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ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-54624-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

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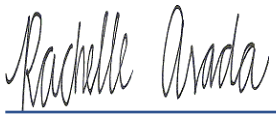
The test results in this report relate only to the samples as received by the laboratory and meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed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

Compliance Statement

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

Authorization



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Definitions/Glossary

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

Job ID: 380-54624-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
F2	MS/MSD RPD 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
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Case Narrative

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

Job ID: 380-54624-1

Job ID: 380-54624-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative
380-54624-1

Comments
No additional comments.

Receipt
The samples were received on 7/13/2023 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 5.0º C and 5.3º C.

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

LCMS
Method 533: IDAs 13C3 HFPO-DA(38%), 13C4 PFBA(42%), 13C5 PFHxA(48%) & 13C5 PFPeA(43%) failed low in the MRL. These samples don't have backup bottle for re-extract. Re-run and got similar results. FB: HALAWA WELLS UNITS 1 & 2 (380-54624-2)

Method 533: IDAs 13C3 HFPO-DA(40%), 13C4 PFBA(43%), 13C5 PFHxA(43%) & 13C5 PFPeA(46%) failed low in the LCS. IDAs 13C3 HFPO-DA(43%), 13C4 PFBA(42%) & 13C5 PFPeA(48%) failed low in the LCSD. Limits are 50-200%. Samples are past hold time for re-extract. Re-run and got similar results. HALAWA WELLS UNITS 1 & 2 (380-54624-1)

Method 533: Analyte1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2) has a hit for method blank above 1/3 MRL level but below RL. Possible contamination. Batch was re-run with new calibration and got similar results. HALAWA WELLS UNITS 1 & 2 (380-54624-1)

533 Data excluded due to this QC failure, 537.1 data was reported as there were no noted QC issues.

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

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

Detection Summary

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

Job ID: 380-54624-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-54624-1

PWSID Number: HI0000331

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.4		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0		ng/L	1		537.1	Total/NA

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-54624-2

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-54624-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2
Date Collected: 07/11/23 09:30
Date Received: 07/13/23 11:00

Lab Sample ID: 380-54624-1
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
1-Methylnaphthalene	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
2,4'-DDD	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
2,4'-DDE	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
2,4'-DDT	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
2-Methylnaphthalene	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
4,4'-DDD	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
4,4'-DDE	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
4,4'-DDT	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Acenaphthene	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Acenaphthylene	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Acetochlor	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Alachlor	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
alpha-BHC	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
alpha-Chlordane	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Anthracene	<0.020		0.020		ug/L		07/16/23 14:45	07/17/23 22:44	1
Atrazine	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Benz(a)anthracene	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Benzo[a]pyrene	<0.020		0.020		ug/L		07/16/23 14:45	07/17/23 22:44	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		07/16/23 14:45	07/17/23 22:44	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		07/16/23 14:45	07/17/23 22:44	1
beta-BHC	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		07/16/23 14:45	07/17/23 22:44	1
Bromacil	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Butachlor	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Butylbenzylphthalate	<0.49		0.49		ug/L		07/16/23 14:45	07/17/23 22:44	1
Chlorobenzilate	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Chloroneb	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Chlorpyrifos	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Chrysene	<0.020		0.020		ug/L		07/16/23 14:45	07/17/23 22:44	1
delta-BHC	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		07/16/23 14:45	07/17/23 22:44	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Dieldrin	<0.20		0.20		ug/L		07/16/23 14:45	07/17/23 22:44	1
Diethylphthalate	<0.49		0.49		ug/L		07/16/23 14:45	07/17/23 22:44	1
Dimethylphthalate	<0.49		0.49		ug/L		07/16/23 14:45	07/17/23 22:44	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		07/16/23 14:45	07/17/23 22:44	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Endosulfan sulfate	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Endrin	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Endrin aldehyde	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
EPTC	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Fluoranthene	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Date Collected: 07/11/23 09:30
Date Received: 07/13/23 11:00

Lab Sample ID: 380-54624-1

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
gamma-Chlordane	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Heptachlor	<0.039		0.039		ug/L		07/16/23 14:45	07/17/23 22:44	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Hexachlorobenzene	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Isophorone	<0.49		0.49		ug/L		07/16/23 14:45	07/17/23 22:44	1
Lindane	<0.039		0.039		ug/L		07/16/23 14:45	07/17/23 22:44	1
Malathion	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Methoxychlor	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Metolachlor	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Molinate	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Naphthalene	<0.29		0.29		ug/L		07/16/23 14:45	07/17/23 22:44	1
Parathion	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Phenanthrene	<0.039		0.039		ug/L		07/16/23 14:45	07/17/23 22:44	1
Propachlor	<0.049	^3+	0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Pyrene	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Simazine	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Terbacil	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Terbuthylazine	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1
Thiobencarb	<0.20		0.20		ug/L		07/16/23 14:45	07/17/23 22:44	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		07/16/23 14:45	07/17/23 22:44	1
trans-Nonachlor	<0.049		0.049		ug/L		07/16/23 14:45	07/17/23 22:44	1
Trifluralin	<0.098		0.098		ug/L		07/16/23 14:45	07/17/23 22:44	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Decane	*1.9*	*T J N*	*ug/L*		*2.32*	*124-18-5*	*07/16/23 14:45*	*07/17/23 22:44*	*1*
Decane, 5-methyl-	*0.63*	*T J N*	*ug/L*		*2.47*	*13151-35-4*	*07/16/23 14:45*	*07/17/23 22:44*	*1*
Octadecanoic acid	*0.91*	*T J N*	*ug/L*		*6.35*	*57-11-4*	*07/16/23 14:45*	*07/17/23 22:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*93*		*70 - 130*	*07/16/23 14:45*	*07/17/23 22:44*	*1*
Perylene-d12	*90*		*70 - 130*	*07/16/23 14:45*	*07/17/23 22:44*	*1*
Triphenylphosphate	*120*		*70 - 130*	*07/16/23 14:45*	*07/17/23 22:44*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
Perfluorooctanesulfonic acid (PFOS)	**2.3**		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
Perfluorohexanoic acid (PFHxA)	**2.4**		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-54624-1
Date Collected: 07/11/23 09:30
Matrix: Drinking Water
Date Received: 07/13/23 11:00
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
Perfluorohexanesulfonic acid (PFHxS)	**2.6**		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*115*		*70 - 130*	*07/18/23 06:12*	*07/19/23 19:56*	*1*
13C2 PFHxA	*123*		*70 - 130*	*07/18/23 06:12*	*07/19/23 19:56*	*1*
13C2 PFDA	*122*		*70 - 130*	*07/18/23 06:12*	*07/19/23 19:56*	*1*
13C3-GenX	*118*		*70 - 130*	*07/18/23 06:12*	*07/19/23 19:56*	*1*

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-54624-2
Date Collected: 07/11/23 09:30
Matrix: Water
Date Received: 07/13/23 11:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		07/18/23 06:12	07/19/23 20:05	1

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

Job ID: 380-54624-1

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
Date Collected: 07/11/23 09:30
Date Received: 07/13/23 11:00

Lab Sample ID: 380-54624-2
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	114		70 - 130	07/18/23 06:12	07/19/23 20:05	1
13C2 PFHxA	126		70 - 130	07/18/23 06:12	07/19/23 20:05	1
13C2 PFDA	120		70 - 130	07/18/23 06:12	07/19/23 20:05	1
13C3-GenX	115		70 - 130	07/18/23 06:12	07/19/23 20:05	1

Action Limit Summary

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

Job ID: 380-54624-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-54624-1

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

Surrogate Summary

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

Job ID: 380-54624-1

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-54624-1	HALAWA WELLS UNITS 1 & 2	93	90	120

