diclorvos (DDVP)	1.99	1.96		ug/L		98	70 - 130	6	20	
Dieldrin	1.99	2.02		ug/L		102	70 - 130	0	20	
Diethylphthalate	1.99	2.17		ug/L		109	70 - 130	3	20	
Dimethylphthalate	1.99	2.19		ug/L		110	70 - 130	7	20	
Di-n-butyl phthalate	3.98	4.34		ug/L		109	70 - 130	0	20	
Di-n-octyl phthalate	1.99	2.13		ug/L		107	70 - 130	0	20	
Endosulfan I (Alpha)	1.99	1.95		ug/L		98	70 - 130	2	20	
Endosulfan II (Beta)	1.99	1.99		ug/L		100	70 - 130	1	20	
Endosulfan sulfate	1.99	2.25		ug/L		113	70 - 130	2	20	
Endrin	1.99	1.95		ug/L		98	70 - 130	1	20	
Endrin aldehyde	1.99	2.03		ug/L		102	70 - 130	6	20	
EPTC	1.99	2.02		ug/L		102	70 - 130	2	20	
Fluoranthene	1.99	2.11		ug/L		106	70 - 130	1	20	
Fluorene	1.99	2.10		ug/L		105	70 - 130	1	20	
gamma-Chlordane	1.99	2.16		ug/L		109	70 - 130	2	20	
Heptachlor	1.99	1.93		ug/L		97	70 - 130	1	20	
Heptachlor epoxide (isomer B)	1.99	2.32		ug/L		116	70 - 130	0	20	
Hexachlorobenzene	1.99	2.15		ug/L		108	70 - 130	0	20	
Hexachlorocyclopentadiene	1.99	1.90		ug/L		96	70 - 130	4	20	
Indeno[1,2,3-cd]pyrene	1.99	2.06		ug/L		103	70 - 130	1	20	
Isophorone	1.99	1.90		ug/L		95	70 - 130	3	20	
Lindane	1.99	1.97		ug/L		99	70 - 130	0	20	
Malathion	1.99	2.15		ug/L		108	70 - 130	1	20	
Methoxychlor	1.99	2.00		ug/L		100	70 - 130	3	20	
Metolachlor	1.99	2.18		ug/L		110	70 - 130	0	20	
Metribuzin	1.99	1.78		ug/L		90	70 - 130	1	20	
Molinate	1.99	2.07		ug/L		104	70 - 130	2	20	
Naphthalene	1.99	1.76		ug/L		88	70 - 130	2	20	

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: LCSD 380-35969/4-A
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 35969

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Parathion	1.99	2.02		ug/L		102	70 - 130	2	20
Pendimethalin (Penoxaline)	1.99	2.10		ug/L		105	70 - 130	2	20
Phenanthrene	1.99	1.88		ug/L		95	70 - 130	0	20
Propachlor	1.99	2.07		ug/L		104	70 - 130	3	20
Pyrene	1.99	2.06		ug/L		103	70 - 130	0	20
Simazine	1.99	2.01		ug/L		101	70 - 130	7	20
Terbacil	1.99	2.27		ug/L		114	70 - 130	8	20
Terbutylazine	1.99	2.02		ug/L		102	70 - 130	7	20
Thiobencarb	1.99	1.97		ug/L		99	70 - 130	0	20
trans-Nonachlor	1.99	1.90		ug/L		95	70 - 130	1	20
Trifluralin	1.99	2.18		ug/L		110	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Nitro-m-xylene	92		70 - 130
Triphenylphosphate	110		70 - 130
Perylene-d12	105		70 - 130

Lab Sample ID: MRL 380-35969/2-A
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35969

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	0.0984	0.134		ug/L		137	50 - 150
2,4'-DDE	0.0984	0.0892	J	ug/L		91	50 - 150
2,4'-DDT	0.0984	0.0997		ug/L		101	50 - 150
2,4-Dinitrotoluene	0.0984	0.110		ug/L		112	50 - 150
2,6-Dinitrotoluene	0.0984	0.118		ug/L		119	50 - 150
4,4'-DDD	0.0984	0.122		ug/L		124	50 - 150
4,4'-DDE	0.0984	0.124		ug/L		126	50 - 150
4,4'-DDT	0.0984	0.130		ug/L		132	50 - 150
Acenaphthene	0.0984	0.0902	J	ug/L		92	50 - 150
Acenaphthylene	0.0984	0.0746	J	ug/L		76	50 - 150
Acetochlor	0.0492	0.0660	J	ug/L		134	50 - 150
Alachlor	0.0492	0.0656		ug/L		133	50 - 150
alpha-BHC	0.0984	0.0999		ug/L		102	50 - 150
alpha-Chlordane	0.0246	0.0300	J	ug/L		122	50 - 150
Anthracene	0.0197	ND		ug/L		84	50 - 150
Atrazine	0.0492	0.0476	J	ug/L		97	50 - 150
Benz(a)anthracene	0.0492	0.0385	J	ug/L		78	50 - 150
Benzo[a]pyrene	0.0197	0.0161	J	ug/L		82	50 - 150
Benzo[b]fluoranthene	0.0197	0.0296	^3+	ug/L		151	50 - 150
Benzo[g,h,i]perylene	0.0492	0.0608		ug/L		123	50 - 150
Benzo[k]fluoranthene	0.0197	0.0215		ug/L		109	50 - 150
beta-BHC	0.0984	0.0979	J	ug/L		100	50 - 150
Bromacil	0.0984	0.111		ug/L		113	50 - 150
Butachlor	0.0492	0.0816	^3+	ug/L		166	50 - 150
Butylbenzylphthalate	0.148	0.178	J	ug/L		120	50 - 150
Caffeine	0.0492	0.0287	J	ug/L		58	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: MRL 380-35969/2-A
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35969

Analyte	Spike Added	MRL	MRL	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Chlorobenzilate	0.0984	0.138		ug/L		140	50 - 150
Chloroneb	0.0984	0.0988		ug/L		100	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0984	0.0875	J	ug/L		89	50 - 150
Chlorpyrifos	0.0492	0.0540		ug/L		110	50 - 150
Chrysene	0.0197	0.0198	J	ug/L		101	50 - 150
delta-BHC	0.0984	0.0940	J	ug/L		96	50 - 150
Di(2-ethylhexyl)adipate	0.295	0.416	J	ug/L		141	50 - 150
Bis(2-ethylhexyl) phthalate	0.591	0.700		ug/L		119	50 - 150
Diazinon (Qualitative)	0.0984	0.115		ug/L		117	15 - 132
Dibenz(a,h)anthracene	0.0492	0.0744	^3+	ug/L		151	50 - 150
Diclorvos (DDVP)	0.0492	0.0416	J	ug/L		84	50 - 150
Dieldrin	0.0984	0.101	J	ug/L		102	50 - 150
Diethylphthalate	0.148	0.166	J	ug/L		113	50 - 150
Dimethylphthalate	0.295	0.271	J	ug/L		92	50 - 150
Di-n-butyl phthalate	0.295	0.389	J	ug/L		132	49 - 243
Di-n-octyl phthalate	0.0984	0.154	^3+	ug/L		156	50 - 150
Endosulfan I (Alpha)	0.0984	0.0912	J	ug/L		93	50 - 150
Endosulfan II (Beta)	0.0984	0.102		ug/L		104	50 - 150
Endosulfan sulfate	0.0984	0.0990		ug/L		101	50 - 150
Endrin	0.0984	0.104		ug/L		106	50 - 150
Endrin aldehyde	0.0984	0.152	^3+	ug/L		154	50 - 150
EPTC	0.0984	0.0946	J	ug/L		96	50 - 150
Fluoranthene	0.0492	0.0535	J	ug/L		109	50 - 150
Fluorene	0.0492	0.0494		ug/L		100	50 - 150
gamma-Chlordane	0.0246	0.0310	J	ug/L		126	50 - 150
Heptachlor	0.0394	0.0397		ug/L		101	50 - 150
Heptachlor epoxide (isomer B)	0.0492	0.0617		ug/L		125	50 - 150
Hexachlorobenzene	0.0492	0.0531		ug/L		108	50 - 150
Hexachlorocyclopentadiene	0.0492	0.0393	J	ug/L		80	50 - 150
Indeno[1,2,3-cd]pyrene	0.0492	0.0750	^3+	ug/L		152	50 - 150
Isophorone	0.0984	0.106	J	ug/L		108	50 - 150
Lindane	0.0394	0.0413		ug/L		105	50 - 150
Malathion	0.0984	0.120		ug/L		121	50 - 150
Methoxychlor	0.0984	0.135		ug/L		137	50 - 150
Metolachlor	0.0492	0.0547		ug/L		111	50 - 150
Metribuzin	0.0492	0.0618		ug/L		126	50 - 150
Molinate	0.0984	0.0914	J	ug/L		93	50 - 150
Naphthalene	0.0984	0.109	J	ug/L		110	50 - 150
Parathion	0.0984	0.108		ug/L		110	50 - 150
Pendimethalin (Penoxaline)	0.0984	0.105		ug/L		106	50 - 150
Phenanthrene	0.0197	0.0213	J	ug/L		108	50 - 150
Propachlor	0.0492	0.0476	J	ug/L		97	50 - 150
Pyrene	0.0492	0.0515		ug/L		105	50 - 150
Simazine	0.0492	0.0594		ug/L		121	50 - 150
Terbacil	0.0984	0.118		ug/L		119	50 - 150
Terbutylazine	0.0984	0.104		ug/L		106	50 - 150
Thiobencarb	0.0984	0.0976	J	ug/L		99	50 - 150
trans-Nonachlor	0.0246	ND		ug/L		90	50 - 150
Trifluralin	0.0984	0.106		ug/L		108	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-42555-1

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

<i>Surrogate</i>	<i>MRL %Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
2-Nitro-m-xylene	92		70 - 130
Triphenylphosphate	112		70 - 130
Perylene-d12	89		70 - 130

Lab Sample ID: 380-42555-1 MS
Matrix: Drinking Water
Analysis Batch: 36021

Client Sample ID: MOANALUA WELLS (331-223-TP202)
Prep Type: Total/NA
Prep Batch: 35969

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND		1.94	1.71		ug/L		88	70 - 130
2,4'-DDE	ND		1.94	1.91		ug/L		98	70 - 130
2,4'-DDT	ND		1.94	1.74		ug/L		89	70 - 130
2,4-Dinitrotoluene	ND		1.94	1.76		ug/L		90	70 - 130
2,6-Dinitrotoluene	ND		1.94	1.73		ug/L		89	70 - 130
4,4'-DDD	ND		1.94	1.75		ug/L		90	70 - 130
4,4'-DDE	ND		1.94	1.98		ug/L		102	70 - 130
4,4'-DDT	ND		1.94	1.71		ug/L		88	70 - 130
Acenaphthene	ND		1.94	1.81		ug/L		93	70 - 130
Acenaphthylene	ND		1.94	2.05		ug/L		105	70 - 130
Acetochlor	ND		1.94	2.03		ug/L		105	70 - 130
Alachlor	ND		1.94	2.02		ug/L		104	70 - 130
alpha-BHC	ND		1.94	1.96		ug/L		101	70 - 130
alpha-Chlordane	ND		1.94	2.12		ug/L		109	70 - 130
Anthracene	ND	F1	1.94	1.17	F1	ug/L		60	70 - 130
Atrazine	ND		1.94	2.20		ug/L		113	70 - 130
Benz(a)anthracene	ND		1.94	1.70		ug/L		88	70 - 130
Benzo[a]pyrene	ND		1.94	1.77		ug/L		91	70 - 130
Benzo[b]fluoranthene	ND	^3+	1.94	1.90		ug/L		98	70 - 130
Benzo[g,h,i]perylene	ND		1.94	1.99		ug/L		102	70 - 130
Benzo[k]fluoranthene	ND		1.94	1.76		ug/L		91	70 - 130
beta-BHC	ND		1.94	1.96		ug/L		101	70 - 130
Bromacil	ND		1.94	1.97		ug/L		102	70 - 130
Butachlor	ND	^3+	1.94	2.07		ug/L		106	70 - 130
Butylbenzylphthalate	ND		1.94	2.35		ug/L		121	70 - 130
Caffeine	ND		1.94	1.49		ug/L		77	46 - 144
Chlorobenzilate	ND		1.94	2.10		ug/L		108	70 - 130
Chloroneb	ND		1.94	1.97		ug/L		101	70 - 130
Chlorothalonil (Draconil, Bravo)	ND		1.94	2.16		ug/L		111	70 - 130
Chlorpyrifos	ND		1.94	2.14		ug/L		110	70 - 130
Chrysene	ND		1.94	1.83		ug/L		94	70 - 130
delta-BHC	ND		1.94	1.87		ug/L		96	70 - 130
Di(2-ethylhexyl)adipate	ND	*+	1.94	2.32		ug/L		119	70 - 130
Bis(2-ethylhexyl) phthalate	ND		1.94	1.98		ug/L		102	70 - 130
Diazinon (Qualitative)	ND		1.94	1.83		ug/L		94	15 - 132
Dibenz(a,h)anthracene	ND	^3+	1.94	1.93		ug/L		99	70 - 130
Diclorvos (DDVP)	ND		1.94	1.87		ug/L		96	70 - 130
Dieldrin	ND		1.94	2.01		ug/L		103	70 - 130
Diethylphthalate	ND		1.94	2.10		ug/L		108	70 - 130
Dimethylphthalate	ND		1.94	2.09		ug/L		107	70 - 130
Di-n-butyl phthalate	ND		3.89	4.27		ug/L		110	70 - 130
Di-n-octyl phthalate	ND	^3+	1.94	2.01		ug/L		104	70 - 130

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-1 MS
Matrix: Drinking Water
Analysis Batch: 36021

Client Sample ID: MOANALUA WELLS (331-223-TP202)
Prep Type: Total/NA
Prep Batch: 35969

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Endosulfan I (Alpha)	ND		1.94	1.89		ug/L		97	70 - 130
Endosulfan II (Beta)	ND		1.94	1.99		ug/L		102	70 - 130
Endosulfan sulfate	ND		1.94	2.23		ug/L		115	70 - 130
Endrin	ND		1.94	1.84		ug/L		95	70 - 130
Endrin aldehyde	ND	^3+	1.94	1.90		ug/L		98	70 - 130
EPTC	ND		1.94	2.02		ug/L		104	70 - 130
Fluoranthene	ND		1.94	2.05		ug/L		105	70 - 130
Fluorene	ND		1.94	2.06		ug/L		106	70 - 130
gamma-Chlordane	ND		1.94	2.09		ug/L		108	70 - 130
Heptachlor	ND		1.94	1.89		ug/L		97	70 - 130
Heptachlor epoxide (isomer B)	ND		1.94	2.29		ug/L		118	70 - 130
Hexachlorobenzene	ND		1.94	2.09		ug/L		107	70 - 130
Hexachlorocyclopentadiene	ND		1.94	1.80		ug/L		93	70 - 130
Indeno[1,2,3-cd]pyrene	ND	^3+	1.94	1.95		ug/L		100	70 - 130
Isophorone	ND		1.94	1.81		ug/L		93	70 - 130
Lindane	ND		1.94	1.93		ug/L		99	70 - 130
Malathion	ND		1.94	2.10		ug/L		108	70 - 130
Methoxychlor	ND		1.94	1.94		ug/L		100	70 - 130
Metolachlor	ND		1.94	2.11		ug/L		108	70 - 130
Metribuzin	ND		1.94	1.65		ug/L		85	70 - 130
Molinate	ND		1.94	2.04		ug/L		105	70 - 130
Naphthalene	ND		1.94	1.69		ug/L		87	70 - 130
Parathion	ND		1.94	1.97		ug/L		101	70 - 130
Pendimethalin (Penoxaline)	ND		1.94	2.11		ug/L		109	70 - 130
Phenanthrene	ND		1.94	1.84		ug/L		95	70 - 130
Propachlor	ND		1.94	2.01		ug/L		103	70 - 130
Pyrene	ND		1.94	2.01		ug/L		103	70 - 130
Simazine	ND		1.94	1.92		ug/L		99	70 - 130
Terbacil	ND		1.94	2.09		ug/L		108	70 - 130
Terbutylazine	ND		1.94	1.97		ug/L		101	70 - 130
Thiobencarb	ND		1.94	1.88		ug/L		97	70 - 130
trans-Nonachlor	ND		1.94	1.84		ug/L		95	70 - 130
Trifluralin	ND		1.94	2.15		ug/L		111	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	92		70 - 130
Triphenylphosphate	109		70 - 130
Perylene-d12	106		70 - 130

