eurofins | Environment Testing

# 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 4/9/2024 12:42:27 PM

## JOB DESCRIPTION

RED-HILL
524.2, 533, 537.1
RUSH Weekly Red Hill

## JOB NUMBER

380-87962-1

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

See page two for job notes and contact information.





my EOL

# Eurofins Eaton Analytical Pomona

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Rachelle Arada

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Authorized for release by
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# Table of Contents

# Definitions/Glossary

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

## Qualifiers

### GC/MS Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| 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. |

### LCMS

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

## Glossary

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

**Job Narrative**
**380-87962-1**

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

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

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

**Receipt**
The samples were received on 3/20/2024 10:55 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9°C and 3.3°C.

**Receipt Exceptions**
The following samples were received with ice present in the containers. The samples and containers appeared to be intact. 533 FB bottles for both sites received with ice in sample. Analysis of the Field Blank cancelled due to this issue. Detection found in sample HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-87962-6) therefore, data excluded. Sample MOANALUA WELLS (331-223-TP202) (380-87962-5) results are ND thus valid for reporting.

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

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

# Detection Summary

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

## Client Sample ID: MOANALUA WELLS (331-223-TP202) — Lab Sample ID: 380-87962-1
**PWSID Number: HI0000331**

No Detections.

## Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) — Lab Sample ID: 380-87962-2
**PWSID Number: HI0000331**

No Detections.

## Client Sample ID: MOANALUA WELLS (331-223-TP202) — Lab Sample ID: 380-87962-5
**PWSID Number: HI0000331**

No Detections.

## Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) — Lab Sample ID: 380-87962-6
**PWSID Number: HI0000331**

| 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 |
| Perfluorohexanesulfonic acid (PFHxS) | 2.4 | | 2.0 | | ng/L | 1 | | 537.1 | Total/NA |

## Client Sample ID: FB:MOANALUA WELLS (331-223-TP202) — Lab Sample ID: 380-87962-7

No Detections.

## Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) — Lab Sample ID: 380-87962-8

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

**Client Sample ID: MOANALUA WELLS (331-223-TP202)**
**Date Collected: 03/18/24 09:49**
**Date Received: 03/20/24 10:55**

**Lab Sample ID: 380-87962-1**
**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 | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| 2,4'-DDD | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| 2,4'-DDE | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| 2,4'-DDT | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| 2,4-Dinitrotoluene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| 2,6-Dinitrotoluene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| 2-Methylnaphthalene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| 4,4'-DDD | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| 4,4'-DDE | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| 4,4'-DDT | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Acenaphthene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Acenaphthylene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Acetochlor | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Alachlor | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| alpha-BHC | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| alpha-Chlordane | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Anthracene | <0.019 | | 0.019 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Atrazine | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Benz(a)anthracene | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Benzo[a]pyrene | <0.019 | | 0.019 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Benzo[b]fluoranthene | <0.019 | | 0.019 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Benzo[g,h,i]perylene | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Benzo[k]fluoranthene | <0.019 | | 0.019 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| beta-BHC | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Bis(2-ethylhexyl) phthalate | <0.58 | | 0.58 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Bromacil | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Butachlor | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Butylbenzylphthalate | <0.49 | | 0.49 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Chlorobenzilate | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Chloroneb | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Chlorothalonil (Draconil, Bravo) | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Chlorpyrifos | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Chrysene | <0.019 | | 0.019 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| delta-BHC | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Di(2-ethylhexyl)adipate | <0.58 | | 0.58 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Dibenz(a,h)anthracene | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Diclorvos (DDVP) | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Dieldrin | <0.19 | | 0.19 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Diethylphthalate | <0.49 | | 0.49 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Dimethylphthalate | <0.49 | | 0.49 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Di-n-butyl phthalate | <0.97 | | 0.97 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Di-n-octyl phthalate | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Endosulfan I (Alpha) | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Endosulfan II (Beta) | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Endosulfan sulfate | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Endrin | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Endrin aldehyde | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| EPTC | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Fluoranthene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