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-54518-B-6-A MS	Matrix Spike	93	93	116
380-54518-B-6-B MSD	Matrix Spike Duplicate	88	88	114
LCS 380-47490/23-A	Lab Control Sample	93	89	109
LCSD 380-47490/24-A	Lab Control Sample Dup	94	91	116
MB 380-47490/21-A	Method Blank	94	84	114
MRL 380-47490/22-A	Lab Control Sample	94	89	113

Surrogate Legend

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

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-54624-1	HALAWA WELLS UNITS 1 & 2	115	123	122	118

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-54592-B-1-A MS	Matrix Spike	104	112	114	110
380-54592-C-1-A MSD	Matrix Spike Duplicate	110	112	114	111
380-54624-2	FB: HALAWA WELLS UNITS 1 & 2	114	126	120	115
LCS 380-47736/25-A	Lab Control Sample	110	116	117	112
LCSD 380-47736/26-A	Lab Control Sample Dup	112	120	120	116
MBL 380-47736/23-A	Method Blank	118	117	121	115
MRL 380-47736/24-A	Lab Control Sample	109	118	119	115

Surrogate Summary

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

Job ID: 380-54624-1

Surrogate Legend

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

Isotope Dilution Summary

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

Job ID: 380-54624-1

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

Matrix: Drinking Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA	C6PFDA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	13C7PUA	PFDoA
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-54624-1	HALAWA WELLS UNITS 1 & 2	83	91	88	87	90	93	92	92
380-54624-1 MS	HALAWA WELLS UNITS 1 & 2	84	88	90	87	85	92	85	88

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	C3PFBS	C3PFHS	C8PFOS	42FTS	62FTS	82FTS
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-54624-1	HALAWA WELLS UNITS 1 & 2	89	96	99	93	93	107	99	100
380-54624-1 MS	HALAWA WELLS UNITS 1 & 2	83	86	90	86	91	91	90	90

Surrogate Legend

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

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

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA	C6PFDA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	13C7PUA	PFDoA
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-54617-E-5-A MS	Matrix Spike	93	105	99	97	100	104	107	107
380-54617-F-5-A MSD	Matrix Spike Duplicate	97	101	101	100	96	98	110	110
380-54624-2	FB: HALAWA WELLS UNITS 1 & 2	77 ^3-	91	91 ^3-	89	92	97	94	95
380-54666-C-1-A DU	Duplicate	72	85	86	89	89	89	88	92
LCS 380-49222/21-A	Lab Control Sample	80	96	85	88	95	96	99	96
LCS 380-50252/23-A	Lab Control Sample	40 *5-	68	43 *5-	52	55	62	75	81
LCSD 380-49222/22-A	Lab Control Sample Dup	89	94	93	98	98	99	95	93
LCSD 380-50252/24-A	Lab Control Sample Dup	43 *5-	79	54	60	64	74	84	89
MBL 380-49222/19-A	Method Blank	83	101	98	99	99	106	101	102
MBL 380-50252/21-A	Method Blank	65	89	72	78	78	82	83	87
MRL 380-49222/20-A	Lab Control Sample	38 *5- ^3-	73	48 *5- ^3-	50	53	66	83	88
MRL 380-50252/22-A	Lab Control Sample	72	89	79	82	84	89	89	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	C3PFBS	C3PFHS	C8PFOS	42FTS	62FTS	82FTS
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-54617-E-5-A MS	Matrix Spike	99	99	94	87	100	108	109	104
380-54617-F-5-A MSD	Matrix Spike Duplicate	100	101	91	92	93	108	107	100

Isotope Dilution Summary

Client: City & County of Honolulu
Job ID: 380-54624-1
Project/Site: RED-HILL

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

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	C3PFBS	C3PFHS	C8PFOS	42FTS	62FTS	82FTS
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-54624-2	FB: HALAWA WELLS UNITS 1 & 2	88 ^3-	101 ^3-	100	86	98	123	118	98
380-54666-C-1-A DU	Duplicate	89	104	93	93	93	103	109	102
LCS 380-49222/21-A	Lab Control Sample	93	100	100	89	98	104	109	99
LCS 380-50252/23-A	Lab Control Sample	43 *5-	46 *5-	97	93	92	89	98	102
LCSD 380-49222/22-A	Lab Control Sample Dup	97	100	97	94	99	112	113	104
LCSD 380-50252/24-A	Lab Control Sample Dup	42 *5-	48 *5-	97	95	91	93	100	102
MBL 380-49222/19-A	Method Blank	100	99	94	81	96	117	110	107
MBL 380-50252/21-A	Method Blank	73	79	93	89	86	99	97	129
MRL 380-49222/20-A	Lab Control Sample	42 *5- ^3-	43 *5- ^3-	102	76	98	120	119	99
MRL 380-50252/22-A	Lab Control Sample	72	75	90	90	92	95	96	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

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

Lab Sample ID: MB 380-47490/21-A
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47490

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
2,4'-DDD	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
2,4'-DDE	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
2,4'-DDT	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
2-Methylnaphthalene	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
4,4'-DDD	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
4,4'-DDE	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
4,4'-DDT	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Acenaphthene	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Acenaphthylene	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Acetochlor	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Alachlor	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
alpha-BHC	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
alpha-Chlordane	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Anthracene	<0.020		0.020		ug/L		07/16/23 13:17	07/17/23 16:24	1
Atrazine	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Benz(a)anthracene	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Benzo[a]pyrene	<0.020		0.020		ug/L		07/16/23 13:17	07/17/23 16:24	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		07/16/23 13:17	07/17/23 16:24	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		07/16/23 13:17	07/17/23 16:24	1
beta-BHC	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		07/16/23 13:17	07/17/23 16:24	1
Bromacil	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Butachlor	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Butylbenzylphthalate	<0.49		0.49		ug/L		07/16/23 13:17	07/17/23 16:24	1
Chlorobenzilate	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Chloroneb	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Chlorpyrifos	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Chrysene	<0.020		0.020		ug/L		07/16/23 13:17	07/17/23 16:24	1
delta-BHC	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		07/16/23 13:17	07/17/23 16:24	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Dieldrin	<0.20		0.20		ug/L		07/16/23 13:17	07/17/23 16:24	1
Diethylphthalate	<0.49		0.49		ug/L		07/16/23 13:17	07/17/23 16:24	1
Dimethylphthalate	<0.49		0.49		ug/L		07/16/23 13:17	07/17/23 16:24	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		07/16/23 13:17	07/17/23 16:24	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Endosulfan sulfate	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Endrin	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Endrin aldehyde	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
EPTC	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1

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

Lab Sample ID: MB 380-47490/21-A
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47490

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Fluorene	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
gamma-Chlordane	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Heptachlor	<0.039		0.039		ug/L		07/16/23 13:17	07/17/23 16:24	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Hexachlorobenzene	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Isophorone	<0.49		0.49		ug/L		07/16/23 13:17	07/17/23 16:24	1
Lindane	<0.039		0.039		ug/L		07/16/23 13:17	07/17/23 16:24	1
Malathion	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Methoxychlor	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Metolachlor	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Molinate	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Naphthalene	<0.30		0.30		ug/L		07/16/23 13:17	07/17/23 16:24	1
Parathion	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Phenanthrene	<0.039		0.039		ug/L		07/16/23 13:17	07/17/23 16:24	1
Propachlor	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Pyrene	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Simazine	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Terbacil	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Terbuthylazine	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1
Thiobencarb	<0.20		0.20		ug/L		07/16/23 13:17	07/17/23 16:24	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		07/16/23 13:17	07/17/23 16:24	1
trans-Nonachlor	<0.049		0.049		ug/L		07/16/23 13:17	07/17/23 16:24	1
Trifluralin	<0.098		0.098		ug/L		07/16/23 13:17	07/17/23 16:24	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*07/16/23 13:17*	*07/17/23 16:24*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*94*		*70 - 130*	*07/16/23 13:17*	*07/17/23 16:24*	*1*
Perylene-d12	*84*		*70 - 130*	*07/16/23 13:17*	*07/17/23 16:24*	*1*
Triphenylphosphate	*114*		*70 - 130*	*07/16/23 13:17*	*07/17/23 16:24*	*1*