Lab Sample ID: 380-42597-I-1-A DU
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 35969

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
2,4'-DDD	ND		ND		ug/L		NC	20	
2,4'-DDE	ND		ND		ug/L		NC	20	
2,4'-DDT	ND		ND		ug/L		NC	20	
2,4-Dinitrotoluene	ND		ND		ug/L		NC	20	

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42597-I-1-A DU
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 35969

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

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42597-I-1-A DU
Matrix: Water
Analysis Batch: 36021

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 35969

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Hexachlorobenzene	ND		ND		ug/L		NC	20
Hexachlorocyclopentadiene	ND		ND		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	ND	^3+	ND		ug/L		NC	20
Isophorone	ND		ND		ug/L		NC	20
Lindane	ND		ND		ug/L		NC	20
Malathion	ND		ND		ug/L		NC	20
Methoxychlor	ND		ND		ug/L		NC	20
Metolachlor	ND		ND		ug/L		NC	20
Metribuzin	ND		ND		ug/L		NC	20
Molinate	ND		ND		ug/L		NC	20
Naphthalene	ND		ND		ug/L		NC	20
Parathion	ND		ND		ug/L		NC	20
Pendimethalin (Penoxaline)	ND		ND		ug/L		NC	20
Total Permethrin (mixed isomers)	ND	^3+	ND		ug/L		NC	20
Phenanthrene	ND		ND		ug/L		NC	20
Propachlor	ND		ND		ug/L		NC	20
Pyrene	ND		ND		ug/L		NC	20
Simazine	ND		ND		ug/L		NC	20
Terbacil	ND		ND		ug/L		NC	20
Terbutylazine	ND		ND		ug/L		NC	20
Thiobencarb	ND		ND		ug/L		NC	20
trans-Nonachlor	ND		ND		ug/L		NC	20
Trifluralin	ND		ND		ug/L		NC	20
		DU	DU					
Surrogate	%Recovery	Qualifier	Limits					
2-Nitro-m-xylene	93		70 - 130					
Triphenylphosphate	107		70 - 130					
Perylene-d12	98		70 - 130					

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

Lab Sample ID: MBL 380-36405/21-A
Matrix: Water
Analysis Batch: 36776

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36405

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: MBL 380-36405/21-A
Matrix: Water
Analysis Batch: 36776

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36405

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		04/12/23 11:00	04/15/23 09:10	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	102		70 - 130	04/12/23 11:00	04/15/23 09:10	1
13C2 PFHxA	111		70 - 130	04/12/23 11:00	04/15/23 09:10	1
13C2 PFDA	109		70 - 130	04/12/23 11:00	04/15/23 09:10	1
13C3-GenX	105		70 - 130	04/12/23 11:00	04/15/23 09:10	1

Lab Sample ID: LCS 380-36405/23-A
Matrix: Water
Analysis Batch: 36776

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36405

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	52.0		ng/L		104	70 - 130
Perfluorooctanesulfonic acid (PFOS)	46.4	49.8		ng/L		107	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	47.9		ng/L		96	70 - 130
N-methylperfluorooctanesulfonamide-1-sulfonic acid (NMeFOSAA)	50.1	47.9		ng/L		96	70 - 130
N-ethylperfluorooctanesulfonamide-1-sulfonic acid (NEtFOSAA)	50.1	45.3		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	51.9		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	47.1		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	52.1		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	51.4		ng/L		103	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	45.7	51.7		ng/L		113	70 - 130
Perfluorobutanesulfonic acid (PFBS)	44.3	52.1		ng/L		117	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	55.9		ng/L		111	70 - 130
Perfluorononanoic acid (PFNA)	50.1	52.1		ng/L		104	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	45.7		ng/L		91	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	45.6		ng/L		91	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	50.3		ng/L		107	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: LCS 380-36405/23-A
Matrix: Water
Analysis Batch: 36776

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36405

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	45.4		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	49.8		ng/L		105	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	89		70 - 130
13C2 PFHxA	111		70 - 130
13C2 PFDA	99		70 - 130
13C3-GenX	105		70 - 130

Lab Sample ID: LCSD 380-36405/24-A
Matrix: Water
Analysis Batch: 36776

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36405

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	48.7		ng/L		97	70 - 130	7	30
Perfluorooctanesulfonic acid (PFOS)	46.4	49.8		ng/L		107	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	50.1	48.5		ng/L		97	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	48.6		ng/L		97	70 - 130	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	46.6		ng/L		93	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	50.1	53.4		ng/L		106	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	50.1	50.5		ng/L		101	70 - 130	7	30
Perfluorooctanoic acid (PFOA)	50.1	53.3		ng/L		106	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	50.1	52.1		ng/L		104	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	45.7	49.7		ng/L		109	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	44.3	47.4		ng/L		107	70 - 130	9	30
Perfluoroheptanoic acid (PFHpA)	50.1	53.2		ng/L		106	70 - 130	5	30
Perfluorononanoic acid (PFNA)	50.1	52.7		ng/L		105	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	50.1	49.2		ng/L		98	70 - 130	7	30
Perfluorotridecanoic acid (PFTrDA)	50.1	49.0		ng/L		98	70 - 130	7	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	50.3		ng/L		107	70 - 130	0	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	45.5		ng/L		96	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	46.8		ng/L		99	70 - 130	6	30

QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: LCSD 380-36405/24-A
Matrix: Water
Analysis Batch: 36776

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36405

<i>Surrogate</i>	<i>LCSD LCSD</i>		<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
<i>d5-NEtFOSAA</i>	97		70 - 130
<i>13C2 PFHxA</i>	114		70 - 130
<i>13C2 PFDA</i>	112		70 - 130
<i>13C3-GenX</i>	108		70 - 130

Lab Sample ID: MRL 380-36405/22-A
Matrix: Water
Analysis Batch: 36776

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36405

<i>Analyte</i>	<i>Spike Added</i>	<i>MRL Result</i>	<i>MRL Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>
							<i>Limits</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.03		ng/L		101	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.08		ng/L		112	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.13		ng/L		106	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.14		ng/L		107	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.06		ng/L		103	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.25		ng/L		112	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.10		ng/L		105	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.29		ng/L		114	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.17		ng/L		108	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.01		ng/L		110	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.87	J	ng/L		106	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.20		ng/L		110	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.28		ng/L		114	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.99	J	ng/L		100	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.04		ng/L		102	50 - 150
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	1.87	2.01		ng/L		107	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	1.76	J	ng/L		93	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.03		ng/L		107	50 - 150

<i>Surrogate</i>	<i>MRL MRL</i>		<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
<i>d5-NEtFOSAA</i>	95		70 - 130
<i>13C2 PFHxA</i>	112		70 - 130
<i>13C2 PFDA</i>	104		70 - 130
<i>13C3-GenX</i>	105		70 - 130

QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42020-B-1-A MS
Matrix: Water
Analysis Batch: 36776

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 36405

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		25.2	26.6		ng/L		106		70 - 130
Perfluorooctanesulfonic acid (PFOS)	ND		23.3	26.2		ng/L		107		70 - 130
Perfluoroundecanoic acid (PFUnA)	ND		25.2	25.9		ng/L		103		70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		25.2	24.8		ng/L		99		70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		25.2	23.5		ng/L		93		70 - 130
Perfluorohexanoic acid (PFHxA)	ND		25.2	29.0		ng/L		111		70 - 130
Perfluorododecanoic acid (PFDoA)	ND		25.2	25.8		ng/L		103		70 - 130
Perfluorooctanoic acid (PFOA)	ND		25.2	29.2		ng/L		112		70 - 130
Perfluorodecanoic acid (PFDA)	ND		25.2	26.7		ng/L		106		70 - 130
Perfluorohexanesulfonic acid (PFHxS)	ND		23.0	25.6		ng/L		109		70 - 130
Perfluorobutanesulfonic acid (PFBS)	ND		22.3	24.2		ng/L		107		70 - 130
Perfluoroheptanoic acid (PFHpA)	ND		25.2	29.7		ng/L		115		70 - 130
Perfluorononanoic acid (PFNA)	ND		25.2	27.3		ng/L		109		70 - 130
Perfluorotetradecanoic acid (PFTA)	ND		25.2	25.0		ng/L		100		70 - 130
Perfluorotridecanoic acid (PFTrDA)	ND		25.2	26.4		ng/L		105		70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		23.5	23.9		ng/L		101		70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		23.8	22.2		ng/L		93		70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		23.8	26.5		ng/L		111		70 - 130
MS MS										
Surrogate	%Recovery	Qualifier	Limits							
d5-NEtFOSAA	92		70 - 130							
13C2 PFHxA	118		70 - 130							
13C2 PFDA	103		70 - 130							
13C3-GenX	109		70 - 130							

Lab Sample ID: 380-42020-A-2-A DU
Matrix: Water
Analysis Batch: 36776

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 36405

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		ND		ng/L			NC	30
Perfluorooctanesulfonic acid (PFOS)	ND		ND		ng/L			NC	30
Perfluoroundecanoic acid (PFUnA)	ND		ND		ng/L			NC	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		ND		ng/L			NC	30

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42020-A-2-A DU
Matrix: Water
Analysis Batch: 36776

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 36405

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
N-ethylperfluorooctanesulfonamide doacetic acid (NEtFOSAA)	ND		ND		ng/L		NC	30
Perfluorohexanoic acid (PFHxA)	ND		ND		ng/L		NC	30
Perfluorododecanoic acid (PFDoA)	ND		ND		ng/L		NC	30
Perfluorooctanoic acid (PFOA)	ND		ND		ng/L		NC	30
Perfluorodecanoic acid (PFDA)	ND		ND		ng/L		NC	30
Perfluorohexanesulfonic acid (PFHxS)	ND		ND		ng/L		NC	30
Perfluorobutanesulfonic acid (PFBS)	ND		ND		ng/L		NC	30
Perfluoroheptanoic acid (PFHpA)	ND		ND		ng/L		NC	30
Perfluorononanoic acid (PFNA)	ND		ND		ng/L		NC	30
Perfluorotetradecanoic acid (PFTA)	ND		ND		ng/L		NC	30
Perfluorotridecanoic acid (PFTTrDA)	ND		ND		ng/L		NC	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		ND		ng/L		NC	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		ND		ng/L		NC	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		ND		ng/L		NC	30

Surrogate	%Recovery	DU Qualifier	DU Limits
d5-NEtFOSAA	85		70 - 130
13C2 PFHxA	112		70 - 130
13C2 PFDA	93		70 - 130
13C3-GenX	100		70 - 130

Lab Sample ID: MBL 380-36625/21-A
Matrix: Water
Analysis Batch: 36779

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36625

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
N-methylperfluorooctanesulfonamide doacetic acid (NMeFOSAA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
N-ethylperfluorooctanesulfonamide doacetic acid (NEtFOSAA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: MBL 380-36625/21-A
Matrix: Water
Analysis Batch: 36779

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36625

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		04/13/23 15:07	04/15/23 13:54	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	110		70 - 130	04/13/23 15:07	04/15/23 13:54	1
13C2 PFHxA	118		70 - 130	04/13/23 15:07	04/15/23 13:54	1
13C2 PFDA	107		70 - 130	04/13/23 15:07	04/15/23 13:54	1
13C3-GenX	108		70 - 130	04/13/23 15:07	04/15/23 13:54	1

Lab Sample ID: LCS 380-36625/23-A
Matrix: Water
Analysis Batch: 36779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36625

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	52.8		ng/L		105	70 - 130
Perfluorooctanesulfonic acid (PFOS)	46.4	50.0		ng/L		108	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	50.0		ng/L		100	70 - 130
N-methylperfluorooctanesulfonamide-1-acetic acid (NMeFOSAA)	50.1	52.3		ng/L		104	70 - 130
N-ethylperfluorooctanesulfonamide-1-acetic acid (NEtFOSAA)	50.1	50.1		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	50.7		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	48.2		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	54.4		ng/L		109	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	53.1		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	45.7	50.5		ng/L		110	70 - 130
Perfluorobutanesulfonic acid (PFBS)	44.3	45.7		ng/L		103	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	57.9		ng/L		116	70 - 130
Perfluorononanoic acid (PFNA)	50.1	53.7		ng/L		107	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	44.9		ng/L		90	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	48.5		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	47.6		ng/L		102	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	46.6		ng/L		98	70 - 130

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: LCS 380-36625/23-A
Matrix: Water
Analysis Batch: 36779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36625

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	52.8		ng/L		112	70 - 130
Surrogate							
	%Recovery	LCS Qualifier	Limits				
d5-NEtFOSAA	102		70 - 130				
13C2 PFHxA	118		70 - 130				
13C2 PFDA	105		70 - 130				
13C3-GenX	111		70 - 130				

Lab Sample ID: LCSD 380-36625/24-A
Matrix: Water
Analysis Batch: 36779

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36625

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	48.8		ng/L		97	70 - 130	8	30
Perfluorooctanesulfonic acid (PFOS)	46.4	50.3		ng/L		108	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	50.1	51.9		ng/L		104	70 - 130	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	46.8		ng/L		93	70 - 130	11	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	46.8		ng/L		93	70 - 130	7	30
Perfluorohexanoic acid (PFHxA)	50.1	53.1		ng/L		106	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	50.1	50.6		ng/L		101	70 - 130	5	30
Perfluorooctanoic acid (PFOA)	50.1	54.2		ng/L		108	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	50.1	53.5		ng/L		107	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	45.7	50.1		ng/L		110	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	44.3	45.7		ng/L		103	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	50.1	54.6		ng/L		109	70 - 130	6	30
Perfluorononanoic acid (PFNA)	50.1	51.3		ng/L		102	70 - 130	5	30
Perfluorotetradecanoic acid (PFTA)	50.1	46.5		ng/L		93	70 - 130	3	30
Perfluorotridecanoic acid (PFTDA)	50.1	50.2		ng/L		100	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	48.8		ng/L		104	70 - 130	3	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	47.9		ng/L		101	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	50.3		ng/L		106	70 - 130	5	30
Surrogate									
	%Recovery	LCSD Qualifier	Limits						
d5-NEtFOSAA	96		70 - 130						
13C2 PFHxA	116		70 - 130						
13C2 PFDA	105		70 - 130						

QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: LCSD 380-36625/24-A
Matrix: Water
Analysis Batch: 36779

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36625

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
13C3-GenX	104		70 - 130

Lab Sample ID: MRL 380-36625/22-A
Matrix: Water
Analysis Batch: 36779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36625

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanesulfonic acid (PFOS)	1.86	2.30		ng/L		124	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.33		ng/L		116	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.38		ng/L		119	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.16		ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.34		ng/L		117	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.30		ng/L		115	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.62		ng/L		131	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.31		ng/L		115	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.25		ng/L		123	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	2.14		ng/L		121	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.49		ng/L		124	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.32		ng/L		116	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.04		ng/L		102	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.26		ng/L		113	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	2.07		ng/L		110	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	2.00		ng/L		106	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.26		ng/L		119	50 - 150