Lab Sample ID: LCS 380-47490/23-A
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47490

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.97	2.01		ug/L		102	70 - 130
2,4'-DDD	1.97	2.04		ug/L		103	70 - 130
2,4'-DDE	1.97	1.99		ug/L		101	70 - 130
2,4'-DDT	1.97	2.18		ug/L		111	70 - 130
2,4-Dinitrotoluene	1.97	2.28		ug/L		116	70 - 130
2,6-Dinitrotoluene	1.97	2.21		ug/L		112	70 - 130
2-Methylnaphthalene	1.97	2.06		ug/L		105	70 - 130

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

Lab Sample ID: LCS 380-47490/23-A
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47490

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	1.97	2.17		ug/L		110	70 - 130
4,4'-DDE	1.97	2.24		ug/L		114	70 - 130
4,4'-DDT	1.97	2.12		ug/L		107	70 - 130
Acenaphthene	1.97	1.90		ug/L		96	70 - 130
Acenaphthylene	1.97	1.90		ug/L		97	70 - 130
Acetochlor	1.97	1.96		ug/L		99	70 - 130
Alachlor	1.97	1.92		ug/L		97	70 - 130
alpha-BHC	1.97	1.93		ug/L		98	70 - 130
alpha-Chlordane	1.97	2.33		ug/L		118	70 - 130
Anthracene	1.97	1.97		ug/L		100	70 - 130
Atrazine	1.97	2.32		ug/L		118	70 - 130
Benz(a)anthracene	1.97	2.23		ug/L		113	70 - 130
Benzo[a]pyrene	1.97	2.04		ug/L		104	70 - 130
Benzo[b]fluoranthene	1.97	2.25		ug/L		114	70 - 130
Benzo[g,h,i]perylene	1.97	1.82		ug/L		92	70 - 130
Benzo[k]fluoranthene	1.97	2.32		ug/L		118	70 - 130
beta-BHC	1.97	1.93		ug/L		98	70 - 130
Bis(2-ethylhexyl) phthalate	1.97	1.84		ug/L		93	70 - 130
Bromacil	1.97	2.14		ug/L		109	70 - 130
Butachlor	1.97	2.10		ug/L		107	70 - 130
Butylbenzylphthalate	1.97	2.18		ug/L		110	70 - 130
Chlorobenzilate	1.97	1.87		ug/L		95	70 - 130
Chloroneb	1.97	2.07		ug/L		105	70 - 130
Chlorothalonil (Draconil, Bravo)	1.97	1.91		ug/L		97	70 - 130
Chlorpyrifos	1.97	2.14		ug/L		109	70 - 130
Chrysene	1.97	2.12		ug/L		107	70 - 130
delta-BHC	1.97	1.77		ug/L		90	70 - 130
Di(2-ethylhexyl)adipate	1.97	2.02		ug/L		103	70 - 130
Dibenz(a,h)anthracene	1.97	2.21		ug/L		112	70 - 130
Diclorvos (DDVP)	1.97	2.11		ug/L		107	70 - 130
Dieldrin	1.97	1.92		ug/L		97	70 - 130
Diethylphthalate	1.97	2.06		ug/L		105	70 - 130
Dimethylphthalate	1.97	2.15		ug/L		109	70 - 130
Di-n-butyl phthalate	3.94	4.18		ug/L		106	70 - 130
Di-n-octyl phthalate	1.97	1.70		ug/L		86	70 - 130
Endosulfan I (Alpha)	1.97	1.74		ug/L		88	70 - 130
Endosulfan II (Beta)	1.97	1.94		ug/L		99	70 - 130
Endosulfan sulfate	1.97	2.10		ug/L		106	70 - 130
Endrin	1.97	1.99		ug/L		101	70 - 130
Endrin aldehyde	1.97	2.08		ug/L		106	70 - 130
EPTC	1.97	2.08		ug/L		105	70 - 130
Fluoranthene	1.97	2.18		ug/L		111	70 - 130
Fluorene	1.97	2.10		ug/L		106	70 - 130
gamma-Chlordane	1.97	2.23		ug/L		113	70 - 130
Heptachlor	1.97	2.02		ug/L		102	70 - 130
Heptachlor epoxide (isomer B)	1.97	2.23		ug/L		113	70 - 130
Hexachlorobenzene	1.97	2.32		ug/L		118	70 - 130
Hexachlorocyclopentadiene	1.97	2.13		ug/L		108	70 - 130
Indeno[1,2,3-cd]pyrene	1.97	2.15		ug/L		109	70 - 130

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

Lab Sample ID: LCS 380-47490/23-A
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47490

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Isophorone	1.97	1.91		ug/L		97	70 - 130
Lindane	1.97	1.96		ug/L		100	70 - 130
Malathion	1.97	2.03		ug/L		103	70 - 130
Methoxychlor	1.97	2.14		ug/L		109	70 - 130
Metolachlor	1.97	2.06		ug/L		105	70 - 130
Molinate	1.97	2.13		ug/L		108	70 - 130
Naphthalene	1.97	2.00		ug/L		102	70 - 130
Parathion	1.97	2.20		ug/L		112	70 - 130
Pendimethalin (Penoxaline)	1.97	2.10		ug/L		107	70 - 130
Phenanthrene	1.97	1.98		ug/L		100	70 - 130
Propachlor	1.97	1.95		ug/L		99	70 - 130
Pyrene	1.97	2.21		ug/L		112	70 - 130
Simazine	1.97	2.34		ug/L		119	70 - 130
Terbacil	1.97	2.33		ug/L		118	70 - 130
Terbuthylazine	1.97	2.29		ug/L		116	70 - 130
Thiobencarb	1.97	1.97		ug/L		100	70 - 130
trans-Nonachlor	1.97	2.49		ug/L		126	70 - 130
Trifluralin	1.97	1.97		ug/L		100	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*93*		*70 - 130*
Perylene-d12	*89*		*70 - 130*
Triphenylphosphate	*109*		*70 - 130*

Lab Sample ID: LCSD 380-47490/24-A
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47490

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.97	2.00		ug/L		102	70 - 130	1	20
2,4'-DDD	1.97	2.02		ug/L		103	70 - 130	1	20
2,4'-DDE	1.97	2.02		ug/L		103	70 - 130	1	20
2,4'-DDT	1.97	2.18		ug/L		111	70 - 130	0	20
2,4-Dinitrotoluene	1.97	2.28		ug/L		116	70 - 130	0	20
2,6-Dinitrotoluene	1.97	2.16		ug/L		110	70 - 130	2	20
2-Methylnaphthalene	1.97	2.04		ug/L		104	70 - 130	1	20
4,4'-DDD	1.97	2.20		ug/L		112	70 - 130	2	20
4,4'-DDE	1.97	2.25		ug/L		114	70 - 130	0	20
4,4'-DDT	1.97	2.13		ug/L		109	70 - 130	1	20
Acenaphthene	1.97	1.89		ug/L		96	70 - 130	0	20
Acenaphthylene	1.97	1.87		ug/L		95	70 - 130	2	20
Acetochlor	1.97	1.99		ug/L		101	70 - 130	1	20
Alachlor	1.97	1.92		ug/L		98	70 - 130	0	20
alpha-BHC	1.97	1.97		ug/L		100	70 - 130	2	20
alpha-Chlordane	1.97	2.32		ug/L		118	70 - 130	0	20
Anthracene	1.97	1.97		ug/L		100	70 - 130	0	20
Atrazine	1.97	2.32		ug/L		118	70 - 130	0	20
Benz(a)anthracene	1.97	2.26		ug/L		115	70 - 130	1	20

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

Lab Sample ID: LCSD 380-47490/24-A
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47490

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzo[a]pyrene			1.97	2.07		ug/L		105	70 - 130	1	20
Benzo[b]fluoranthene			1.97	2.28		ug/L		116	70 - 130	1	20
Benzo[g,h,i]perylene			1.97	1.80		ug/L		92	70 - 130	1	20
Benzo[k]fluoranthene			1.97	2.22		ug/L		113	70 - 130	4	20
beta-BHC			1.97	1.97		ug/L		100	70 - 130	2	20
Bis(2-ethylhexyl) phthalate			1.97	1.80		ug/L		91	70 - 130	2	20
Bromacil			1.97	2.19		ug/L		111	70 - 130	2	20
Butachlor			1.97	2.13		ug/L		108	70 - 130	1	20
Butylbenzylphthalate			1.97	2.25		ug/L		114	70 - 130	3	20
Chlorobenzilate			1.97	1.90		ug/L		96	70 - 130	2	20
Chloroneb			1.97	2.08		ug/L		106	70 - 130	0	20
Chlorothalonil (Draconil, Bravo)			1.97	1.92		ug/L		97	70 - 130	1	20
Chlorpyrifos			1.97	2.17		ug/L		110	70 - 130	1	20
Chrysene			1.97	2.10		ug/L		107	70 - 130	1	20
delta-BHC			1.97	1.75		ug/L		89	70 - 130	1	20
Di(2-ethylhexyl)adipate			1.97	2.01		ug/L		102	70 - 130	1	20
Dibenz(a,h)anthracene			1.97	2.24		ug/L		114	70 - 130	1	20
Diclorvos (DDVP)			1.97	2.11		ug/L		107	70 - 130	0	20
Dieldrin			1.97	1.86		ug/L		95	70 - 130	3	20
Diethylphthalate			1.97	2.08		ug/L		106	70 - 130	1	20
Dimethylphthalate			1.97	2.13		ug/L		109	70 - 130	1	20
Di-n-butyl phthalate			3.93	4.08		ug/L		104	70 - 130	2	20
Di-n-octyl phthalate			1.97	1.65		ug/L		84	70 - 130	3	20
Endosulfan I (Alpha)			1.97	1.78		ug/L		91	70 - 130	2	20
Endosulfan II (Beta)			1.97	1.93		ug/L		98	70 - 130	1	20
Endosulfan sulfate			1.97	2.15		ug/L		110	70 - 130	3	20
Endrin			1.97	2.03		ug/L		103	70 - 130	2	20
Endrin aldehyde			1.97	2.17		ug/L		110	70 - 130	4	20
EPTC			1.97	2.08		ug/L		106	70 - 130	0	20
Fluoranthene			1.97	2.18		ug/L		111	70 - 130	0	20
Fluorene			1.97	2.11		ug/L		107	70 - 130	1	20
gamma-Chlordane			1.97	2.24		ug/L		114	70 - 130	1	20
Heptachlor			1.97	2.06		ug/L		105	70 - 130	2	20
Heptachlor epoxide (isomer B)			1.97	2.25		ug/L		115	70 - 130	1	20
Hexachlorobenzene			1.97	2.19		ug/L		111	70 - 130	6	20
Hexachlorocyclopentadiene			1.97	2.11		ug/L		107	70 - 130	1	20
Indeno[1,2,3-cd]pyrene			1.97	2.15		ug/L		109	70 - 130	0	20
Isophorone			1.97	1.94		ug/L		99	70 - 130	1	20
Lindane			1.97	1.93		ug/L		98	70 - 130	2	20
Malathion			1.97	1.99		ug/L		101	70 - 130	2	20
Methoxychlor			1.97	2.16		ug/L		110	70 - 130	1	20
Metolachlor			1.97	2.09		ug/L		106	70 - 130	1	20
Molinate			1.97	2.19		ug/L		111	70 - 130	3	20
Naphthalene			1.97	2.00		ug/L		102	70 - 130	0	20
Parathion			1.97	2.22		ug/L		113	70 - 130	1	20
Pendimethalin (Penoxaline)			1.97	2.06		ug/L		105	70 - 130	2	20
Phenanthrene			1.97	1.96		ug/L		100	70 - 130	1	20
Propachlor			1.97	1.93		ug/L		98	70 - 130	1	20
Pyrene			1.97	2.23		ug/L		114	70 - 130	1	20

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

Lab Sample ID: LCSD 380-47490/24-A
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47490

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Simazine			1.97	2.33		ug/L		119	70 - 130	0	20
Terbacil			1.97	2.37		ug/L		120	70 - 130	2	20
Terbuthylazine			1.97	2.29		ug/L		116	70 - 130	0	20
Thiobencarb			1.97	1.99		ug/L		101	70 - 130	1	20
trans-Nonachlor			1.97	2.41		ug/L		123	70 - 130	3	20
Trifluralin			1.97	1.93		ug/L		98	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Nitro-m-xylene	*94*		*70 - 130*
Perylene-d12	*91*		*70 - 130*
Triphenylphosphate	*116*		*70 - 130*

Lab Sample ID: MRL 380-47490/22-A
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47490

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			0.0985	0.119		ug/L		121	50 - 150		
2,4'-DDD			0.0985	0.128		ug/L		130	50 - 150		
2,4'-DDE			0.0985	0.106		ug/L		108	50 - 150		
2,4'-DDT			0.0985	0.102		ug/L		103	50 - 150		
2,4-Dinitrotoluene			0.0985	0.0933	J	ug/L		95	50 - 150		
2,6-Dinitrotoluene			0.0985	0.104		ug/L		106	50 - 150		
2-Methylnaphthalene			0.0985	0.113		ug/L		115	50 - 150		
4,4'-DDD			0.0985	0.105		ug/L		107	50 - 150		
4,4'-DDE			0.0985	0.0962	J	ug/L		98	50 - 150		
4,4'-DDT			0.0985	0.140		ug/L		142	50 - 150		
Acenaphthene			0.0985	0.102		ug/L		104	50 - 150		
Acenaphthylene			0.0985	0.0878	J	ug/L		89	50 - 150		
Acetochlor			0.0492	0.0413	J	ug/L		84	50 - 150		
Alachlor			0.0492	0.0519		ug/L		106	50 - 150		
alpha-BHC			0.0985	0.0996		ug/L		101	50 - 150		
alpha-Chlordane			0.0246	<0.029		ug/L		109	50 - 150		
Anthracene			0.0197	0.0195	J	ug/L		99	50 - 150		
Atrazine			0.0492	0.0549		ug/L		112	50 - 150		
Benz(a)anthracene			0.0492	0.0538		ug/L		109	50 - 150		
Benzo[a]pyrene			0.0197	0.0168	J	ug/L		85	50 - 150		
Benzo[b]fluoranthene			0.0197	0.0212		ug/L		108	50 - 150		
Benzo[g,h,i]perylene			0.0492	0.0606		ug/L		123	50 - 150		
Benzo[k]fluoranthene			0.0197	0.0205		ug/L		104	50 - 150		
beta-BHC			0.0985	0.101		ug/L		103	50 - 150		
Bis(2-ethylhexyl) phthalate			0.591	0.686		ug/L		116	50 - 150		
Bromacil			0.0985	0.144		ug/L		146	50 - 150		
Butachlor			0.0492	0.0578		ug/L		117	50 - 150		
Butylbenzylphthalate			0.148	0.168	J	ug/L		114	50 - 150		
Chlorobenzilate			0.0985	0.117		ug/L		119	50 - 150		
Chloroneb			0.0985	0.128		ug/L		130	50 - 150		
Chlorothalonil (Draconil, Bravo)			0.0985	0.118		ug/L		120	50 - 150		