Surrogate	MRL MRL		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	104		70 - 130
13C2 PFHxA	119		70 - 130
13C2 PFDA	105		70 - 130
13C3-GenX	107		70 - 130

QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-1 MS
Matrix: Drinking Water
Analysis Batch: 36779

Client Sample ID: MOANALUA WELLS (331-223-TP202)
Prep Type: Total/NA
Prep Batch: 36625

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		25.1	26.3		ng/L		105	70 - 130
Perfluorooctanesulfonic acid (PFOS)	ND		23.2	27.0		ng/L		116	70 - 130
Perfluoroundecanoic acid (PFUnA)	ND		25.1	25.9		ng/L		103	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		25.1	26.7		ng/L		106	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		25.1	27.2		ng/L		108	70 - 130
Perfluorohexanoic acid (PFHxA)	ND		25.1	27.2		ng/L		108	70 - 130
Perfluorododecanoic acid (PFDoA)	ND		25.1	25.9		ng/L		103	70 - 130
Perfluorooctanoic acid (PFOA)	ND		25.1	28.2		ng/L		112	70 - 130
Perfluorodecanoic acid (PFDA)	ND		25.1	26.6		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	ND		22.9	28.1		ng/L		123	70 - 130
Perfluorobutanesulfonic acid (PFBS)	ND		22.2	27.1		ng/L		122	70 - 130
Perfluoroheptanoic acid (PFHpA)	ND		25.1	29.5		ng/L		117	70 - 130
Perfluorononanoic acid (PFNA)	ND		25.1	26.8		ng/L		107	70 - 130
Perfluorotetradecanoic acid (PFTA)	ND		25.1	23.4		ng/L		93	70 - 130
Perfluorotridecanoic acid (PFTrDA)	ND		25.1	25.4		ng/L		101	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		23.5	26.0		ng/L		111	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		23.7	25.4		ng/L		107	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		23.7	27.5		ng/L		116	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
d5-NEtFOSAA	102		70 - 130
13C2 PFHxA	117		70 - 130
13C2 PFDA	101		70 - 130
13C3-GenX	103		70 - 130

Lab Sample ID: 380-42555-1 MSD
Matrix: Drinking Water
Analysis Batch: 36779

Client Sample ID: MOANALUA WELLS (331-223-TP202)
Prep Type: Total/NA
Prep Batch: 36625

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		25.1	27.5		ng/L		109	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	ND		23.2	25.7		ng/L		110	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	ND		25.1	25.9		ng/L		103	70 - 130	0	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		25.1	26.7		ng/L		106	70 - 130	0	30

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-42555-1 MSD
Matrix: Drinking Water
Analysis Batch: 36779

Client Sample ID: MOANALUA WELLS (331-223-TP202)
Prep Type: Total/NA
Prep Batch: 36625

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		25.1	26.5		ng/L		106	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	ND		25.1	27.5		ng/L		110	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	ND		25.1	25.8		ng/L		103	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	ND		25.1	27.7		ng/L		111	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	ND		25.1	28.8		ng/L		115	70 - 130	8	30
Perfluorohexanesulfonic acid (PFHxS)	ND		22.9	25.9		ng/L		113	70 - 130	8	30
Perfluorobutanesulfonic acid (PFBS)	ND		22.2	24.4		ng/L		110	70 - 130	11	30
Perfluoroheptanoic acid (PFHpA)	ND		25.1	30.0		ng/L		120	70 - 130	2	30
Perfluorononanoic acid (PFNA)	ND		25.1	28.5		ng/L		114	70 - 130	6	30
Perfluorotetradecanoic acid (PFTA)	ND		25.1	23.8		ng/L		95	70 - 130	2	30
Perfluorotridecanoic acid (PFTTrDA)	ND		25.1	25.8		ng/L		103	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		23.5	25.3		ng/L		108	70 - 130	3	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		23.7	23.3		ng/L		98	70 - 130	8	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		23.7	26.9		ng/L		113	70 - 130	2	30
Surrogate		MSD %Recovery	MSD Qualifier	Limits							
d5-NEtFOSAA		103		70 - 130							
13C2 PFHxA		121		70 - 130							
13C2 PFDA		113		70 - 130							
13C3-GenX		110		70 - 130							

Lab Sample ID: MBL 380-36727/21-A
Matrix: Water
Analysis Batch: 36998

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36727

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: MBL 380-36727/21-A
Matrix: Water
Analysis Batch: 36998

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36727

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		04/14/23 15:30	04/18/23 05:45	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	108		70 - 130			04/14/23 15:30	04/18/23 05:45	1
13C2 PFHxA	107		70 - 130			04/14/23 15:30	04/18/23 05:45	1
13C2 PFDA	111		70 - 130			04/14/23 15:30	04/18/23 05:45	1
13C3-GenX	102		70 - 130			04/14/23 15:30	04/18/23 05:45	1

Lab Sample ID: LCS 380-36727/23-A
Matrix: Water
Analysis Batch: 36998

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36727

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	53.1		ng/L		106	70 - 130
Perfluorooctanesulfonic acid (PFOS)	46.4	49.2		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	52.5		ng/L		105	70 - 130
N-methylperfluorooctanesulfonamide-1-acetic acid (NMeFOSAA)	50.1	50.9		ng/L		102	70 - 130
N-ethylperfluorooctanesulfonamide-1-acetic acid (NEtFOSAA)	50.1	49.1		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	55.6		ng/L		111	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	53.1		ng/L		106	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	53.8		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	54.9		ng/L		110	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	45.7	48.0		ng/L		105	70 - 130
Perfluorobutanesulfonic acid (PFBS)	44.3	44.8		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	54.5		ng/L		109	70 - 130
Perfluorononanoic acid (PFNA)	50.1	57.7		ng/L		115	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	54.3		ng/L		108	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	55.5		ng/L		111	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	51.2		ng/L		109	70 - 130
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	45.9		ng/L		97	70 - 130

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: LCS 380-36727/23-A
Matrix: Water
Analysis Batch: 36998

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36727

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	52.2		ng/L		110	70 - 130
Surrogate							
	%Recovery	LCS Qualifier	Limits				
d5-NEtFOSAA	95		70 - 130				
13C2 PFHxA	114		70 - 130				
13C2 PFDA	109		70 - 130				
13C3-GenX	110		70 - 130				

Lab Sample ID: LCSD 380-36727/24-A
Matrix: Water
Analysis Batch: 36998

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36727

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.0	56.4		ng/L		113	70 - 130	6	30
Perfluorooctanesulfonic acid (PFOS)	46.3	50.9		ng/L		110	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	50.0	54.0		ng/L		108	70 - 130	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.0	49.6		ng/L		99	70 - 130	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.0	47.9		ng/L		96	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	50.0	55.5		ng/L		111	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	50.0	55.9		ng/L		112	70 - 130	5	30
Perfluorooctanoic acid (PFOA)	50.0	54.5		ng/L		109	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	50.0	54.3		ng/L		109	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	45.6	47.9		ng/L		105	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	44.3	46.5		ng/L		105	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	50.0	54.2		ng/L		108	70 - 130	1	30
Perfluorononanoic acid (PFNA)	50.0	56.7		ng/L		113	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	50.0	51.8		ng/L		104	70 - 130	5	30
Perfluorotridecanoic acid (PFTTrDA)	50.0	54.5		ng/L		109	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	52.4		ng/L		112	70 - 130	2	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	49.1		ng/L		104	70 - 130	7	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	55.1		ng/L		117	70 - 130	6	30
Surrogate									
	%Recovery	LCSD Qualifier	Limits						
d5-NEtFOSAA	96		70 - 130						
13C2 PFHxA	116		70 - 130						
13C2 PFDA	110		70 - 130						

QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: LCSD 380-36727/24-A
Matrix: Water
Analysis Batch: 36998

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36727

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
13C3-GenX	112		70 - 130

Lab Sample ID: MRL 380-36727/22-A
Matrix: Water
Analysis Batch: 36998

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36727

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec
							Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.18		ng/L		109	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.85	2.21		ng/L		119	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.42		ng/L		121	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.20		ng/L		110	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.22		ng/L		111	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.43		ng/L		122	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.46		ng/L		123	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.57		ng/L		128	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.33		ng/L		117	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.18		ng/L		119	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	2.25		ng/L		127	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.40		ng/L		120	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.55		ng/L		128	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.24		ng/L		112	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.38		ng/L		119	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	1.87	2.22		ng/L		119	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	2.08		ng/L		110	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.33		ng/L		123	50 - 150

Surrogate	MRL MRL		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	102		70 - 130
13C2 PFHxA	103		70 - 130
13C2 PFDA	101		70 - 130
13C3-GenX	98		70 - 130

QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-43486-B-1-A LMS
Matrix: Water
Analysis Batch: 36998

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 36727

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.01	2.28		ng/L		114	50 - 150
Perfluorooctanesulfonic acid (PFOS)	7.2		1.86	9.70		ng/L		135	50 - 150
Perfluoroundecanoic acid (PFUnA)	ND		2.01	2.45		ng/L		122	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.01	1.97	J	ng/L		98	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.01	1.94	J	ng/L		97	50 - 150
Perfluorohexanoic acid (PFHxA)	ND		2.01	3.20		ng/L		120	50 - 150
Perfluorododecanoic acid (PFDoA)	ND		2.01	2.37		ng/L		118	50 - 150
Perfluorooctanoic acid (PFOA)	2.2		2.01	4.59		ng/L		119	50 - 150
Perfluorodecanoic acid (PFDA)	ND		2.01	2.54		ng/L		127	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.6		1.83	4.86		ng/L		121	50 - 150
Perfluorobutanesulfonic acid (PFBS)	ND		1.78	3.15		ng/L		119	50 - 150
Perfluoroheptanoic acid (PFHpA)	ND		2.01	3.14		ng/L		125	50 - 150
Perfluorononanoic acid (PFNA)	ND		2.01	2.99		ng/L		149	50 - 150
Perfluorotetradecanoic acid (PFTA)	ND		2.01	2.29		ng/L		114	50 - 150
Perfluorotridecanoic acid (PFTrDA)	ND		2.01	2.39		ng/L		119	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.88	2.19		ng/L		117	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.90	2.03		ng/L		107	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.90	2.38		ng/L		125	50 - 150

Surrogate	LMS %Recovery	LMS Qualifier	LMS Limits
d5-NEtFOSAA	90		70 - 130
13C2 PFHxA	122		70 - 130
13C2 PFDA	109		70 - 130
13C3-GenX	112		70 - 130

Lab Sample ID: 380-43486-C-1-A LMSD
Matrix: Water
Analysis Batch: 36998

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 36727

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.01	2.29		ng/L		114	50 - 150	0	50
Perfluorooctanesulfonic acid (PFOS)	7.2		1.86	9.58		ng/L		129	50 - 150	1	50
Perfluoroundecanoic acid (PFUnA)	ND		2.01	2.28		ng/L		113	50 - 150	7	50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.01	1.93	J	ng/L		96	50 - 150	2	50

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QC Sample Results

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

Job ID: 380-42555-1

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

Lab Sample ID: 380-43486-C-1-A LMSD
Matrix: Water
Analysis Batch: 36998

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 36727

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		2.01	1.87	J	ng/L		93	50 - 150	4	50
Perfluorohexanoic acid (PFHxA)	ND		2.01	3.19		ng/L		119	50 - 150	0	50
Perfluorododecanoic acid (PFDoA)	ND		2.01	2.26		ng/L		112	50 - 150	5	50
Perfluorooctanoic acid (PFOA)	2.2		2.01	4.58		ng/L		118	50 - 150	0	50
Perfluorodecanoic acid (PFDA)	ND		2.01	2.30		ng/L		114	50 - 150	10	50
Perfluorohexanesulfonic acid (PFHxS)	2.6		1.84	4.77		ng/L		116	50 - 150	2	50
Perfluorobutanesulfonic acid (PFBS)	ND		1.78	3.02		ng/L		112	50 - 150	4	50
Perfluoroheptanoic acid (PFHpA)	ND		2.01	3.19		ng/L		127	50 - 150	1	50
Perfluorononanoic acid (PFNA)	ND		2.01	2.81		ng/L		140	50 - 150	6	50
Perfluorotetradecanoic acid (PFTA)	ND		2.01	2.26		ng/L		112	50 - 150	1	50
Perfluorotridecanoic acid (PFTTrDA)	ND		2.01	2.26		ng/L		112	50 - 150	6	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.88	2.14		ng/L		114	50 - 150	2	50
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.90	2.04		ng/L		107	50 - 150	0	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.90	2.30		ng/L		121	50 - 150	3	50
Surrogate		LMSD %Recovery	LMSD Qualifier	Limits							
d5-NEtFOSAA		87		70 - 130							
13C2 PFHxA		111		70 - 130							
13C2 PFDA		102		70 - 130							
13C3-GenX		106		70 - 130							

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Lab Sample ID: 104900-B1
Matrix: BlankMatrix
Analysis Batch: O-41030

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-41030_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Acenaphthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Acenaphthylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-42555-1

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 104900-B1
Matrix: BlankMatrix
Analysis Batch: O-41030

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-41030_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Biphenyl	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Chrysene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Dibenzothiophene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		04/06/23 00:00	04/17/23 17:50	1
Fluoranthene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Fluorene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Naphthalene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Perylene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Phenanthrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1
Pyrene	ND		0.005	0.001	µg/L		04/06/23 00:00	04/17/23 17:50	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	85		27 - 133	04/06/23 00:00	04/17/23 17:50	1
(d10-Phenanthrene)	90		43 - 129	04/06/23 00:00	04/17/23 17:50	1
(d12-Chrysene)	89		52 - 144	04/06/23 00:00	04/17/23 17:50	1
(d12-Perylene)	87		36 - 161	04/06/23 00:00	04/17/23 17:50	1
(d8-Naphthalene)	77		25 - 125	04/06/23 00:00	04/17/23 17:50	1

Lab Sample ID: 104900-BS1
Matrix: BlankMatrix
Analysis Batch: O-41030

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-41030_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1-Methylnaphthalene	0.5	0.389		µg/L		78	31 - 128
1-Methylphenanthrene	0.5	0.439		µg/L		88	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.426		µg/L		85	55 - 122
2,6-Dimethylnaphthalene	0.5	0.393		µg/L		79	48 - 120
2-Methylnaphthalene	0.5	0.386		µg/L		77	47 - 130
Acenaphthene	0.5	0.415		µg/L		83	53 - 131
Acenaphthylene	0.5	0.405		µg/L		81	43 - 140
Anthracene	0.5	0.425		µg/L		85	58 - 135
Benz[a]anthracene	0.5	0.432		µg/L		86	55 - 145
Benzo[a]pyrene	0.5	0.421		µg/L		84	51 - 143
Benzo[b]fluoranthene	0.5	0.444		µg/L		89	46 - 165
Benzo[e]pyrene	0.5	0.424		µg/L		85	42 - 152
Benzo[g,h,i]perylene	0.5	0.441		µg/L		88	63 - 133
Benzo[k]fluoranthene	0.5	0.436		µg/L		87	56 - 145
Biphenyl	0.5	0.408		µg/L		82	56 - 119
Chrysene	0.5	0.425		µg/L		85	56 - 141
Dibenz[a,h]anthracene	0.5	0.432		µg/L		86	55 - 150
Dibenzo[a,l]pyrene	0.5	0.451		µg/L		90	50 - 150
Dibenzothiophene	0.5	0.424		µg/L		85	46 - 126
Disalicylidenepropanediamine	50	31.1		µg/L		62	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-42555-1

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 104900-BS1
Matrix: BlankMatrix
Analysis Batch: O-41030