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

Lab Sample ID: MRL 380-47490/22-A
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47490

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chlorpyrifos	0.0492	0.0567		ug/L		115	50 - 150
Chrysene	0.0197	0.0228		ug/L		116	50 - 150
delta-BHC	0.0985	0.0981		ug/L		100	50 - 150
Di(2-ethylhexyl)adipate	0.295	0.385	J	ug/L		130	50 - 150
Dibenz(a,h)anthracene	0.0492	0.0608		ug/L		123	50 - 150
Diclorvos (DDVP)	0.0492	0.0522		ug/L		106	50 - 150
Dieldrin	0.0985	0.0909	J	ug/L		92	50 - 150
Diethylphthalate	0.148	0.192	J	ug/L		130	50 - 150
Dimethylphthalate	0.295	0.312	J	ug/L		106	50 - 150
Di-n-butyl phthalate	0.295	0.427	J	ug/L		145	49 - 243
Di-n-octyl phthalate	0.0985	0.108		ug/L		110	50 - 150
Endosulfan I (Alpha)	0.0985	0.0936	J	ug/L		95	50 - 150
Endosulfan II (Beta)	0.0985	0.123		ug/L		125	50 - 150
Endosulfan sulfate	0.0985	0.0986		ug/L		100	50 - 150
Endrin	0.0985	0.112		ug/L		114	50 - 150
Endrin aldehyde	0.0985	0.0951	J	ug/L		97	50 - 150
EPTC	0.0985	0.0985		ug/L		100	50 - 150
Fluoranthene	0.0492	0.0576	J	ug/L		117	50 - 150
Fluorene	0.0492	0.0550		ug/L		112	50 - 150
gamma-Chlordane	0.0246	0.0285	J	ug/L		116	50 - 150
Heptachlor	0.0394	0.0455		ug/L		115	50 - 150
Heptachlor epoxide (isomer B)	0.0492	0.0521		ug/L		106	50 - 150
Hexachlorobenzene	0.0492	0.0511		ug/L		104	50 - 150
Hexachlorocyclopentadiene	0.0492	0.0449	J	ug/L		91	50 - 150
Indeno[1,2,3-cd]pyrene	0.0492	0.0665		ug/L		135	50 - 150
Isophorone	0.0985	0.0949	J	ug/L		96	50 - 150
Lindane	0.0394	0.0465		ug/L		118	50 - 150
Malathion	0.0985	0.120		ug/L		122	50 - 150
Methoxychlor	0.0985	0.120		ug/L		122	50 - 150
Metolachlor	0.0492	0.0557		ug/L		113	50 - 150
Molinate	0.0985	0.110		ug/L		111	50 - 150
Naphthalene	0.0985	0.129	J	ug/L		131	50 - 150
Parathion	0.0985	0.136		ug/L		138	50 - 150
Pendimethalin (Penoxaline)	0.0985	0.140		ug/L		142	50 - 150
Phenanthrene	0.0197	0.0255	J	ug/L		130	50 - 150
Propachlor	0.0492	0.0754	^3+	ug/L		153	50 - 150
Pyrene	0.0492	0.0589		ug/L		120	50 - 150
Simazine	0.0492	0.0625		ug/L		127	50 - 150
Terbacil	0.0985	0.111		ug/L		112	50 - 150
Terbuthylazine	0.0985	0.113		ug/L		115	50 - 150
Thiobencarb	0.0985	0.114	J	ug/L		115	50 - 150
trans-Nonachlor	0.0246	0.0272	J	ug/L		110	50 - 150
Trifluralin	0.0985	0.125		ug/L		127	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*94*		*70 - 130*
Perylene-d12	*89*		*70 - 130*
Triphenylphosphate	*113*		*70 - 130*

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

Lab Sample ID: 380-54518-B-6-A MS
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47490

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.099		1.96	2.01		ug/L		102	70 - 130
2,4'-DDD	<0.099		1.96	2.03		ug/L		103	70 - 130
2,4'-DDE	<0.099		1.96	1.94		ug/L		99	70 - 130
2,4'-DDT	<0.099		1.96	2.14		ug/L		109	70 - 130
2,4-Dinitrotoluene	<0.099	F2	1.96	2.46		ug/L		125	70 - 130
2,6-Dinitrotoluene	<0.099	F2	1.96	2.34		ug/L		119	70 - 130
2-Methylnaphthalene	<0.099		1.96	2.02		ug/L		103	70 - 130
4,4'-DDD	<0.099		1.96	2.17		ug/L		110	70 - 130
4,4'-DDE	<0.099		1.96	2.14		ug/L		109	70 - 130
4,4'-DDT	<0.099		1.96	2.03		ug/L		103	70 - 130
Acenaphthene	<0.099		1.96	1.90		ug/L		97	70 - 130
Acenaphthylene	<0.099		1.96	2.00		ug/L		102	70 - 130
Acetochlor	<0.099		1.96	1.95		ug/L		99	70 - 130
Alachlor	<0.049		1.96	1.96		ug/L		100	70 - 130
alpha-BHC	<0.099		1.96	1.94		ug/L		99	70 - 130
alpha-Chlordane	<0.049		1.96	2.32		ug/L		118	70 - 130
Anthracene	<0.020		1.96	1.68		ug/L		85	70 - 130
Atrazine	<0.049		1.96	2.29		ug/L		116	70 - 130
Benz(a)anthracene	<0.049		1.96	2.16		ug/L		110	70 - 130
Benzo[a]pyrene	<0.020		1.96	1.95		ug/L		99	70 - 130
Benzo[b]fluoranthene	<0.020		1.96	2.24		ug/L		114	70 - 130
Benzo[g,h,i]perylene	<0.049		1.96	1.76		ug/L		90	70 - 130
Benzo[k]fluoranthene	<0.020		1.96	2.31		ug/L		117	70 - 130
beta-BHC	<0.099		1.96	1.91		ug/L		97	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.96	1.81		ug/L		82	70 - 130
Bromacil	<0.099		1.96	2.25		ug/L		115	70 - 130
Butachlor	<0.049		1.96	2.29		ug/L		117	70 - 130
Butylbenzylphthalate	<0.49		1.96	2.25		ug/L		114	70 - 130
Chlorobenzilate	<0.099		1.96	1.92		ug/L		98	70 - 130
Chloroneb	<0.099		1.96	2.11		ug/L		107	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.099		1.96	1.94		ug/L		99	70 - 130
Chlorpyrifos	<0.049		1.96	2.18		ug/L		111	70 - 130
Chrysene	<0.020		1.96	2.12		ug/L		108	70 - 130
delta-BHC	<0.099		1.96	1.77		ug/L		90	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.96	1.91		ug/L		93	70 - 130
Dibenz(a,h)anthracene	<0.049		1.96	2.21		ug/L		113	70 - 130
Diclorvos (DDVP)	<0.049		1.96	2.11		ug/L		108	70 - 130
Dieldrin	<0.20		1.96	1.92		ug/L		98	70 - 130
Diethylphthalate	<0.49		1.96	2.07		ug/L		102	70 - 130
Dimethylphthalate	<0.49		1.96	2.20		ug/L		112	70 - 130
Di-n-butyl phthalate	<0.99		3.93	4.10		ug/L		101	70 - 130
Di-n-octyl phthalate	<0.099		1.96	1.69		ug/L		86	70 - 130
Endosulfan I (Alpha)	<0.099		1.96	1.77		ug/L		90	70 - 130
Endosulfan II (Beta)	<0.099		1.96	2.01		ug/L		102	70 - 130
Endosulfan sulfate	<0.099		1.96	2.16		ug/L		110	70 - 130
Endrin	<0.099		1.96	2.10		ug/L		107	70 - 130
Endrin aldehyde	<0.099		1.96	1.74		ug/L		89	70 - 130
EPTC	<0.099		1.96	2.11		ug/L		108	70 - 130

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

Lab Sample ID: 380-54518-B-6-A MS
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47490

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoranthene	<0.099		1.96	2.20		ug/L		112	70 - 130
Fluorene	<0.049		1.96	2.08		ug/L		106	70 - 130
gamma-Chlordane	<0.049		1.96	2.30		ug/L		117	70 - 130
Heptachlor	<0.039		1.96	2.03		ug/L		103	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.96	2.26		ug/L		115	70 - 130
Hexachlorobenzene	<0.049		1.96	2.19		ug/L		112	70 - 130
Hexachlorocyclopentadiene	<0.049		1.96	2.08		ug/L		106	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.96	1.97		ug/L		100	70 - 130
Isophorone	<0.49		1.96	1.96		ug/L		100	70 - 130
Lindane	<0.039		1.96	1.94		ug/L		99	70 - 130
Malathion	<0.099		1.96	2.04		ug/L		104	70 - 130
Methoxychlor	<0.099		1.96	2.27		ug/L		115	70 - 130
Metolachlor	<0.049		1.96	2.09		ug/L		106	70 - 130
Molinate	<0.099		1.96	2.19		ug/L		111	70 - 130
Naphthalene	<0.30		1.96	1.99		ug/L		100	70 - 130
Parathion	<0.099		1.96	2.35		ug/L		120	70 - 130
Pendimethalin (Penoxaline)	<0.099		1.96	2.20		ug/L		112	70 - 130
Phenanthrene	<0.039		1.96	1.98		ug/L		101	70 - 130
Propachlor	<0.049	^3+	1.96	1.94		ug/L		99	70 - 130
Pyrene	<0.049		1.96	2.23		ug/L		113	70 - 130
Simazine	<0.049		1.96	2.39		ug/L		122	70 - 130
Terbacil	<0.099		1.96	2.41		ug/L		123	70 - 130
Terbuthylazine	<0.099		1.96	2.29		ug/L		116	70 - 130
Thiobencarb	<0.20		1.96	2.03		ug/L		103	70 - 130
trans-Nonachlor	<0.049		1.96	2.40		ug/L		122	70 - 130
Trifluralin	<0.099		1.96	1.95		ug/L		99	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*93*		*70 - 130*
Perylene-d12	*93*		*70 - 130*
Triphenylphosphate	*116*		*70 - 130*

Lab Sample ID: 380-54518-B-6-B MSD
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 47490

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	<0.099		1.95	1.92		ug/L		98	70 - 130	5	20
2,4'-DDD	<0.099		1.95	1.97		ug/L		101	70 - 130	3	20
2,4'-DDE	<0.099		1.95	1.94		ug/L		99	70 - 130	0	20
2,4'-DDT	<0.099		1.95	2.06		ug/L		105	70 - 130	4	20
2,4-Dinitrotoluene	<0.099	F2	1.95	1.73	F2	ug/L		89	70 - 130	35	20
2,6-Dinitrotoluene	<0.099	F2	1.95	1.68	F2	ug/L		86	70 - 130	33	20
2-Methylnaphthalene	<0.099		1.95	1.95		ug/L		100	70 - 130	4	20
4,4'-DDD	<0.099		1.95	2.09		ug/L		107	70 - 130	4	20
4,4'-DDE	<0.099		1.95	2.08		ug/L		106	70 - 130	3	20
4,4'-DDT	<0.099		1.95	1.96		ug/L		100	70 - 130	4	20
Acenaphthene	<0.099		1.95	1.87		ug/L		96	70 - 130	2	20

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

Lab Sample ID: 380-54518-B-6-B MSD
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 47490

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acenaphthylene	<0.099		1.95	1.92		ug/L		98	70 - 130	4	20
Acetochlor	<0.099		1.95	1.89		ug/L		97	70 - 130	3	20
Alachlor	<0.049		1.95	1.86		ug/L		95	70 - 130	5	20
alpha-BHC	<0.099		1.95	1.93		ug/L		99	70 - 130	1	20
alpha-Chlordane	<0.049		1.95	2.26		ug/L		116	70 - 130	3	20
Anthracene	<0.020		1.95	1.60		ug/L		82	70 - 130	5	20
Atrazine	<0.049		1.95	2.19		ug/L		112	70 - 130	4	20
Benz(a)anthracene	<0.049		1.95	2.13		ug/L		109	70 - 130	2	20
Benzo[a]pyrene	<0.020		1.95	2.02		ug/L		104	70 - 130	4	20
Benzo[b]fluoranthene	<0.020		1.95	2.41		ug/L		123	70 - 130	7	20
Benzo[g,h,i]perylene	<0.049		1.95	1.72		ug/L		88	70 - 130	2	20
Benzo[k]fluoranthene	<0.020		1.95	2.43		ug/L		124	70 - 130	5	20
beta-BHC	<0.099		1.95	1.90		ug/L		97	70 - 130	1	20
Bis(2-ethylhexyl) phthalate	<0.59		1.95	1.73		ug/L		79	70 - 130	4	20
Bromacil	<0.099		1.95	1.97		ug/L		101	70 - 130	13	20
Butachlor	<0.049		1.95	2.08		ug/L		107	70 - 130	10	20
Butylbenzylphthalate	<0.49		1.95	2.22		ug/L		114	70 - 130	1	20
Chlorobenzilate	<0.099		1.95	1.86		ug/L		95	70 - 130	3	20
Chloroneb	<0.099		1.95	2.01		ug/L		103	70 - 130	5	20
Chlorothalonil (Draconil, Bravo)	<0.099		1.95	1.82		ug/L		93	70 - 130	6	20
Chlorpyrifos	<0.049		1.95	2.15		ug/L		110	70 - 130	1	20
Chrysene	<0.020		1.95	2.27		ug/L		116	70 - 130	7	20
delta-BHC	<0.099		1.95	1.70		ug/L		87	70 - 130	4	20
Di(2-ethylhexyl)adipate	<0.59		1.95	1.75		ug/L		85	70 - 130	9	20
Dibenz(a,h)anthracene	<0.049		1.95	2.07		ug/L		106	70 - 130	6	20
Diclorvos (DDVP)	<0.049		1.95	1.87		ug/L		95	70 - 130	12	20
Dieldrin	<0.20		1.95	1.85		ug/L		95	70 - 130	4	20
Diethylphthalate	<0.49		1.95	1.95		ug/L		96	70 - 130	6	20
Dimethylphthalate	<0.49		1.95	1.90		ug/L		97	70 - 130	14	20
Di-n-butyl phthalate	<0.99		3.91	4.07		ug/L		100	70 - 130	1	20
Di-n-octyl phthalate	<0.099		1.95	1.64		ug/L		84	70 - 130	3	20
Endosulfan I (Alpha)	<0.099		1.95	1.75		ug/L		90	70 - 130	1	20
Endosulfan II (Beta)	<0.099		1.95	1.94		ug/L		99	70 - 130	4	20
Endosulfan sulfate	<0.099		1.95	2.13		ug/L		109	70 - 130	2	20
Endrin	<0.099		1.95	1.95		ug/L		100	70 - 130	8	20
Endrin aldehyde	<0.099		1.95	1.91		ug/L		98	70 - 130	9	20
EPTC	<0.099		1.95	2.00		ug/L		103	70 - 130	5	20
Fluoranthene	<0.099		1.95	2.19		ug/L		112	70 - 130	0	20
Fluorene	<0.049		1.95	2.07		ug/L		106	70 - 130	1	20
gamma-Chlordane	<0.049		1.95	2.18		ug/L		112	70 - 130	5	20
Heptachlor	<0.039		1.95	1.99		ug/L		102	70 - 130	2	20
Heptachlor epoxide (isomer B)	<0.049		1.95	2.20		ug/L		113	70 - 130	2	20
Hexachlorobenzene	<0.049		1.95	2.24		ug/L		114	70 - 130	2	20
Hexachlorocyclopentadiene	<0.049		1.95	2.07		ug/L		106	70 - 130	1	20
Indeno[1,2,3-cd]pyrene	<0.049		1.95	2.05		ug/L		105	70 - 130	4	20
Isophorone	<0.49		1.95	1.78		ug/L		91	70 - 130	10	20
Lindane	<0.039		1.95	1.88		ug/L		96	70 - 130	4	20
Malathion	<0.099		1.95	1.94		ug/L		99	70 - 130	5	20
Methoxychlor	<0.099		1.95	2.42		ug/L		124	70 - 130	7	20