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-41030_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoranthene	0.5	0.453		µg/L		91	60 - 146
Fluorene	0.5	0.421		µg/L		84	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.438		µg/L		88	50 - 151
Naphthalene	0.5	0.385		µg/L		77	41 - 126
Perylene	0.5	0.423		µg/L		85	48 - 141
Phenanthrene	0.5	0.424		µg/L		85	67 - 127
Pyrene	0.5	0.442		µg/L		88	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
(d10-Acenaphthene)	82		27 - 133
(d10-Phenanthrene)	85		43 - 129
(d12-Chrysene)	87		52 - 144
(d12-Perylene)	84		36 - 161
(d8-Naphthalene)	73		25 - 125

Lab Sample ID: 104900-BS2
Matrix: BlankMatrix
Analysis Batch: O-41030

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-41030_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.375		µg/L		75	31 - 128	4	30
1-Methylphenanthrene	0.5	0.436		µg/L		87	66 - 127	1	30
2,3,5-Trimethylnaphthalene	0.5	0.419		µg/L		84	55 - 122	1	30
2,6-Dimethylnaphthalene	0.5	0.386		µg/L		77	48 - 120	3	30
2-Methylnaphthalene	0.5	0.382		µg/L		76	47 - 130	1	30
Acenaphthene	0.5	0.41		µg/L		82	53 - 131	1	30
Acenaphthylene	0.5	0.396		µg/L		79	43 - 140	2	30
Anthracene	0.5	0.424		µg/L		85	58 - 135	0	30
Benz[a]anthracene	0.5	0.414		µg/L		83	55 - 145	4	30
Benzo[a]pyrene	0.5	0.401		µg/L		80	51 - 143	5	30
Benzo[b]fluoranthene	0.5	0.443		µg/L		89	46 - 165	0	30
Benzo[e]pyrene	0.5	0.427		µg/L		85	42 - 152	0	30
Benzo[g,h,i]perylene	0.5	0.437		µg/L		87	63 - 133	1	30
Benzo[k]fluoranthene	0.5	0.432		µg/L		86	56 - 145	1	30
Biphenyl	0.5	0.398		µg/L		80	56 - 119	2	30
Chrysene	0.5	0.419		µg/L		84	56 - 141	1	30
Dibenz[a,h]anthracene	0.5	0.437		µg/L		87	55 - 150	1	30
Dibenzo[a,l]pyrene	0.5	0.462		µg/L		92	50 - 150	2	30
Dibenzothiophene	0.5	0.421		µg/L		84	46 - 126	1	30
Disalicylidenepropanediamine	50	36.5		µg/L		73	50 - 150	16	30
Fluoranthene	0.5	0.447		µg/L		89	60 - 146	2	30
Fluorene	0.5	0.414		µg/L		83	58 - 131	1	30
Indeno[1,2,3-cd]pyrene	0.5	0.439		µg/L		88	50 - 151	0	30
Naphthalene	0.5	0.378		µg/L		76	41 - 126	1	30
Perylene	0.5	0.418		µg/L		84	48 - 141	1	30
Phenanthrene	0.5	0.424		µg/L		85	67 - 127	0	30
Pyrene	0.5	0.441		µg/L		88	54 - 156	0	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-42555-1

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 104900-BS2
Matrix: BlankMatrix
Analysis Batch: O-41030

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-41030_P

Surrogate	LCS DUP %Recovery	LCS DUP Qualifier	Limits
(d10-Acenaphthene)	85		27 - 133
(d10-Phenanthrene)	89		43 - 129
(d12-Chrysene)	90		52 - 144
(d12-Perylene)	90		36 - 161
(d8-Naphthalene)	75		25 - 125

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Lab Sample ID: 23VGH7D05B
Matrix: WATER
Analysis Batch: 23VGH7D05

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			04/07/23 12:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE					04/07/23 12:24	1

Lab Sample ID: 23VGH7D05L
Matrix: WATER
Analysis Batch: 23VGH7D05

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
GASOLINE	0.500	0.434		mg/L		87	60 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOFLUOROBENZENE	105		70 - 130

Lab Sample ID: 23D058-01M
Matrix: WATER
Analysis Batch: 23VGH7D05

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
GASOLINE	ND		0.500	0.462		mg/L		92	50 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
BROMOFLUOROBENZENE	112		60 - 140

Lab Sample ID: 23D058-01S
Matrix: WATER
Analysis Batch: 23VGH7D05

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
GASOLINE	ND		0.500	0.449		mg/L		90	50 - 130	3	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
BROMOFLUOROBENZENE	109		60 - 140

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-42555-1

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Lab Sample ID: 23DSD016WB
Matrix: WATER
Analysis Batch: 23DSD016W

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
DIESEL	ND	U	0.025		mg/L			04/14/23 15:52	1
JP5	ND	U	0.050		mg/L			04/14/23 15:52	1
JP8	ND	U	0.050		mg/L			04/14/23 15:52	1
MOTOR OIL	ND	U	0.050		mg/L			04/14/23 15:52	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
BROMOBENZENE					04/14/23 15:52	1
HEXACOSANE					04/14/23 15:52	1

Lab Sample ID: 23DSD016WL
Matrix: WATER
Analysis Batch: 23DSD016W

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

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

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
BROMOBENZENE	70		60 - 130
HEXACOSANE	101		60 - 130

Lab Sample ID: 23J5D016WL
Matrix: WATER
Analysis Batch: 23DSD016W

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

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

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
BROMOBENZENE	91		60 - 130
HEXACOSANE	101		60 - 130

Lab Sample ID: 23J8D016WL
Matrix: WATER
Analysis Batch: 23DSD016W

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

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

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
BROMOBENZENE	98		60 - 130
HEXACOSANE	97		60 - 130

QC Association Summary

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

Job ID: 380-42555-1

GC/MS Semi VOA

Prep Batch: 35969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	525.2	
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Total/NA	Drinking Water	525.2	
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	
MB 380-35969/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-35969/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-35969/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-35969/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-42555-1 MS	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	525.2	
380-42597-1-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 36021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	525.2	35969
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	35969
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Total/NA	Drinking Water	525.2	35969
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	35969
MB 380-35969/1-A	Method Blank	Total/NA	Water	525.2	35969
LCS 380-35969/3-A	Lab Control Sample	Total/NA	Water	525.2	35969
LCSD 380-35969/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	35969
MRL 380-35969/2-A	Lab Control Sample	Total/NA	Water	525.2	35969
380-42555-1 MS	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	525.2	35969
380-42597-1-1-A DU	Duplicate	Total/NA	Water	525.2	35969

LCMS

Prep Batch: 36405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1 DW	
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Total/NA	Drinking Water	537.1 DW	
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1 DW	
MBL 380-36405/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-36405/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-36405/24-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-36405/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-42020-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-42020-A-2-A DU	Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 36625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	
380-42555-9	FB:MOANALUA WELLS (331-223-TP202)	Total/NA	Water	537.1 DW	
380-42555-10	FB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	537.1 DW	
380-42555-12	FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	Total/NA	Water	537.1 DW	
MBL 380-36625/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-36625/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-36625/24-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-36625/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-42555-1 MS	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	
380-42555-1 MSD	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	

QC Association Summary

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

Job ID: 380-42555-1

LCMS

Prep Batch: 36727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-11	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	537.1 DW	
MBL 380-36727/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-36727/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-36727/24-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-36727/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-43486-B-1-A LMS	Matrix Spike	Total/NA	Water	537.1 DW	
380-43486-C-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 36776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1	36405
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	537.1	36405
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1	36405
MBL 380-36405/21-A	Method Blank	Total/NA	Water	537.1	36405
LCS 380-36405/23-A	Lab Control Sample	Total/NA	Water	537.1	36405
LCSD 380-36405/24-A	Lab Control Sample Dup	Total/NA	Water	537.1	36405
MRL 380-36405/22-A	Lab Control Sample	Total/NA	Water	537.1	36405
380-42020-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	36405
380-42020-A-2-A DU	Duplicate	Total/NA	Water	537.1	36405

Analysis Batch: 36779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1	36625
380-42555-9	FB:MOANALUA WELLS (331-223-TP202)	Total/NA	Water	537.1	36625
380-42555-10	FB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	537.1	36625
380-42555-12	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	537.1	36625
MBL 380-36625/21-A	Method Blank	Total/NA	Water	537.1	36625
LCS 380-36625/23-A	Lab Control Sample	Total/NA	Water	537.1	36625
LCSD 380-36625/24-A	Lab Control Sample Dup	Total/NA	Water	537.1	36625
MRL 380-36625/22-A	Lab Control Sample	Total/NA	Water	537.1	36625
380-42555-1 MS	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1	36625
380-42555-1 MSD	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1	36625

Analysis Batch: 36998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-11	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	537.1	36727
MBL 380-36727/21-A	Method Blank	Total/NA	Water	537.1	36727
LCS 380-36727/23-A	Lab Control Sample	Total/NA	Water	537.1	36727
LCSD 380-36727/24-A	Lab Control Sample Dup	Total/NA	Water	537.1	36727
MRL 380-36727/22-A	Lab Control Sample	Total/NA	Water	537.1	36727
380-43486-B-1-A LMS	Matrix Spike	Total/NA	Water	537.1	36727
380-43486-C-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	537.1	36727

Subcontract

Analysis Batch: O-41030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-41030_P
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-41030_P

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-42555-1

Subcontract (Continued)

Analysis Batch: O-41030 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-41030_P
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-41030_P
104900-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-41030_P
104900-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-41030_P
104900-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-41030_P

Analysis Batch: 23DSD016W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
23DSD016WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23DSD016WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J5D016WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J8D016WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

Analysis Batch: 23VGH7D05

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-42555-5	TB:MOANALUA WELLS (331-223-TP202)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-42555-6	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-42555-1

Subcontract (Continued)

Analysis Batch: 23VGH7D05 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-7	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-42555-8	TB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VGH7D05B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VGH7D05L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23D058-01M	Matrix Spike	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23D058-01S	Matrix Spike Duplicate	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-41030_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-42555-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	EPA_625	
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	EPA_625	
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	EPA_625	
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	EPA_625	
104900-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
104900-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
104900-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-42555-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-42555-1

Date Collected: 04/03/23 10:09

Matrix: Drinking Water

Date Received: 04/05/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			35969	N8NE	EA POM	04/06/23 16:50
Total/NA	Analysis	525.2		1	36021	Q8LA	EA POM	04/07/23 14:15
Total/NA	Prep	537.1 DW			36625	P8ZX	EA POM	04/13/23 15:07
Total/NA	Analysis	537.1		1	36779	UKYM	EA POM	04/15/23 14:33
Total/NA	Prep	EPA_625		1	O-41030_P			04/06/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-41030	YC		04/17/23 23:04
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7D05	SCerva		04/07/23 14:16
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSD016W	SDees		04/14/23 18:02

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

Lab Sample ID: 380-42555-2

Date Collected: 04/03/23 11:52

Matrix: Drinking Water

Date Received: 04/05/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			35969	N8NE	EA POM	04/06/23 16:50
Total/NA	Analysis	525.2		1	36021	Q8LA	EA POM	04/07/23 14:35
Total/NA	Prep	537.1 DW			36405	US1B	EA POM	04/12/23 11:00
Total/NA	Analysis	537.1		1	36776	UKYM	EA POM	04/15/23 13:04
Total/NA	Prep	EPA_625		1	O-41030_P			04/06/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-41030	YC		04/18/23 00:49
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7D05	SCerva		04/07/23 16:08
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSD016W	SDees		04/14/23 18:21

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

Lab Sample ID: 380-42555-3

Date Collected: 04/03/23 11:07

Matrix: Drinking Water

Date Received: 04/05/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			35969	N8NE	EA POM	04/06/23 16:50
Total/NA	Analysis	525.2		1	36021	Q8LA	EA POM	04/07/23 14:56
Total/NA	Prep	537.1 DW			36405	US1B	EA POM	04/12/23 11:00
Total/NA	Analysis	537.1		1	36776	UKYM	EA POM	04/15/23 13:14
Total/NA	Prep	EPA_625		1	O-41030_P			04/06/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-41030	YC		04/18/23 02:33
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7D05	SCerva		04/07/23 16:46
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSD016W	SDees		04/14/23 18:39

Eurofins Eaton Analytical Pomona

Lab Chronicle

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

Job ID: 380-42555-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-42555-4

Date Collected: 04/03/23 10:30

Matrix: Drinking Water

Date Received: 04/05/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			35969	N8NE	EA POM	04/06/23 16:50
Total/NA	Analysis	525.2		1	36021	Q8LA	EA POM	04/07/23 15:36
Total/NA	Prep	537.1 DW			36405	US1B	EA POM	04/12/23 11:00
Total/NA	Analysis	537.1		1	36776	UKYM	EA POM	04/15/23 13:23
Total/NA	Prep	EPA_625		1	O-41030_P			04/06/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-41030	YC		04/18/23 04:18
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7D05	SCerva		04/07/23 17:23
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSD016W	SDees		04/14/23 18:58

Client Sample ID: TB:MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-42555-5

Date Collected: 04/03/23 10:09

Matrix: Water

Date Received: 04/05/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7D05	SCerva		04/07/23 18:00

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

Lab Sample ID: 380-42555-6

Date Collected: 04/03/23 11:52

Matrix: Water

Date Received: 04/05/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7D05	SCerva		04/07/23 18:38

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

Lab Sample ID: 380-42555-7

Date Collected: 04/03/23 11:07

Matrix: Water

Date Received: 04/05/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7D05	SCerva		04/07/23 19:52

**Client Sample ID: TB: HALAWA WELLS UNITS 1&2
(331-206-TP065)**

Lab Sample ID: 380-42555-8

Date Collected: 04/03/23 10:30

Matrix: Water

Date Received: 04/05/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7D05	SCerva		04/07/23 20:30

Eurofins Eaton Analytical Pomona

Lab Chronicle

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

Job ID: 380-42555-1

Client Sample ID: FB:MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-42555-9

Date Collected: 04/03/23 10:09

Matrix: Water

Date Received: 04/05/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			36625	P8ZX	EA POM	04/13/23 15:07
Total/NA	Analysis	537.1		1	36779	UKYM	EA POM	04/15/23 15:02

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

Lab Sample ID: 380-42555-10

Date Collected: 04/03/23 11:52

Matrix: Water

Date Received: 04/05/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			36625	P8ZX	EA POM	04/13/23 15:07
Total/NA	Analysis	537.1		1	36779	UKYM	EA POM	04/15/23 15:12

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

Lab Sample ID: 380-42555-11

Date Collected: 04/03/23 11:07

Matrix: Water

Date Received: 04/05/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			36727	P8ZX	EA POM	04/14/23 15:30
Total/NA	Analysis	537.1		1	36998	UKYM	EA POM	04/18/23 07:22

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-42555-12

Date Collected: 04/03/23 10:30

Matrix: Water

Date Received: 04/05/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			36625	P8ZX	EA POM	04/13/23 15:07
Total/NA	Analysis	537.1		1	36779	UKYM	EA POM	04/15/23 15:21

Laboratory References:

= Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806

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

Accreditation/Certification Summary

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

Job ID: 380-42555-1

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	05-29-23

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

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

Accreditation/Certification Summary

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

Job ID: 380-42555-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Molinate
525.2	525.2	Drinking Water	Naphthalene
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Phenanthrene
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	Terbutylazine
525.2	525.2	Drinking Water	Thiobencarb
525.2	525.2	Drinking Water	Total Permethrin (mixed isomers)
525.2	525.2	Drinking Water	trans-Nonachlor
525.2	525.2	Drinking Water	Trifluralin
537.1	537.1 DW	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
537.1	537.1 DW	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)