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

Lab Sample ID: 380-54518-B-6-B MSD
Matrix: Water
Analysis Batch: 47622

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 47490

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Metolachlor	<0.049		1.95	2.02		ug/L		104	70 - 130	3	20
Molinate	<0.099		1.95	2.09		ug/L		107	70 - 130	4	20
Naphthalene	<0.30		1.95	1.93		ug/L		98	70 - 130	3	20
Parathion	<0.099		1.95	2.15		ug/L		110	70 - 130	9	20
Pendimethalin (Penoxaline)	<0.099		1.95	2.07		ug/L		106	70 - 130	6	20
Phenanthrene	<0.039		1.95	1.95		ug/L		100	70 - 130	2	20
Propachlor	<0.049	^3+	1.95	1.85		ug/L		95	70 - 130	5	20
Pyrene	<0.049		1.95	2.22		ug/L		113	70 - 130	1	20
Simazine	<0.049		1.95	2.17		ug/L		111	70 - 130	10	20
Terbacil	<0.099		1.95	2.16		ug/L		111	70 - 130	11	20
Terbuthylazine	<0.099		1.95	2.22		ug/L		114	70 - 130	3	20
Thiobencarb	<0.20		1.95	2.01		ug/L		103	70 - 130	1	20
trans-Nonachlor	<0.049		1.95	2.32		ug/L		119	70 - 130	4	20
Trifluralin	<0.099		1.95	1.82		ug/L		93	70 - 130	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Nitro-m-xylene	*88*		*70 - 130*
Perylene-d12	*88*		*70 - 130*
Triphenylphosphate	*114*		*70 - 130*

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

Lab Sample ID: MBL 380-47736/23-A
Matrix: Water
Analysis Batch: 47877

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47736

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1

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

Lab Sample ID: MBL 380-47736/23-A
Matrix: Water
Analysis Batch: 47877

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47736

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		07/18/23 06:12	07/19/23 17:59	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*118*		*70 - 130*	*07/18/23 06:12*	*07/19/23 17:59*	*1*
13C2 PFHxA	*117*		*70 - 130*	*07/18/23 06:12*	*07/19/23 17:59*	*1*
13C2 PFDA	*121*		*70 - 130*	*07/18/23 06:12*	*07/19/23 17:59*	*1*
13C3-GenX	*115*		*70 - 130*	*07/18/23 06:12*	*07/19/23 17:59*	*1*

Lab Sample ID: LCS 380-47736/25-A
Matrix: Water
Analysis Batch: 47877

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47736

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			25.1	26.9		ng/L		108	70 - 130		
Perfluorooctanesulfonic acid (PFOS)			23.2	24.7		ng/L		106	70 - 130		
Perfluoroundecanoic acid (PFUnA)			25.1	26.5		ng/L		106	70 - 130		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			25.1	25.8		ng/L		103	70 - 130		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			25.1	25.4		ng/L		101	70 - 130		
Perfluorohexanoic acid (PFHxA)			25.1	27.5		ng/L		110	70 - 130		
Perfluorododecanoic acid (PFDoA)			25.1	27.2		ng/L		109	70 - 130		
Perfluorooctanoic acid (PFOA)			25.1	28.0		ng/L		112	70 - 130		
Perfluorodecanoic acid (PFDA)			25.1	27.7		ng/L		111	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)			22.9	24.8		ng/L		108	70 - 130		
Perfluorobutanesulfonic acid (PFBS)			22.2	24.6		ng/L		111	70 - 130		
Perfluoroheptanoic acid (PFHpA)			25.1	25.9		ng/L		103	70 - 130		
Perfluorononanoic acid (PFNA)			25.1	28.4		ng/L		113	70 - 130		
Perfluorotetradecanoic acid (PFTA)			25.1	27.4		ng/L		109	70 - 130		
Perfluorotridecanoic acid (PFTrDA)			25.1	26.9		ng/L		107	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			23.4	25.0		ng/L		107	70 - 130		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			23.7	24.2		ng/L		102	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			23.7	24.9		ng/L		105	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
d5-NEtFOSAA	*110*		*70 - 130*
13C2 PFHxA	*116*		*70 - 130*
13C2 PFDA	*117*		*70 - 130*

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

Lab Sample ID: LCS 380-47736/25-A
Matrix: Water
Analysis Batch: 47877

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47736

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

Lab Sample ID: LCSD 380-47736/26-A
Matrix: Water
Analysis Batch: 47877

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47736

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			25.1	26.4		ng/L		105	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)			23.2	25.3		ng/L		109	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)			25.1	26.3		ng/L		105	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			25.1	26.4		ng/L		105	70 - 130	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			25.1	25.0		ng/L		100	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)			25.1	27.4		ng/L		109	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)			25.1	26.0		ng/L		104	70 - 130	4	30
Perfluorooctanoic acid (PFOA)			25.1	27.5		ng/L		110	70 - 130	2	30
Perfluorodecanoic acid (PFDA)			25.1	26.5		ng/L		106	70 - 130	5	30
Perfluorohexanesulfonic acid (PFHxS)			22.9	25.6		ng/L		112	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)			22.2	24.4		ng/L		110	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)			25 1	26 5		ng/L		106	70 - 130	2	30
Perfluorononanoic acid (PFNA)			25.1	27.1		ng/L		108	70 - 130	4	30
Perfluorotetradecanoic acid (PFTA)			25.1	26.2		ng/L		105	70 - 130	4	30
Perfluorotridecanoic acid (PFTrDA)			25.1	26.4		ng/L		105	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			23.4	25.2		ng/L		108	70 - 130	1	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			23.7	24.5		ng/L		104	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			23.7	25.1		ng/L		106	70 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
d5-NEtFOSAA	112		70 - 130
13C2 PFHxA	120		70 - 130
13C2 PFDA	120		70 - 130
13C3-GenX	116		70 - 130

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

Lab Sample ID: MRL 380-47736/24-A
Matrix: Water
Analysis Batch: 47877

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47736

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.85	2.15	J	ng/L		116	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.29	J	ng/L		115	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.23	J	ng/L		112	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.19	J	ng/L		110	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.42	J	ng/L		121	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.21	J	ng/L		111	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.51	J	ng/L		126	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.37	J	ng/L		119	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.09	J	ng/L		114	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	2.11	J	ng/L		119	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.43	J	ng/L		121	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.47	J	ng/L		124	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.31	J	ng/L		116	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.20	J	ng/L		110	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	2.14	J	ng/L		114	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	2.04	J	ng/L		108	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.10	J	ng/L		111	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*109*		*70 - 130*
13C2 PFHxA	*118*		*70 - 130*
13C2 PFDA	*119*		*70 - 130*
13C3-GenX	*115*		*70 - 130*