Method Summary

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

Job ID: 380-42555-1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
8015	8015 - TPH DRO/ORO	EPA	
8015B	SW846 8015B Gasoline Range Organics	SW846	
525.2	Extraction of Semivolatile Compounds	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

= Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806

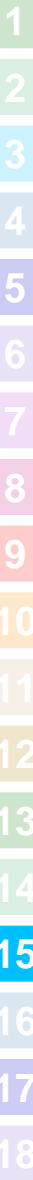
EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Sample Summary

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

Job ID: 380-42555-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-42555-1	MOANALUA WELLS (331-223-TP202)	Drinking Water	04/03/23 10:09	04/05/23 10:20	HI0000331
380-42555-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	04/03/23 11:52	04/05/23 10:20	HI0000331
380-42555-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	04/03/23 11:07	04/05/23 10:20	HI0000331
380-42555-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Drinking Water	04/03/23 10:30	04/05/23 10:20	HI0000331
380-42555-5	TB:MOANALUA WELLS (331-223-TP202)	Water	04/03/23 10:09	04/05/23 10:20	
380-42555-6	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Water	04/03/23 11:52	04/05/23 10:20	
380-42555-7	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	04/03/23 11:07	04/05/23 10:20	
380-42555-8	TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	Water	04/03/23 10:30	04/05/23 10:20	
380-42555-9	FB:MOANALUA WELLS (331-223-TP202)	Water	04/03/23 10:09	04/05/23 10:20	
380-42555-10	FB:AIEA GULCH WELLS P2 (331-202-TP072)	Water	04/03/23 11:52	04/05/23 10:20	
380-42555-11	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	04/03/23 11:07	04/05/23 10:20	
380-42555-12	FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	Water	04/03/23 10:30	04/05/23 10:20	





3051 Fujita Street
 Torrance, CA 90505
 Tel: (310)-618-8889

Date: 05-10-2023
 EMAX Batch No.: 23D058

Attn: Jackie Contreras

Eurofins Eaton Analytical
 750 Royal Oaks Dr., Suite 100
 Monrovia, CA 91016-3629

Subject: Laboratory Report
 Project: 380-42555

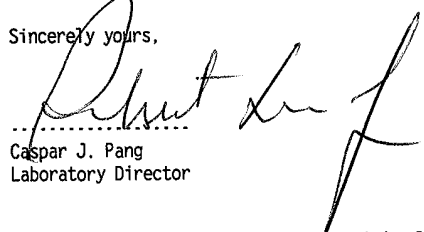
Enclosed is the Laboratory report for samples received on 04/06/23.
 The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-42555-1	D058-01	04/03/23	WATER	TPH GASOLINE TPH
380-42555-2	D058-02	04/03/23	WATER	TPH GASOLINE TPH
380-42555-3	D058-03	04/03/23	WATER	TPH GASOLINE TPH
380-42555-4	D058-04	04/03/23	WATER	TPH GASOLINE TPH
380-42555-5	D058-05	04/03/23	WATER	TPH GASOLINE
380-42555-6	D058-06	04/03/23	WATER	TPH GASOLINE
380-42555-7	D058-07	04/03/23	WATER	TPH GASOLINE
380-42555-8	D058-08	04/03/23	WATER	TPH GASOLINE
380-42555-1MS	D058-01M	04/03/23	WATER	TPH GASOLINE
380-42555-1MSD	D058-01S	04/03/23	WATER	TPH GASOLINE

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,



Caspar J. Pang
 Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912022-24
 ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
 California ELAP Accredited Certificate Number 2672



REFERENCE: EMAX-SM02 Rev. 12
SAMPLE RECEIPT FORM 1

Type of Delivery <input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others	Airbill / Tracking Number	ECN 23 D058
<input type="checkbox"/> EMAX Courier <input checked="" type="checkbox"/> Client Delivery		Recipient <u>Jhevi M Zamora</u>
		Date <u>04/06/23</u> Time <u>14:29</u>

COC INSPECTION

<input checked="" type="checkbox"/> Client Name	<input checked="" type="checkbox"/> Client PM/FC	<input type="checkbox"/> Sampler Name	<input checked="" type="checkbox"/> Sampling Date/Time	<input checked="" type="checkbox"/> Sample ID	<input checked="" type="checkbox"/> Matrix
<input type="checkbox"/> Address	<input checked="" type="checkbox"/> Tel # / Fax #	<input type="checkbox"/> Courier Signature	<input checked="" type="checkbox"/> Analysis Required	<input type="checkbox"/> Preservative (if any)	<input checked="" type="checkbox"/> TAT
Safety Issues (if any)	<input type="checkbox"/> High concentrations expected	<input type="checkbox"/> From Superfund Site	<input type="checkbox"/> Rad screening required		

Note:

PACKAGING INSPECTION

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition <u>correction</u>	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging <u>factor: -0.2</u>	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures (Cool, ≤6 °C but not frozen)	<input checked="" type="checkbox"/> Cooler 1 <u>3.3/3.0</u> °C	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
Thermometer: <u>A - S/N 221052760</u>	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
	<input checked="" type="checkbox"/> B - S/N <u>210760237</u>	<input type="checkbox"/> Cooler 9 _____ °C	<input type="checkbox"/> Cooler 10 _____ °C
		<input type="checkbox"/> C - S/N _____	<input type="checkbox"/> D - S/N _____

Comments: Temperature is out of range. PM was informed IMMEDIATELY.

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
<u>1-4</u>	<u>5,6,11,12,17,18,23,24</u>	<u>D1</u>	<u>JPS/JPS not on label</u>	<u>R1</u>
<u>1-4</u>	<u>1-4,6-10,13-16, 26-22</u>	<u>D22</u>	<u>2nd date reads: 4/2/23</u>	
<u>5,7,8</u>	<u>25,26,29,30,32</u>	<u>D22</u>	<u>2nd date ^{MR-4/6/23} reads: 3/27/23</u>	
<u>4/6/23</u>				
<u>EA 4/7/23</u>				

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? YES NO

LEGEND:

Code Description-Sample Management	Code Description-Sample Management	Code Description-Sample Management
<u>D1</u> Analysis is not indicated in <u>label</u>	D13 Out of Holding Time	<input type="checkbox"/> Continue to next page.
D2 Analysis mismatch COC vs label	D14 Bubble is >6mm	R1 Proceed as indicated in <input checked="" type="checkbox"/> COC <input type="checkbox"/> Label
D3 Sample ID mismatch COC vs label	D15 No trip blank in cooler	R2 Refer to attached instruction
D4 Sample ID is not indicated in _____	D16 Preservation not indicated in _____	R3 Cancel the analysis
D5 Container-[improper] [leaking] [broken]	D17 Preservation mismatch COC vs label	R4 Use vial with smallest bubble first
D6 Date/Time is not indicated in _____	D18 Insufficient chemical preservative	R5 Log-in with latest sampling date and time+1 min
D7 Date/Time mismatch COC vs label	D19 Insufficient Sample	R6 Adjust pH as necessary
D8 Sample listed in COC is not received	D20 No filtration info for dissolved analysis	R7 Filter and preserved as necessary
D9 Sample received is not listed in COC	D21 No sample for moisture determination	R8 _____
D10 No initial/date on corrections in COC/label	<u>D22</u> 2nd Date of time on label is <u>incorrect</u>	R9 _____
D11 Container count mismatch COC vs received	D23 _____	R10 _____
D12 Container size mismatch COC vs received	D24 _____	R11 _____
		R12 _____

REVIEWS:

Sample Labeling Maria Rivera Rivera SRF Alpina PM EA for RB
Date 04/06/23 4/6/23 Date 4/7/23

REPORT ID: 23D058

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-42555

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 23D058



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-42555

SDG : 23D058

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of eight(8) water samples were received on 04/06/23 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method 5030B/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VGH7D05B - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample

Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. VGH7D05L/VGH7D05C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Gasoline was within MS QC limits in D058-01M/D058-01S. Refer to Matrix QC summary form for details.

Surrogate

Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis

Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG NO. : 23D058
Instrument ID : H7

Client : EUROFINS EATON ANALYTICAL
Project : 380-42555

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	WATER		Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
				Analysis Date/Time	Extraction Date/Time					
MBLK1W	VGH7D05B	1	NA	04/07/2312:24	04/07/2312:24	AD07005A	AD07004A	23VGH7D05	Method Blank	
LCS1W	VGH7D05L	1	NA	04/07/2313:02	04/07/2313:02	AD07006A	AD07004A	23VGH7D05	Lab Control Sample (LCS)	
LCD1W	VGH7D05C	1	NA	04/07/2313:39	04/07/2313:39	AD07007A	AD07004A	23VGH7D05	LCS Duplicate	
380-42555-1	D058-01	1	NA	04/07/2314:16	04/07/2314:16	AD07008A	AD07004A	23VGH7D05	Field Sample	
380-42555-1MS	D058-01M	1	NA	04/07/2314:54	04/07/2314:54	AD07009A	AD07004A	23VGH7D05	Matrix Spike Sample (MS)	
380-42555-1MSD	D058-01S	1	NA	04/07/2315:31	04/07/2315:31	AD07010A	AD07004A	23VGH7D05	MS Duplicate (MSD)	
380-42555-2	D058-02	1	NA	04/07/2316:08	04/07/2316:08	AD07011A	AD07004A	23VGH7D05	Field Sample	
380-42555-3	D058-03	1	NA	04/07/2316:46	04/07/2316:46	AD07012A	AD07004A	23VGH7D05	Field Sample	
380-42555-4	D058-04	1	NA	04/07/2317:23	04/07/2317:23	AD07013A	AD07004A	23VGH7D05	Field Sample	
380-42555-5	D058-05	1	NA	04/07/2318:00	04/07/2318:00	AD07014A	AD07004A	23VGH7D05	Field Sample	
380-42555-6	D058-06	1	NA	04/07/2318:38	04/07/2318:38	AD07015A	AD07004A	23VGH7D05	Field Sample	
380-42555-7	D058-07	1	NA	04/07/2319:52	04/07/2319:52	AD07017A	AD07016A	23VGH7D05	Field Sample	
380-42555-8	D058-08	1	NA	04/07/2320:30	04/07/2320:30	AD07018A	AD07016A	23VGH7D05	Field Sample	

FN - Filename
% Moist - Percent Moisture



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SAMPLE RESULTS

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL	Date Collected: 04/03/23 11:52
Project : 380-42555	Date Received: 04/06/23
Batch No. : 23D058	Date Extracted: 04/07/23 16:08
Sample ID : 380-42555-2	Date Analyzed: 04/07/23 16:08
Lab Samp ID: D058-02	Dilution Factor: 1
Lab File ID: AD07011A	Matrix: WATER
Ext Btch ID: 23VGH7D05	% Moisture: NA
Calib. Ref.: AD07004A	Instrument ID: H7

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0344	0.0400	86	60-140

Notes:

Parameter H-C Range

Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 5ml

Final Volume : 5ml

Prepared by : SCerva

Analyzed by : SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL	Date Collected: 04/03/23 11:07
Project : 380-42555	Date Received: 04/06/23
Batch No. : 23D058	Date Extracted: 04/07/23 16:46
Sample ID : 380-42555-3	Date Analyzed: 04/07/23 16:46
Lab Samp ID: D058-03	Dilution Factor: 1
Lab File ID: AD07012A	Matrix: WATER
Ext Btch ID: 23VGH7D05	% Moisture: NA
Calib. Ref.: AD07004A	Instrument ID: H7

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0348	0.0400	87	60-140

Notes:

Parameter H-C Range
Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 5ml	Final Volume : 5ml
Prepared by : SCerva	Analyzed by : SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/03/23 10:30
Project	: 380-42555	Date Received:	04/06/23
Batch No.	: 23D058	Date Extracted:	04/07/23 17:23
Sample ID	: 380-42555-4	Date Analyzed:	04/07/23 17:23
Lab Samp ID:	D058-04	Dilution Factor:	1
Lab File ID:	AD07013A	Matrix:	WATER
Ext Btch ID:	23VGH7D05	% Moisture:	NA
Calib. Ref.:	AD07004A	Instrument ID:	H7

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
-----	-----	-----	-----
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
-----	-----	-----	-----	-----
Bromofluorobenzene	0.0354	0.0400	88	60-140

Notes:

Parameter H-C Range
Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 04/03/23 10:09
Project     : 380-42555                   Date Received: 04/06/23
Batch No.   : 23D058                       Date Extracted: 04/07/23 18:00
Sample ID   : 380-42555-5                 Date Analyzed: 04/07/23 18:00
Lab Samp ID: D058-05                       Dilution Factor: 1
Lab File ID: AD07014A                       Matrix: WATER
Ext Btch ID: 23VGH7D05                       % Moisture: NA
Calib. Ref.: AD07004A                       Instrument ID: H7
=====

```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)		
-----	-----	-----	-----		
GASOLINE	ND	0.020	0.010		
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT	
-----	-----	-----	-----	-----	
Bromofluorobenzene	0.0353	0.0400	88	60-140	

Notes:

Parameter H-C Range

Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 5ml

Final Volume : 5ml

Prepared by : SCerva

Analyzed by : SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL Date Collected: 04/03/23 11:52
Project : 380-42555 Date Received: 04/06/23
Batch No. : 23D058 Date Extracted: 04/07/23 18:38
Sample ID : 380-42555-6 Date Analyzed: 04/07/23 18:38
Lab Samp ID: D058-06 Dilution Factor: 1
Lab File ID: AD07015A Matrix: WATER
Ext Btch ID: 23VGH7D05 % Moisture: NA
Calib. Ref.: AD07004A Instrument ID: H7

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
-----	-----	-----	-----	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
-----	-----	-----	-----	-----
Bromofluorobenzene	0.0362	0.0400	91	60-140

Notes:

Parameter H-C Range

Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 5ml

Final Volume : 5ml

Prepared by : SCerva

Analyzed by : SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 04/03/23 11:07
Project     : 380-42555                   Date Received: 04/06/23
Batch No.   : 23D058                       Date Extracted: 04/07/23 19:52
Sample ID   : 380-42555-7                 Date Analyzed: 04/07/23 19:52
Lab Samp ID : D058-07                     Dilution Factor: 1
Lab File ID : AD07017A                    Matrix: WATER
Ext Btch ID : 23VGH7D05                   % Moisture: NA
Calib. Ref. : AD07016A                    Instrument ID: H7
=====
  
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
-----	-----	-----	-----	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
-----	-----	-----	-----	-----
Bromofluorobenzene	0.0351	0.0400	88	60-140

Notes:

Parameter H-C Range

Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 5ml

Final Volume : 5ml

Prepared by : SCerva

Analyzed by : SCerva

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QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-42555
BATCH NO. : 23D058
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VGH7D05B	VGH7D05L	VGH7D05C
LAB FILE ID	: AD07005A	AD07006A	AD07007A
DATE PREPARED	: 04/07/23 12:24	04/07/23 13:02	04/07/23 13:39
DATE ANALYZED	: 04/07/23 12:24	04/07/23 13:02	04/07/23 13:39
PREP BATCH	: 23VGH7D05	23VGH7D05	23VGH7D05
CALIBRATION REF:	AD07004A	AD07004A	AD07004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.434	87	0.500	0.455	91	5	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0420	105	0.0400	0.0430	108	70-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-42555
BATCH NO. : 23D058
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-42555-1	380-42555-1MS	380-42555-1MSD
LAB SAMPLE ID	: D058-01	D058-01M	D058-01S
LAB FILE ID	: AD07008A	AD07009A	AD07010A
DATE PREPARED	: 04/07/23 14:16	04/07/23 14:54	04/07/23 15:31
DATE ANALYZED	: 04/07/23 14:16	04/07/23 14:54	04/07/23 15:31
PREP BATCH	: 23VGH7D05	23VGH7D05	23VGH7D05
CALIBRATION REF:	AD07004A	AD07004A	AD07004A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.462	92	0.500	0.449	90	3	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0447	112	0.0400	0.0437	109	60-140

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-42555

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23D058



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-42555

SDG : 23D058

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

A total of four(4) water samples were received on 04/06/23 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSD016WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample

Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. DSD016WL/DSD016WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Diesel was within MS QC limits in 23D125-01M/23D125-01S. Refer to Matrix QC summary form for details.

Surrogate

Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis

Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-42555

SDG : 23D058

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of four(4) water samples were received on 04/06/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSD016WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample

Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. J5D016WL/J5D016WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. JP5 was within MS QC limits in 23D125-01M/23D125-01S. Refer to Matrix QC summary form for details.

Surrogate

Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis

Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-42555

SDG : 23D058

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of four(4) water samples were received on 04/06/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSD016WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample

Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. J8D016WL/J8D016WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG.

Surrogate

Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis

Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
 Project : 380-42555
 Laboratory Sample ID : DSD016WB
 SDG NO. : 23D058
 Instrument ID : D5

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis Date/Time	Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
									WATER
MBLK1W	DSD016WB	1	NA	04/14/2315:52	04/13/2313:15	LD13078A	LD13072A	23DSD016W	Method Blank
LCS1W	DSD016WL	1	NA	04/14/2316:10	04/13/2313:15	LD13079A	LD13072A	23DSD016W	Lab Control Sample (LCS)
LCD1W	DSD016WC	1	NA	04/14/2316:29	04/13/2313:15	LD13080A	LD13072A	23DSD016W	LCS Duplicate
380-42555-1	D058-01	1	NA	04/14/2318:02	04/13/2313:15	LD13085A	LD13072A	23DSD016W	Field Sample
380-42555-2	D058-02	1	NA	04/14/2318:21	04/13/2313:15	LD13086A	LD13072A	23DSD016W	Field Sample
380-42555-3	D058-03	1	NA	04/14/2318:39	04/13/2313:15	LD13087A	LD13072A	23DSD016W	Field Sample
380-42555-4	D058-04	1	NA	04/14/2318:58	04/13/2313:15	LD13088A	LD13072A	23DSD016W	Field Sample

FN - Filename
 % Moist - Percent Moisture



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SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 04/03/23 10:09
Project : 380-42555	Date Received: 04/06/23
Batch No. : 23D058	Date Extracted: 04/13/23 13:15
Sample ID : 380-42555-1	Date Analyzed: 04/14/23 18:02
Lab Samp ID: 23D058-01	Dilution Factor: 1
Lab File ID: LD13085A	Matrix: WATER
Ext Btch ID: 23DSD016W	% Moisture: NA
Calib. Ref.: LD13072A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.027	0.014	
Motor Oil	ND	0.054	0.027	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.428	0.540	79	60-130
Hexacosane	0.120	0.135	89	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 930ml	Final Volume : 5ml
Prepared by : P0reto	Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/03/23 10:09
Project	: 380-42555	Date Received:	04/06/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: 380-42555-1	Date Analyzed:	04/14/23 18:02
Lab Samp ID:	23D058-01	Dilution Factor:	1
Lab File ID:	LD13085A	Matrix:	WATER
Ext Btch ID:	23DS0016W	% Moisture:	NA
Calib. Ref.:	LD13073A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.054	0.027

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.428	0.540	79	60-130
Hexacosane	0.120	0.135	89	60-130

Notes:

RL : Reporting Limit
 Parameter H-C Range
 JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 930ml Final Volume : 5ml
 Prepared by : P0reto Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/03/23 10:09
Project	: 380-42555	Date Received:	04/06/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: 380-42555-1	Date Analyzed:	04/14/23 18:02
Lab Samp ID:	23D058-01	Dilution Factor:	1
Lab File ID:	LD13085A	Matrix:	WATER
Ext Btch ID:	23DSD016W	% Moisture:	NA
Calib. Ref.:	LD13074A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.054	0.027

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.428	0.540	79	60-130
Hexacosane	0.120	0.135	89	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 930ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/03/23 11:52
Project	: 380-42555	Date Received:	04/06/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: 380-42555-2	Date Analyzed:	04/14/23 18:21
Lab Samp ID:	23D058-02	Dilution Factor:	1
Lab File ID:	LD13086A	Matrix:	WATER
Ext Btch ID:	23DSD016W	% Moisture:	NA
Calib. Ref.:	LD13072A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.026	0.013
Motor Oil	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.425	0.525	81	60-130
Hexacosane	0.133	0.131	101	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 950ml	Final Volume	: 5ml
Prepared by	: P0reto	Analyzed by	: SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/03/23 11:52
Project	: 380-42555	Date Received:	04/06/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: 380-42555-2	Date Analyzed:	04/14/23 18:21
Lab Samp ID:	23D058-02	Dilution Factor:	1
Lab File ID:	LD13086A	Matrix:	WATER
Ext Btch ID:	23DSD016W	% Moisture:	NA
Calib. Ref.:	LD13073A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.425	0.525	81	60-130
Hexacosane	0.133	0.131	101	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 950ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/03/23 11:52
Project	: 380-42555	Date Received:	04/06/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: 380-42555-2	Date Analyzed:	04/14/23 18:21
Lab Samp ID:	23D058-02	Dilution Factor:	1
Lab File ID:	LD13086A	Matrix:	WATER
Ext Btch ID:	23DSD016W	% Moisture:	NA
Calib. Ref.:	LD13074A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.425	0.525	81	60-130
Hexacosane	0.133	0.131	101	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 950ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/03/23 11:07
Project	: 380-42555	Date Received:	04/06/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: 380-42555-3	Date Analyzed:	04/14/23 18:39
Lab Samp ID:	23D058-03	Dilution Factor:	1
Lab File ID:	LD13087A	Matrix:	WATER
Ext Btch ID:	23DSD016W	% Moisture:	NA
Calib. Ref.:	LD13072A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.025	0.012	
Motor Oil	ND	0.050	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.357	0.500	71	60-130
Hexacosane	0.111	0.125	89	60-130

Notes:

Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml Final Volume : 5ml
Prepared by : P0reto Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/03/23 11:07
Project	: 380-42555	Date Received:	04/06/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: 380-42555-3	Date Analyzed:	04/14/23 18:39
Lab Samp ID:	23D058-03	Dilution Factor:	1
Lab File ID:	LD13087A	Matrix:	WATER
Ext Btch ID:	23DSD016W	% Moisture:	NA
Calib. Ref.:	LD13073A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP5	ND	0.050	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.357	0.500	71	60-130
Hexacosane	0.111	0.125	89	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/03/23 11:07
Project	: 380-42555	Date Received:	04/06/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: 380-42555-3	Date Analyzed:	04/14/23 18:39
Lab Samp ID:	23D058-03	Dilution Factor:	1
Lab File ID:	LD13087A	Matrix:	WATER
Ext Btch ID:	23DSD016W	% Moisture:	NA
Calib. Ref.:	LD13074A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP8	ND	0.050	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.357	0.500	71	60-130
Hexacosane	0.111	0.125	89	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL Date Collected: 04/03/23 10:30
 Project : 380-42555 Date Received: 04/06/23
 Batch No. : 23D058 Date Extracted: 04/13/23 13:15
 Sample ID : 380-42555-4 Date Analyzed: 04/14/23 18:58
 Lab Samp ID: 23D058-04 Dilution Factor: 1
 Lab File ID: LD13088A Matrix: WATER
 Ext Btch ID: 23DSD016W % Moisture: NA
 Calib. Ref.: LD13072A Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.028	0.014
Motor Oil	ND	0.057	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.454	0.570	80	60-130
Hexacosane	0.134	0.142	94	60-130

Notes:

Parameter H-C Range
 Diesel C10-C24
 Motor Oil C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 880ml Final Volume : 5ml
 Prepared by : P0reto Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/03/23 10:30
Project	: 380-42555	Date Received:	04/06/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: 380-42555-4	Date Analyzed:	04/14/23 18:58
Lab Samp ID:	23D058-04	Dilution Factor:	1
Lab File ID:	LD13088A	Matrix:	WATER
Ext Btch ID:	23DSD016W	% Moisture:	NA
Calib. Ref.:	LD13073A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.057	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.454	0.570	80	60-130
Hexacosane	0.134	0.142	94	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 880ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/03/23 10:30
Project	: 380-42555	Date Received:	04/06/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: 380-42555-4	Date Analyzed:	04/14/23 18:58
Lab Samp ID:	23D058-04	Dilution Factor:	1
Lab File ID:	LD13088A	Matrix:	WATER
Ext Btch ID:	23DSD016W	% Moisture:	NA
Calib. Ref.:	LD13074A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.057	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.454	0.570	80	60-130
Hexacosane	0.134	0.142	94	60-130

Notes:

RL : Reporting Limit
 Parameter H-C Range
 JP8 C8-C18
 Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
 Sample Amount : 880ml Final Volume : 5ml
 Prepared by : P0reto Analyzed by : SDeeso

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QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/13/23 13:15
Project	: 380-42555	Date Received:	04/13/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: MBLK1W	Date Analyzed:	04/14/23 15:52
Lab Samp ID:	DSD016WB	Dilution Factor:	1
Lab File ID:	LD13078A	Matrix:	WATER
Ext Btch ID:	23DSD016W	% Moisture:	NA
Calib. Ref.:	LD13072A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.025	0.012	
Motor Oil	ND	0.050	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.424	0.500	85	60-130
Hexacosane	0.125	0.125	100	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1000ml	Final Volume	: 5ml
Prepared by	: P0reto	Analyzed by	: SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-42555
BATCH NO. : 23D058
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W LCD1W
LAB SAMPLE ID : DSD016WB DSD016WL DSD016WC
LAB FILE ID : LD13078A LD13079A LD13080A
DATE PREPARED : 04/13/23 13:15 04/13/23 13:15 04/13/23 13:15
DATE ANALYZED : 04/14/23 15:52 04/14/23 16:10 04/14/23 16:29
PREP BATCH : 23DSD016W 23DSD016W 23DSD016W
CALIBRATION REF: LD13072A LD13072A LD13072A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.50	2.17	87	2.50	2.14	86	1	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.349	70	0.500	0.416	83	60-130
Hexacosane	0.125	0.126	101	0.125	0.128	102	60-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/13/23 13:15
Project	: 380-42555	Date Received:	04/13/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: MBLK1W	Date Analyzed:	04/14/23 15:52
Lab Samp ID:	DSD016WB	Dilution Factor:	1
Lab File ID:	LD13078A	Matrix:	WATER
Ext Btch ID:	23DSD016W	% Moisture:	NA
Calib. Ref.:	LD13073A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP5	ND	0.050	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.424	0.500	85	60-130
Hexacosane	0.125	0.125	100	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-42555
BATCH NO. : 23D058
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSD016WB	J5D016WL	J5D016WC
LAB FILE ID	: LD13078A	LD13081A	LD13082A
DATE PREPARED	: 04/13/23 13:15	04/13/23 13:15	04/13/23 13:15
DATE ANALYZED	: 04/14/23 15:52	04/14/23 16:48	04/14/23 17:06
PREP BATCH	: 23DSD016W	23DSD016W	23DSD016W
CALIBRATION REF:	LD13073A	LD13073A	LD13073A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.50	2.05	82	2.50	1.79	72	14	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.453	91	0.500	0.392	78	60-130
Hexacosane	0.125	0.126	101	0.125	0.114	91	60-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/13/23 13:15
Project	: 380-42555	Date Received:	04/13/23
Batch No.	: 23D058	Date Extracted:	04/13/23 13:15
Sample ID	: MBLK1W	Date Analyzed:	04/14/23 15:52
Lab Samp ID:	DSD016WB	Dilution Factor:	1
Lab File ID:	LD13078A	Matrix:	WATER
Ext Btch ID:	23DSD016W	% Moisture:	NA
Calib. Ref.:	LD13074A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.424	0.500	85	60-130
Hexacosane	0.125	0.125	100	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-42555
BATCH NO. : 23D058
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSD016WB	J8D016WL	J8D016WC
LAB FILE ID	: LD13078A	LD13083A	LD13084A
DATE PREPARED	: 04/13/23 13:15	04/13/23 13:15	04/13/23 13:15
DATE ANALYZED	: 04/14/23 15:52	04/14/23 17:25	04/14/23 17:43
PREP BATCH	: 23DSD016W	23DSD016W	23DSD016W
CALIBRATION REF:	LD13074A	LD13074A	LD13074A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP8	ND	2.50	2.48	99	2.50	2.17	87	13	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.488	98	0.500	0.413	83	60-130
Hexacosane	0.125	0.121	97	0.125	0.116	93	60-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-43175
BATCH NO. : 23D125
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-43175-1	380-43175-1MS	380-43175-1MSD
LAB SAMPLE ID	: 23D125-01	23D125-01M	23D125-01S
LAB FILE ID	: LD13089A	LD13090A	LD13091A
DATE PREPARED	: 04/13/23 13:15	04/13/23 13:15	04/13/23 13:15
DATE ANALYZED	: 04/14/23 19:16	04/14/23 19:35	04/14/23 19:53
PREP BATCH	: 23DSD016W	23DSD016W	23DSD016W
CALIBRATION REF:	LD13072A	LD13072A	LD13072A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.53	2.30	91	2.50	1.90	76	19	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.505	0.372	74	0.500	0.317	63	60-130
Hexacosane	0.126	0.139	110	0.125	0.128	102	60-130

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-43175
BATCH NO. : 23D125
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-43175-1	380-43175-1MS	380-43175-1MSD
LAB SAMPLE ID	: 23D125-01	23D125-01M	23D125-01S
LAB FILE ID	: LD13089A	LD13092A	LD13093A
DATE PREPARED	: 04/13/23 13:15	04/13/23 13:15	04/13/23 13:15
DATE ANALYZED	: 04/14/23 19:16	04/14/23 20:12	04/14/23 20:30
PREP BATCH	: 23DSD016W	23DSD016W	23DSD016W
CALIBRATION REF:	LD13073A	LD13073A	LD13073A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.72	2.18	80	2.75	2.06	75	6	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.545	0.458	84	0.550	0.389	71	60-130
Hexacosane	0.136	0.141	103	0.138	0.131	95	60-130

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

April 19, 2023

Rachelle Arada
Eurofins Eaton Analytical
750 Royal Oaks Drive
Suite 100
Monrovia, CA 91016-

Project Name: RED-HILL Project # 38001111 Job # 380-42555-1
Physis Project ID: 1407003-386

Dear Rachelle,

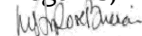
Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 4/6/2023. A total of 4 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

Organics
Polynuclear Aromatic Hydrocarbons by EPA 625.1
Disalicylidenepropanediamine by EPA 625.1
Dibenzo [a,l] Pyrene w/ PAHs by EPA 625.1

Analytical results in this report apply only to samples submitted to PHYSIS in accordance with the COC and are intended to be considered in their entirety.

Please feel free to contact me at any time with any questions. PHYSIS appreciates the opportunity to provide you with our analytical and support services.

Regards,



Misty Mercier
714 602-5320
Extension 202
mistymercier@physislabs.com

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-386

RED-HILL Project # 38001111 Job # 380-42555-1

Total Samples: 4

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
104901	MOANALUA WELLS	331-223-TP202 (380-42555-1)	4/3/2023	10:09	Samplewater	Not Specified
104902	AIEA GULCH WELLS PUMP	331-202-TP072 (380-42555-2)	4/3/2023	11:52	Samplewater	Not Specified
104903	AIEA WELLS PUMPS 1&2 (268)	331-203-TP400 (380-42555-3)	4/3/2023	11:07	Samplewater	Not Specified
104904	HALAWA WELLS UNITS 1 & 2	331-206-TP065 (380-42555-4)	4/3/2023	10:30	Samplewater	Not Specified

ABBREVIATIONS and ACRONYMS

QM	Quality Manual
QA	Quality Assurance
QC	Quality Control
MDL	method detection limit
RL	reporting limit
R1	project sample
R2	project sample replicate
MS1	matrix spike
MS2	matrix spike replicate
B1	procedural blank
B2	procedural blank replicate
BS1	blank spike
BS2	blank spike replicate
LCS1	laboratory control spike
LCS2	laboratory control spike replicate
LCM1	laboratory control material
LCM2	laboratory control material replicate
CRM1	certified reference material
CRM2	certified reference material replicate
RPD	relative percent difference
LMW	low molecular weight
HMW	high molecular weight

QUALITY ASSURANCE SUMMARY

LABORATORY BATCH: Physis' QM defines a laboratory batch as a group of 20 or fewer project samples of similar matrix, processed together under the same conditions and with the same reagents. QC samples are associated with each batch and were used to assess the validity of the sample analyses.

PROCEDURAL BLANK: Laboratory contamination introduced during method use is assessed through the preparation and analysis of procedural blanks is provided at a minimum frequency of one per batch.

ACCURACY: Accuracy of analytical measurements is the degree of closeness based on percent recovery calculations between measured values and the actual or true value and includes a combination of reproducibility error and systematic bias due to sampling and analytical operations. Accuracy of the project data was indicated by analysis of MS, BS, LCS, LCM, CRM, and/or surrogate spikes on a minimum frequency of one per batch. Physis' QM requires that 95% of the target compounds greater than 10 times the MDL be within the specified acceptance limits.

PRECISION: Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS₁/MS₂, BS₁/BS₂, LCS₁/LCS₂, LCM₁/LCM₂, CRM₁/CRM₂, surrogate spikes and/or replicate project sample analysis (R₁/R₂) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

BLANK SPIKES: BS is the introduction of a known concentration of analyte into the procedural blank. BS demonstrates performance of the preparation and analytical methods on a clean matrix void of potential matrix related interferences. The BS is performed in laboratory deionized water, making these recoveries a better indicator of the efficiency of the laboratory method per se.

MATRIX SPIKES: MS is the introduction of a known concentration of analyte into a sample. MS samples demonstrate the effect a particular project sample matrix has on the accuracy of a measurement. Individually, MS samples also indicate the bias of analytical measurements due to chemical interferences inherent in the in the specific project sample spiked. Intrinsic target analyte concentration in the specific project sample can also significantly impact MS recovery.

CERTIFIED REFERENCE MATERIALS: CRMs are materials of various matrices for which analytical information has been determined and certified by a recognized authority. These are used to provide a quantitative assessment of the accuracy of an analytical method. CRMs provide evidence that the laboratory preparation and analysis produces results that are comparable to those obtained by an independent organization.

LABORATORY CONTROL MATERIAL: LCM is provided because a suitable natural seawater CRM is not available and can be used to indicate accuracy of the method. Physis' internal LCM is seawater collected at ~800 meters in the Southern California San Pedro Basin and can be used as a reference for background concentrations in clean, natural seawater for comparison to project samples.

LABORATORY CONTROL SPIKES: LCS is the introduction of a known concentration of analyte into Physis' LCM. LCS samples were employed to assess the effect the seawater matrix has on the accuracy of a measurement. LCS also indicate the bias of this method due to chemical interferences inherent in the in the seawater matrix. Intrinsic LCM concentration can also significantly impact LCS recovery.

SURROGATES: A surrogate is a pure analyte unlikely to be found in any project sample, behaves similarly to

the target analyte and most often used with organic analytical procedures. Surrogates are added in known concentration to all samples and are measured to indicate overall efficiency of the method including processing and analyses.

HOLDING TIME: Method recommended holding times are the length of time a project sample can be stored under specific conditions after collection and prior to analysis without significantly affecting the analyte's concentration. Holding times can be extended if preservation techniques are employed to reduce biodegradation, volatilization, oxidation, sorption, precipitation, and other physical and chemical processes.

SAMPLE STORAGE/RETENTION: In order to maintain chemical integrity prior to analysis, all samples submitted to Physis are refrigerated (liquids) or frozen (solids) upon receipt unless otherwise recommended by applicable methods. Solid samples are retained for 1 year from collection while liquid samples are retained until method recommended holding times elapse.

TOTAL/DISSOLVED FRACTION: In some instances, the results for the dissolved fraction may be higher than the total fraction for a particular analyte (e.g. trace metals). This is typically caused by the analytical variation for each result and indicates that the target analyte is primarily in the dissolved phase, within the sample.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	analyte was detected in the procedural blank greater than 10 times the MDL
E	analyte concentration exceeds the upper limit of the linear calibration range, reported value is estimated
H	sample received and/or analyzed past the recommended holding time
J	analyte was detected at a concentration below the RL and above the MDL, reported value is estimated
N	insufficient sample, analysis could not be performed
M	analyte was outside the specified accuracy and/or precision acceptance limits due to matrix interference. The associated B/BS were within limits, therefore the sample data was reported without further clarification
SH	analyte concentration in the project sample exceeded the spike concentration, therefore accuracy and/or precision acceptance limits do not apply
SL	analyte results were lower than 10 times the MDL, therefore accuracy and/or precision acceptance limits do not apply
NH	project sample was heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices, therefore accuracy and/or precision acceptance limits do not apply
Q	analyte was outside the specified QAPP acceptance limits for precision and/or accuracy but within Physis derived acceptance limits, therefore the sample data was reported without further clarification
R	Physis' QM allows for 5% of the target compounds greater than 10 times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and does not indicate any significant problems with the analysis of these project samples

CASE NARRATIVE

QUALIFIER NOTES

In addition to the use of analyte specific Physis Qualifier Codes where applicable, the following were also noted.

ND

MDL is listed due to report format restrictions; it is not used in reporting. Analytical results reported are ND at the RL.

ANALYTICAL REPORT

TERRA ANALYTICAL LABORATORIES, INC.

Innovative Solutions for Nature

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Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104901-R1 MOANALUA WELLS 331-223-TP202 Matrix: Samplewater											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-41030	06-Apr-23	17-Apr-23
Sample ID: 104902-R1 AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-41030	06-Apr-23	18-Apr-23
Sample ID: 104903-R1 AIEA WELLS PUMPS 1&2 (260) 331- Matrix: Samplewater											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-41030	06-Apr-23	18-Apr-23
Sample ID: 104904-R1 HALAWA WELLS UNITS 1 & 2 331-2 Matrix: Samplewater											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-41030	06-Apr-23	18-Apr-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104901-R1	MOANALUA WELLS 331-223-TP202	Matrix: Samplewater					Sampled: 03-Apr-23 10:09			Received: 06-Apr-23	
(d10-Acenaphthene)	EPA 625.1	% Recovery	87	1			Total		O-41030	06-Apr-23	17-Apr-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	90	1			Total		O-41030	06-Apr-23	17-Apr-23
(d12-Chrysene)	EPA 625.1	% Recovery	86	1			Total		O-41030	06-Apr-23	17-Apr-23
(d12-Perylene)	EPA 625.1	% Recovery	86	1			Total		O-41030	06-Apr-23	17-Apr-23
(d8-Naphthalene)	EPA 625.1	% Recovery	80	1			Total		O-41030	06-Apr-23	17-Apr-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	17-Apr-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104902-R1	AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater						Sampled: 03-Apr-23 11:52		Received: 06-Apr-23		
(d10-Acenaphthene)	EPA 625.1	% Recovery	86	1			Total		O-41030	06-Apr-23	18-Apr-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	89	1			Total		O-41030	06-Apr-23	18-Apr-23
(d12-Chrysene)	EPA 625.1	% Recovery	87	1			Total		O-41030	06-Apr-23	18-Apr-23
(d12-Perylene)	EPA 625.1	% Recovery	87	1			Total		O-41030	06-Apr-23	18-Apr-23
(d8-Naphthalene)	EPA 625.1	% Recovery	77	1			Total		O-41030	06-Apr-23	18-Apr-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104903-R1	AIEA WELLS PUMPS 1&2 (260) 331- Matrix: Samplewater						Sampled: 03-Apr-23 11:07		Received: 06-Apr-23		
(d10-Acenaphthene)	EPA 625.1	% Recovery	85	1			Total		O-41030	06-Apr-23	18-Apr-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	88	1			Total		O-41030	06-Apr-23	18-Apr-23
(d12-Chrysene)	EPA 625.1	% Recovery	87	1			Total		O-41030	06-Apr-23	18-Apr-23
(d12-Perylene)	EPA 625.1	% Recovery	85	1			Total		O-41030	06-Apr-23	18-Apr-23
(d8-Naphthalene)	EPA 625.1	% Recovery	77	1			Total		O-41030	06-Apr-23	18-Apr-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104904-R1	HALAWA WELLS UNITS 1 & 2 331-2 Matrix: Samplewater						Sampled: 03-Apr-23 10:30		Received: 06-Apr-23		
(d10-Acenaphthene)	EPA 625.1	% Recovery	86	1			Total		O-41030	06-Apr-23	18-Apr-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	89	1			Total		O-41030	06-Apr-23	18-Apr-23
(d12-Chrysene)	EPA 625.1	% Recovery	88	1			Total		O-41030	06-Apr-23	18-Apr-23
(d12-Perylene)	EPA 625.1	% Recovery	88	1			Total		O-41030	06-Apr-23	18-Apr-23
(d8-Naphthalene)	EPA 625.1	% Recovery	77	1			Total		O-41030	06-Apr-23	18-Apr-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41030	06-Apr-23	18-Apr-23

QUALITY CONTROL REPORT

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE		SOURCE		ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
Sample ID: 104900-B1		QAQC Procedural Blank				Matrix: BlankMatrix		Sampled:		Received:					
		Method: EPA 625.1		Batch ID: O-41030		Prepared: 06-Apr-23		Analyzed: 17-Apr-23							
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L									
Sample ID: 104900-BS1		QAQC Procedural Blank				Matrix: BlankMatrix		Sampled:		Received:					
		Method: EPA 625.1		Batch ID: O-41030		Prepared: 06-Apr-23		Analyzed: 17-Apr-23							
Disalicylidenepropanediamin	Total	31.1	1	0.05	0.1	µg/L	50	0	62	50 - 150%	PASS				
Sample ID: 104900-BS2		QAQC Procedural Blank				Matrix: BlankMatrix		Sampled:		Received:					
		Method: EPA 625.1		Batch ID: O-41030		Prepared: 06-Apr-23		Analyzed: 17-Apr-23							
Disalicylidenepropanediamin	Total	36.5	1	0.05	0.1	µg/L	50	0	73	50 - 150%	PASS	16	30	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc
							LEVEL	RESULT	% LIMITS	% LIMITS	
Sample ID: 104900-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-41030		Prepared: 06-Apr-23		Analyzed: 17-Apr-23					
(d10-Acenaphthene)	Total	85	1			% Recovery	100	85	27 - 133%	PASS	
(d10-Phenanthrene)	Total	90	1			% Recovery	100	90	43 - 129%	PASS	
(d12-Chrysene)	Total	89	1			% Recovery	100	89	52 - 144%	PASS	
(d12-Perylene)	Total	87	1			% Recovery	100	87	36 - 161%	PASS	
(d8-Naphthalene)	Total	77	1			% Recovery	100	77	25 - 125%	PASS	
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L					
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L					
Anthracene	Total	ND	1	0.001	0.005	µg/L					
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L					
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L					
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Biphenyl	Total	ND	1	0.001	0.005	µg/L					
Chrysene	Total	ND	1	0.001	0.005	µg/L					
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L					
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L					
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L					

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Fluorene	Total	ND	1	0.001	0.005	µg/L							
Indeno[1,2,3-cd]pyrene	Total	ND	1	0.001	0.005	µg/L							
Naphthalene	Total	ND	1	0.001	0.005	µg/L							
Perylene	Total	ND	1	0.001	0.005	µg/L							
Phenanthrene	Total	ND	1	0.001	0.005	µg/L							
Pyrene	Total	ND	1	0.001	0.005	µg/L							



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 104900-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-41030			Prepared: 06-Apr-23		Analyzed: 17-Apr-23					
(d10-Acenaphthene)	Total	82	1			% Recovery	100	0	82	27 - 133%	PASS	
(d10-Phenanthrene)	Total	85	1			% Recovery	100	0	85	43 - 129%	PASS	
(d12-Chrysene)	Total	87	1			% Recovery	100	0	87	52 - 144%	PASS	
(d12-Perylene)	Total	84	1			% Recovery	100	0	84	36 - 161%	PASS	
(d8-Naphthalene)	Total	73	1			% Recovery	100	0	73	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.389	1	0.001	0.005	µg/L	0.5	0	78	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.439	1	0.001	0.005	µg/L	0.5	0	88	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.426	1	0.001	0.005	µg/L	0.5	0	85	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.393	1	0.001	0.005	µg/L	0.5	0	79	48 - 120%	PASS	
2-Methylnaphthalene	Total	0.386	1	0.001	0.005	µg/L	0.5	0	77	47 - 130%	PASS	
Acenaphthene	Total	0.415	1	0.001	0.005	µg/L	0.5	0	83	53 - 131%	PASS	
Acenaphthylene	Total	0.405	1	0.001	0.005	µg/L	0.5	0	81	43 - 140%	PASS	
Anthracene	Total	0.425	1	0.001	0.005	µg/L	0.5	0	85	58 - 135%	PASS	
Benz[a]anthracene	Total	0.432	1	0.001	0.005	µg/L	0.5	0	86	55 - 145%	PASS	
Benzo[a]pyrene	Total	0.421	1	0.001	0.005	µg/L	0.5	0	84	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	0.444	1	0.001	0.005	µg/L	0.5	0	89	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.424	1	0.001	0.005	µg/L	0.5	0	85	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	0.441	1	0.001	0.005	µg/L	0.5	0	88	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	0.436	1	0.001	0.005	µg/L	0.5	0	87	56 - 145%	PASS	