Lab Sample ID: 380-54592-B-1-A MS
Matrix: Water
Analysis Batch: 47877

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47736

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.21		ng/L		110	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		1.86	2.77		ng/L		110	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.23		ng/L		111	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.30		ng/L		115	70 - 130

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

Lab Sample ID: 380-54592-B-1-A MS
Matrix: Water
Analysis Batch: 47877

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47736

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.22		ng/L		111	70 - 130
Perfluorohexanoic acid (PFHxA)	9.8		2.01	12.3	4	ng/L		124	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.29		ng/L		114	70 - 130
Perfluorooctanoic acid (PFOA)	3.9		2.01	6.21		ng/L		113	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.33		ng/L		116	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		1.83	3.37		ng/L		111	70 - 130
Perfluorobutanesulfonic acid (PFBS)	5.8	F1	1.78	7.92		ng/L		121	70 - 130
Perfluoroheptanoic acid (PFHpA)	3.3		2.01	5.51		ng/L		108	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.56		ng/L		128	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	2.19		ng/L		109	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.01	2.27		ng/L		113	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		1.88	2.00		ng/L		107	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		1.90	2.00		ng/L		106	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		1.90	2.10		ng/L		111	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*104*		*70 - 130*
13C2 PFHxA	*112*		*70 - 130*
13C2 PFDA	*114*		*70 - 130*
13C3-GenX	*110*		*70 - 130*

Lab Sample ID: 380-54592-C-1-A MSD
Matrix: Water
Analysis Batch: 47877

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 47736

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.20		ng/L		110	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		1.86	2.79		ng/L		111	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.18		ng/L		109	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.21		ng/L		110	70 - 130	4	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.23		ng/L		111	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	9.8		2.01	12.6	4	ng/L		136	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.22		ng/L		111	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	3.9		2.01	6.41		ng/L		123	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.27		ng/L		113	70 - 130	3	30

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

Lab Sample ID: 380-54592-C-1-A MSD
Matrix: Water
Analysis Batch: 47877

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 47736

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		1.83	3.58		ng/L		123	70 - 130	6	30
Perfluorobutanesulfonic acid (PFBS)	5.8	F1	1.78	8.38	F1	ng/L		147	70 - 130	6	30
Perfluoroheptanoic acid (PFHpA)	3.3		2.01	5.54		ng/L		110	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.51		ng/L		125	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	2.34		ng/L		116	70 - 130	6	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.01	2.15		ng/L		107	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		1.88	2.02		ng/L		108	70 - 130	1	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		1.90	<2.0		ng/L		102	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		1.90	2.20		ng/L		116	70 - 130	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*110*		*70 - 130*
13C2 PFHxA	*112*		*70 - 130*
13C2 PFDA	*114*		*70 - 130*
13C3-GenX	*111*		*70 - 130*

QC Association Summary

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

Job ID: 380-54624-1

GC/MS Semi VOA

Prep Batch: 47490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54624-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	525.2	
MB 380-47490/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-47490/23-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-47490/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-47490/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-54518-B-6-A MS	Matrix Spike	Total/NA	Water	525.2	
380-54518-B-6-B MSD	Matrix Spike Duplicate	Total/NA	Water	525.2	

Analysis Batch: 47622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54624-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	525.2	47490
MB 380-47490/21-A	Method Blank	Total/NA	Water	525.2	47490
LCS 380-47490/23-A	Lab Control Sample	Total/NA	Water	525.2	47490
LCSD 380-47490/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	47490
MRL 380-47490/22-A	Lab Control Sample	Total/NA	Water	525.2	47490
380-54518-B-6-A MS	Matrix Spike	Total/NA	Water	525.2	47490
380-54518-B-6-B MSD	Matrix Spike Duplicate	Total/NA	Water	525.2	47490

LCMS

Prep Batch: 47736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54624-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	537.1 DW	
380-54624-2	FB: HALAWA WELLS UNITS 1 & 2	Total/NA	Water	537.1 DW	
MBL 380-47736/23-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-47736/25-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-47736/26-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-47736/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-54592-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-54592-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 47877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54624-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	537.1	47736
380-54624-2	FB: HALAWA WELLS UNITS 1 & 2	Total/NA	Water	537.1	47736
MBL 380-47736/23-A	Method Blank	Total/NA	Water	537.1	47736
LCS 380-47736/25-A	Lab Control Sample	Total/NA	Water	537.1	47736
LCSD 380-47736/26-A	Lab Control Sample Dup	Total/NA	Water	537.1	47736
MRL 380-47736/24-A	Lab Control Sample	Total/NA	Water	537.1	47736
380-54592-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	47736
380-54592-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	47736

Lab Chronicle

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

Job ID: 380-54624-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-54624-1
Matrix: Drinking Water
Date Collected: 07/11/23 09:30
Date Received: 07/13/23 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			47490	N8NE	EA POM	07/16/23 14:45
Total/NA	Analysis	525.2		1	47622	UPAC	EA POM	07/17/23 22:44
Total/NA	Prep	537.1 DW			47736	US1B	EA POM	07/18/23 06:12
Total/NA	Analysis	537.1		1	47877	UKDT	EA POM	07/19/23 19:56

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-54624-2
Matrix: Water
Date Collected: 07/11/23 09:30
Date Received: 07/13/23 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			47736	US1B	EA POM	07/18/23 06:12
Total/NA	Analysis	537.1		1	47877	UKDT	EA POM	07/19/23 20:05

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 380-54624-1

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-24

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

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

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Molinate
525.2	525.2	Drinking Water	Naphthalene
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Phenanthrene
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	Terbuthylazine
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: 380-54624-1

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
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

Laboratory References:

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

Sample Summary

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

Job ID: 380-54624-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-54624-1	HALAWA WELLS UNITS 1 & 2	Drinking Water	07/11/23 09:30	07/13/23 11:00	HI0000331
380-54624-2	FB: HALAWA WELLS UNITS 1 & 2	Water	07/11/23 09:30	07/13/23 11:00	

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

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Bryson Nakamoto	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27941-2757.2
Client Contact: Dr. Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 2 of 2
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:			
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#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, 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		
MOANALUA WELLS				Water											
AIEA GULCH WELLS PUMP2				Water											
AIEA WELLS PUMPS 1&2 (260)				Water											
HALAWA WELLS UNITS 1&2	7/11/2023	0930	G	Water			2		2	2	3				Pump1
FB MOANALUA WELLS				Water											
FB AIEA GULCH WELLS PUMP2				Water											
FB AIEA WELLS PUMPS 1&2 (260)				Water											
FB HALAWA WELLS UNITS 1&2	7/11/2023			Water							2				

380-54624 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

7727 2344 8265

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FEDEX 7727 2344 8460

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[redacted]	7/11/2023 1020	HBWS	G. REITNER	07/13/2023 11:00	EEAP
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: GEL-FROZEN (751A) 5.5-0.2=5.3° / 5.2-0.2=5.0°

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

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Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

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AIEA GULCH WELLS PUMP2				Water											
AIEA WELLS PUMPS 1&2 (260)				Water											
HALAWA WELLS UNITS 1&2	7/11/2023	0930	G	Water								3	3		Pump 1
FB MOANALUA WELLS				Water											
FB AIEA GULCH WELLS PUMP2				Water											
FB AIEA WELLS PUMPS 1&2 (260)				Water											
FB HALAWA WELLS UNITS 1&2	7/11/2023			Water								1	1		

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Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: 7727 2344 8265

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FED EX 7727 2344 8460

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Bryson Nakamoto	7/11/2023 1020	HBWS	G. REITNER	07/13/2023 11:00	EEAP
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: GEL-FROZEN (757A) 5.5°-0.2=5.3° / 5.2°-0.2=5.0°

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-54624-1

Login Number: 54624
List Number: 1
Creator: Do, Michelle

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	