Biphenyl	Total	0.408	1	0.001	0.005	µg/L	0.5	0	82	56 - 119%	PASS	
Chrysene	Total	0.425	1	0.001	0.005	µg/L	0.5	0	85	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	0.432	1	0.001	0.005	µg/L	0.5	0	86	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.451	1	0.001	0.005	µg/L	0.5	0	90	50 - 150%	PASS	
Dibenzothiophene	Total	0.424	1	0.001	0.005	µg/L	0.5	0	85	46 - 126%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Fluoranthene	Total	0.453	1	0.001	0.005	µg/L	0.5	0	91	60 - 146%	PASS		
Fluorene	Total	0.421	1	0.001	0.005	µg/L	0.5	0	84	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	0.438	1	0.001	0.005	µg/L	0.5	0	88	50 - 151%	PASS		
Naphthalene	Total	0.385	1	0.001	0.005	µg/L	0.5	0	77	41 - 126%	PASS		
Perylene	Total	0.423	1	0.001	0.005	µg/L	0.5	0	85	48 - 141%	PASS		
Phenanthrene	Total	0.424	1	0.001	0.005	µg/L	0.5	0	85	67 - 127%	PASS		
Pyrene	Total	0.442	1	0.001	0.005	µg/L	0.5	0	88	54 - 156%	PASS		

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc		
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
Sample ID: 104900-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:				
		Method: EPA 625.1			Batch ID: O-41030			Prepared: 06-Apr-23			Analyzed: 17-Apr-23				
(d10-Acenaphthene)	Total	85	1				% Recovery	100	0	85	27 - 133%	PASS	4	30	PASS
(d10-Phenanthrene)	Total	89	1				% Recovery	100	0	89	43 - 129%	PASS	5	30	PASS
(d12-Chrysene)	Total	90	1				% Recovery	100	0	90	52 - 144%	PASS	3	30	PASS
(d12-Perylene)	Total	90	1				% Recovery	100	0	90	36 - 161%	PASS	7	30	PASS
(d8-Naphthalene)	Total	75	1				% Recovery	100	0	75	25 - 125%	PASS	3	30	PASS
1-Methylnaphthalene	Total	0.375	1	0.001	0.005	µg/L		0.5	0	75	31 - 128%	PASS	4	30	PASS
1-Methylphenanthrene	Total	0.436	1	0.001	0.005	µg/L		0.5	0	87	66 - 127%	PASS	1	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.419	1	0.001	0.005	µg/L		0.5	0	84	55 - 122%	PASS	1	30	PASS
2,6-Dimethylnaphthalene	Total	0.386	1	0.001	0.005	µg/L		0.5	0	77	48 - 120%	PASS	3	30	PASS
2-Methylnaphthalene	Total	0.382	1	0.001	0.005	µg/L		0.5	0	76	47 - 130%	PASS	1	30	PASS
Acenaphthene	Total	0.41	1	0.001	0.005	µg/L		0.5	0	82	53 - 131%	PASS	1	30	PASS
Acenaphthylene	Total	0.396	1	0.001	0.005	µg/L		0.5	0	79	43 - 140%	PASS	2	30	PASS
Anthracene	Total	0.424	1	0.001	0.005	µg/L		0.5	0	85	58 - 135%	PASS	0	30	PASS
Benz[a]anthracene	Total	0.414	1	0.001	0.005	µg/L		0.5	0	83	55 - 145%	PASS	4	30	PASS
Benzo[a]pyrene	Total	0.401	1	0.001	0.005	µg/L		0.5	0	80	51 - 143%	PASS	5	30	PASS
Benzo[b]fluoranthene	Total	0.443	1	0.001	0.005	µg/L		0.5	0	89	46 - 165%	PASS	0	30	PASS
Benzo[e]pyrene	Total	0.427	1	0.001	0.005	µg/L		0.5	0	85	42 - 152%	PASS	0	30	PASS
Benzo[g,h,i]perylene	Total	0.437	1	0.001	0.005	µg/L		0.5	0	87	63 - 133%	PASS	1	30	PASS
Benzo[k]fluoranthene	Total	0.432	1	0.001	0.005	µg/L		0.5	0	86	56 - 145%	PASS	1	30	PASS
Biphenyl	Total	0.398	1	0.001	0.005	µg/L		0.5	0	80	56 - 119%	PASS	2	30	PASS
Chrysene	Total	0.419	1	0.001	0.005	µg/L		0.5	0	84	56 - 141%	PASS	1	30	PASS
Dibenz[a,h]anthracene	Total	0.437	1	0.001	0.005	µg/L		0.5	0	87	55 - 150%	PASS	1	30	PASS
Dibenzo[a,l]pyrene	Total	0.462	1	0.001	0.005	µg/L		0.5	0	92	50 - 150%	PASS	2	30	PASS
Dibenzothiophene	Total	0.421	1	0.001	0.005	µg/L		0.5	0	84	46 - 126%	PASS	1	30	PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Fluoranthene	Total	0.447	1	0.001	0.005	µg/L	0.5	0	89	60 - 146%	PASS	2	30	PASS
Fluorene	Total	0.414	1	0.001	0.005	µg/L	0.5	0	83	58 - 131%	PASS	1	30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.439	1	0.001	0.005	µg/L	0.5	0	88	50 - 151%	PASS	0	30	PASS
Naphthalene	Total	0.378	1	0.001	0.005	µg/L	0.5	0	76	41 - 126%	PASS	1	30	PASS
Perylene	Total	0.418	1	0.001	0.005	µg/L	0.5	0	84	48 - 141%	PASS	1	30	PASS
Phenanthrene	Total	0.424	1	0.001	0.005	µg/L	0.5	0	85	67 - 127%	PASS	0	30	PASS
Pyrene	Total	0.441	1	0.001	0.005	µg/L	0.5	0	88	54 - 156%	PASS	0	30	PASS

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PHYSIS

**TENTATIVELY
IDENTIFIED COMPOUNDS**

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Sample ID: 104901

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.5470	5.3789	1111	Anthracene-D10-	1719-06-8	96
10.6667	3.0425	628	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	88
10.0642	2.3039	476	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	90
57.0723	1.9743	408	Hexanedioic acid, bis(2-ethylhexyl) ester	103-23-1	95
10.4709	1.5393	318	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	89
13.7748	0.5483	113	Benzoic acid	65-85-0	93

Concentration estimated using the response for Anthracene-d10

Sample ID: 104902

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.1208	2.4874	1111	Anthracene-D10-	1719-06-8	96
10.6681	4.1330	1846	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	88
10.0649	2.9213	1305	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	89
10.4713	1.9353	865	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	89
57.0707	1.8373	821	Hexanedioic acid, bis(2-ethylhexyl) ester	103-23-1	95
10.4124	0.6113	273	Octane, 3-methyl-6-methylene-	74630-07-2	80
13.7681	0.5162	231	Benzoic acid	65-85-0	94
10.2368	0.4690	209	2,3,3-Trimethyl-1-hexene	1000113-52-1	85
10.4236	0.4004	179	2-Methylbutanoic anhydride	1468-39-9	83
10.9992	0.3380	151	3,3-Diethoxy-1-propyne	10160-87-9	88
32.2928	0.3134	140	Benzoic acid, 2-ethylhexyl ester	5444-75-7	93
10.2087	0.2456	110	1H-Tetrazole	288-94-8	82
22.5827	0.2208	99	Phthalimide	85-41-6	94
27.6193	0.2175	97	Diethyl Phthalate	84-66-2	95

Concentration estimated using the response for Anthracene-d10

Sample ID: 104903

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.5439	5.7026	1111	Anthracene-D10-	1719-06-8	95
10.6664	3.7784	736	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	88
10.0644	2.4465	477	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	90
57.0726	2.2456	438	Hexanedioic acid, bis(2-ethylhexyl) ester	103-23-1	95
10.4708	1.7159	334	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	89
10.0328	1.5219	297	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	89

Concentration estimated using the response for Anthracene-d10

Sample ID: 104904

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.5429	4.7515	1111	Anthracene-D10-	1719-06-8	95
10.6660	3.5018	819	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	88
10.0641	2.4859	581	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	89
57.0703	1.8020	421	Hexanedioic acid, bis(2-ethylhexyl) ester	103-23-1	95
10.4706	1.7247	403	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	89
13.7704	0.6140	144	(+)-Dibenzoyl-L-tartaric acid anhydride	64339-95-3	93
13.7704	0.6124	143	Benzoic acid	65-85-0	93
32.2877	0.4244	99	Benzoic acid, 2-ethylhexyl ester	5444-75-7	96
10.2360	0.4049	95	2-Heptene, 5-ethyl-2,4-dimethyl-	74421-06-0	84

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1_41030

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.5459	5.3507	1111	Anthracene-D10-	1719-06-8	95
10.0638	3.5180	731	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	90
10.6670	3.4214	710	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	88
10.4714	2.3011	478	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	89
57.0727	2.2493	467	Hexanedioic acid, bis(2-ethylhexyl) ester	103-23-1	95
10.4121	0.7579	157	2-Nonene, 3-methyl-, (E)-	17003-99-5	81
10.4120	0.7198	149	Octane, 3-methyl-6-methylene-	74630-07-2	81

Concentration estimated using the response for Anthracene-d10

PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)		Sampler:	Lab Pkt:	Carrier Tracking No(s):	COCC No:				
Shipping/Receiving		Phone:	Arada, Rachelle		380-46693.1				
Company:		Due Date Requested:	E-Mail:	State of Origin:	Page:				
Physis Environmental Laboratories		4/19/2023	Rachelle.Arada@eurofins.com	Hawaii	Page 1 of 1				
Address:		TRT Requested (days):	Accreditations Required (See note):	State - Hawaii	Job #:				
1904 Wright Circle,					380-42555-1				
City:			Analysis Requested						
Anahelm									
State, Zip:									
CA, 92806									
Phone:									
Email:									
Project Name:									
RED-HILL									
Site:									
Honolulu BWS Sites									
Project #:									
38001111									
SSOW#:									
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (G=Grab)	Matrix (Water, Seawater, Urine, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
MOANALUA WELLS (331-223-TP202) (380-42555-1)	4/3/23	10:09	Hawaiian	Water	Water	X	X	2	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-42555-2)	4/3/23	11:52	Hawaiian	Water	Water	X	X	2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-42555-3)	4/3/23	11:07	Hawaiian	Water	Water	X	X	2	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-42555-4)	4/3/23	10:30	Hawaiian	Water	Water	X	X	2	See Attached Instructions
<p>Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & 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/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 compliance to Eurofins Eaton Analytical, LLC.</p>									
<p>Possible Hazard Identification</p> <p>Unconfirmed</p> <p>Deliverable Requested: I, II, III, IV, Other (specify) _____ Primary Deliverable Rank: 2</p> <p>Special Instructions/QC Requirements: _____</p> <p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</p> <p>Return To Client _____ Disposal By Lab _____ Archive For _____ Months</p>									
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:					
Relinquished by: <i>Phyllis Megan Davis</i>		Date/Time: 4/16/23 1537							
Relinquished by:		Date/Time:	Company:	Received by:		Date/Time:			
Relinquished by:		Date/Time:	Company:	Received by: <i>Myaie Tomz</i>		Date/Time: 4/18/23 1540			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					



Project Iteration ID: 1407003-386
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-42555-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: AT
2. Date Received: 4/6/23
3. Time Received: 1540
4. Client Name: EUROFINS
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - iii. Total Mileage: _____
 - ii. End Time: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 24 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:

Monrovia, CA (Suite 100)

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

Chain of Custody Record



Environment Testing
 America

Client Information		Sampler: BAILEY		Lab PM: Arada, Rachele		Carrier Tracking No(s):		COC No: 380-27941-2757.2																																																	
Client Contact: Dr. Ron Fenstermacher		Phone: 808-748-5840		E-Mail: Rachele.Arada@et.euronisus.com		State of Origin:		Page: Page 2 of 2																																																	
Company: City & County of Honolulu		PWSID:		Analysis Requested						Job #:																																															
Address: 630 South Beretania Street; Chemistry Lab		Due Date Requested:		<table border="1"> <tr> <td>Field Filtered Sample (Yes or No)</td> <td>Perform MS/MSD (Yes or No)</td> <td>SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs</td> <td>SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)</td> <td>SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil</td> <td>525_2_PREC - (MOD) 525plus PLUS TICs</td> <td>SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)</td> <td>537.1_DW_PREC - 537.1 Full List</td> <td>533 - All Analytes</td> <td rowspan="5">Total Number of containers</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)	SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil	525_2_PREC - (MOD) 525plus PLUS TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers																																					Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify) Other:	
Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)							SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil	525_2_PREC - (MOD) 525plus PLUS TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers																																										
City: Honolulu		TAT Requested (days):																																																							
State, Zip: HI, 96843		Compliance Project: Δ No																																																							
Phone: 808-748-5091 (tel)		PO #: C20525101 exp 05312023																																																							
Email: rfenstemacher@hbws.org		WO #:																																																							
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill		Project #: 38001111																																																							
Site:		SSOW#:																																																							
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)	SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil	525_2_PREC - (MOD) 525plus PLUS TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:																																									
				Preservation Code:				R	R	RA	RA	Y	N																																												
TB MOANALUA WELLS		3-Apr-2023	1009		Water							2					(752A) 1.5/1.4																																								
TB AIEA GULCH WELLS PUMP2		3-Apr-2023	1152		Water							2					FedEx: 77175534190																																								
TB AIEA WELLS PUMPS 1&2 (260)		3-Apr-2023	1107		Water							2					(752A) 1.5/1.4																																								
TB HALAWA WELLS UNITES 1&2		3-Apr-2023	1030		Water							2					FedEx: 77175534205																																								
FB MOANALUA WELLS		3-Apr-2023	1009		Water								1	1																																											
FB AIEA GULCH WELLS PUMP2		3-Apr-2023	1152		Water								1	1																																											
FB AIEA WELLS PUMPS 1&2 (260)		3-Apr-2023	1107		Water								1	1																																											
FB HALAWA WELLS UNITES 1&2		3-Apr-2023	1030		Water								1	1																																											
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																																																			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																																																			
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:																																																			
Empty Kit Relinquished by:			Date:			Time:			Method of Shipment: FedEx: 77175533426																																																
Relinquished by: BAILEY		Date/Time: April 4, 2023 1400		Company: HBWS		Received by: Vandy Mark Umutla		Date/Time: 4/5/23 1020		Company: EEA																																															
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:																																															
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:																																															
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: (752A) 1.8/1.7 gel-frozen																																																					



Environment Testing

Shipping Order Form - Bottle Order



Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona, CA 91768-2642
Phone (626) 386-1100

Shipping Order ID: 27941

Ship Via: FedEx

Due On: 3/29/2023 11:59:00PM

When To Ship: 3/27/2023

Ship To Information

Project Manager: Rachelle Arada
Tel: (626) 386-1106 Em: Rachelle.Arada@et.eurofinsus.com
Company Name: City & County of Honolulu
Attention: Erwin Kawata
Address 1: 630 South Beretania Street
Address 2: Public Service Bldg. Room 308
Address 3:
City: Honolulu
State: HI
Zip: 96843
Phone #: +1-808-748-5841
Project Ref: RED-HILL
Event Desc: RUSH Weekly Red Hill

Notes to Bottle/Shipping Department

Pack with Gel Ice.

Please pack as one cooler per site.

Label the cooler under the left hand handle with the ID of the samples that are in the cooler (If more than 1 cooler is used per 1 sample ID label cooler with "sample ID x of y").

Pack by sample ID on the bottle labels (with one full set of tests per sample ID).

Send only medium to large coolers.

Shipping Method: **Individual sample per cooler (affixed TALS labels)**

- Ready to Fill
- Preprinted COC
- Number of COC Copies
- Seals on Bottle
- Seals on Coolers
- Priority
- Return Shipment Labels
- Prepaid Return
- Short Hold Times
- Temperature Control
- Rush

Eurofins Eaton Analytical Pomona

Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.



Bottle Order Information

Bottle Order: RUSH RED-HILL WEEKLY
 Bottle Order #: 2757
 Request From Client: 3/2/2023
 Date Order Posted: 7/20/2022 11:12:54AM
 Order Status: Ready To Process
 Prepared By: Davis Haley
Deliver By Date: 3/29/2023 11:59:00PM
 Lab Project Number: 38001111
 PWSID:

Order Completion Information

Creator: Michelle Do
 Filled by:
 Sent Date:
 Sent Via:
 Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
4	2	8	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	Normal	625 PAH	
4	4	16	Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Normal		
4	2	8	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	Normal		
4	2	8	Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	525.2_PREC - (MOD) 525plus Plus TICs	Water	Normal		
4	2	8	VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Trip Blank		
5	3	15	Plastic 250ml - Trizma	Trizma	537.1_DW_PREC - 537.1 Full List	Water	Normal		
5	3	15	Plastic 250ml - Ammonium Acetate	Ammonium Acetate	533 - All Analytes	Water	Normal		
5	1	5	Plastic 250ml - Reagent Water	None		Water	Field Blank		
5	1	5	Plastic 250ml - Ammonium Acetate	Ammonium Acetate		Water	Field Blank		
5	1	5	Plastic 250ml - Reagent Water	None		Water	Field Blank		
5	1	5	Plastic 250ml - Trizma	Trizma		Water	Field Blank		

Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-42555-1

Login Number: 42555
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	