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

**Lab Sample ID: 380-87962-1**
**Date Collected: 03/18/24 09:49**
**Matrix: Drinking Water**
**Date Received: 03/20/24 10:55**
**PWSID Number: HI0000331**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Fluorene | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| gamma-Chlordane | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Heptachlor | <0.039 | | 0.039 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Heptachlor epoxide (isomer B) | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Hexachlorobenzene | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Hexachlorocyclopentadiene | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Isophorone | <0.49 | | 0.49 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Lindane | <0.039 | | 0.039 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Malathion | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Methoxychlor | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Metolachlor | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Molinate | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Naphthalene | <0.29 | | 0.29 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Parathion | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Pendimethalin (Penoxaline) | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Phenanthrene | <0.039 | | 0.039 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Propachlor | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Pyrene | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Simazine | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Terbacil | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Terbuthylazine | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Thiobencarb | <0.19 | | 0.19 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Total Permethrin (mixed isomers) | <0.19 | | 0.19 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| trans-Nonachlor | <0.049 | | 0.049 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |
| Trifluralin | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:24 | 1 |

| *Tentatively Identified Compound* | *Est. Result* | *Qualifier* | *Unit* | *D* | *RT* | *CAS No.* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|---|---|---|
| *Tentatively Identified Compound* | *None* | | *ug/L* | | | *N/A* | *03/21/24 11:15* | *03/22/24 12:24* | *1* |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Nitro-m-xylene* | *113* | | *70 - 130* | *03/21/24 11:15* | *03/22/24 12:24* | *1* |
| *Perylene-d12* | *89* | | *70 - 130* | *03/21/24 11:15* | *03/22/24 12:24* | *1* |
| *Triphenylphosphate* | *92* | | *70 - 130* | *03/21/24 11:15* | *03/22/24 12:24* | *1* |

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

**Lab Sample ID: 380-87962-2**
**Date Collected: 03/18/24 10:22**
**Matrix: Drinking Water**
**Date Received: 03/20/24 10:55**
**PWSID Number: HI0000331**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| 2,4'-DDD | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| 2,4'-DDE | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| 2,4'-DDT | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| 2,4-Dinitrotoluene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| 2,6-Dinitrotoluene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| 2-Methylnaphthalene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| 4,4'-DDD | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)**
**Date Collected: 03/18/24 10:22**
**Date Received: 03/20/24 10:55**

**Lab Sample ID: 380-87962-2**
**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 |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDE | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| 4,4'-DDT | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Acenaphthene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Acenaphthylene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Acetochlor | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Alachlor | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| alpha-BHC | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| alpha-Chlordane | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Anthracene | <0.019 | | 0.019 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Atrazine | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Benz(a)anthracene | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Benzo[a]pyrene | <0.019 | | 0.019 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Benzo[b]fluoranthene | <0.019 | | 0.019 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Benzo[g,h,i]perylene | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Benzo[k]fluoranthene | <0.019 | | 0.019 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| beta-BHC | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Bis(2-ethylhexyl) phthalate | <0.58 | | 0.58 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Bromacil | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Butachlor | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Butylbenzylphthalate | <0.48 | | 0.48 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Chlorobenzilate | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Chloroneb | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Chlorothalonil (Draconil, Bravo) | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Chlorpyrifos | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Chrysene | <0.019 | | 0.019 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| delta-BHC | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Di(2-ethylhexyl)adipate | <0.58 | | 0.58 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Dibenz(a,h)anthracene | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Diclorvos (DDVP) | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Dieldrin | <0.19 | | 0.19 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Diethylphthalate | <0.48 | | 0.48 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Dimethylphthalate | <0.48 | | 0.48 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Di-n-butyl phthalate | <0.97 | | 0.97 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Di-n-octyl phthalate | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Endosulfan I (Alpha) | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Endosulfan II (Beta) | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Endosulfan sulfate | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Endrin | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Endrin aldehyde | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| EPTC | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Fluoranthene | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Fluorene | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| gamma-Chlordane | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Heptachlor | <0.039 | | 0.039 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Heptachlor epoxide (isomer B) | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Hexachlorobenzene | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Hexachlorocyclopentadiene | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |

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

**Lab Sample ID: 380-87962-2**

**Date Collected: 03/18/24 10:22**
**Date Received: 03/20/24 10:55**

**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 |
|---|---|---|---|---|---|---|---|---|---|
| Isophorone | <0.48 | | 0.48 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Lindane | <0.039 | | 0.039 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Malathion | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Methoxychlor | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Metolachlor | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Molinate | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Naphthalene | <0.29 | | 0.29 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Parathion | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Pendimethalin (Penoxaline) | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Phenanthrene | <0.039 | | 0.039 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Propachlor | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Pyrene | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Simazine | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Terbacil | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Terbuthylazine | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Thiobencarb | <0.19 | | 0.19 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Total Permethrin (mixed isomers) | <0.19 | | 0.19 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| trans-Nonachlor | <0.048 | | 0.048 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |
| Trifluralin | <0.097 | | 0.097 | | ug/L | | 03/21/24 11:15 | 03/22/24 12:44 | 1 |

| *Tentatively Identified Compound* | *Est. Result* | *Qualifier* | *Unit* | *D* | *RT* | *CAS No.* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|---|---|---|
| *Tentatively Identified Compound* | *None* | | *ug/L* | | | *N/A* | *03/21/24 11:15* | *03/22/24 12:44* | *1* |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Nitro-m-xylene* | *108* | | *70 - 130* | *03/21/24 11:15* | *03/22/24 12:44* | *1* |
| *Perylene-d12* | *82* | | *70 - 130* | *03/21/24 11:15* | *03/22/24 12:44* | *1* |
| *Triphenylphosphate* | *83* | | *70 - 130* | *03/21/24 11:15* | *03/22/24 12:44* | *1* |

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

**Lab Sample ID: 380-87962-5**

**Date Collected: 03/18/24 09:49**
**Date Received: 03/20/24 10:55**

**Matrix: Water**
**PWSID Number: HI0000331**

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

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

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

**Client Sample ID: MOANALUA WELLS (331-223-TP202)**
**Date Collected: 03/18/24 09:49**
**Date Received: 03/20/24 10:55**

**Lab Sample ID: 380-87962-5**
**Matrix: Water**
**PWSID Number: HI0000331**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorooctanoic acid (PFOA) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |
| Perfluorobutanoic acid (PFBA) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |
| Perfluoropentanoic acid (PFPeA) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | <2.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 19:29 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C3 HFPO-DA* | *66* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C6 PFDA* | *72* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C5 PFHxA* | *70* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C4 PFHpA* | *74* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C8 PFOA* | *74* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C9 PFNA* | *75* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C7 PFUnA* | *77* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C2 PFDoA* | *81* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C4 PFBA* | *76* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C5 PFPeA* | *80* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C3 PFBS* | *92* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C3 PFHxS* | *100* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C8 PFOS* | *97* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C2-4:2-FTS* | *130* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C2-6:2-FTS* | *118* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |
| *13C2-8:2-FTS* | *100* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 19:29* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |

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

**Lab Sample ID: 380-87962-5**
**Date Collected: 03/18/24 09:49**
**Matrix: Water**
**Date Received: 03/20/24 10:55**
**PWSID Number: HI0000331**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorooctanoic acid (PFOA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| Perfluorotetradecanoic acid (PFTA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:22 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *d5-NEtFOSAA* | *103* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 18:22* | *1* |
| *13C2 PFHxA* | *112* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 18:22* | *1* |
| *13C2 PFDA* | *108* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 18:22* | *1* |
| *13C3-GenX* | *101* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 18:22* | *1* |

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

**Lab Sample ID: 380-87962-6**
**Date Collected: 03/18/24 10:22**
**Matrix: Water**
**Date Received: 03/20/24 10:55**
**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) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| **Perfluorooctanesulfonic acid (PFOS)** | **2.1** | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| **Perfluorohexanoic acid (PFHxA)** | **2.0** | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| **Perfluorohexanesulfonic acid (PFHxS)** | **2.4** | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| Perfluorotetradecanoic acid (PFTA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |

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

**Lab Sample ID: 380-87962-6**

**Date Collected: 03/18/24 10:22**
**Date Received: 03/20/24 10:55**

**Matrix: Water**
**PWSID Number: HI0000331**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:31 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *d5-NEtFOSAA* | *98* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 18:31* | *1* |
| *13C2 PFHxA* | *107* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 18:31* | *1* |
| *13C2 PFDA* | *102* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 18:31* | *1* |
| *13C3-GenX* | *97* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 18:31* | *1* |

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

**Lab Sample ID: 380-87962-7**

**Date Collected: 03/18/24 09:49**
**Date Received: 03/20/24 10:55**

**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) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| Perfluorotetradecanoic acid (PFTA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 18:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *d5-NEtFOSAA* | *105* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 18:52* | *1* |
| *13C2 PFHxA* | *106* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 18:52* | *1* |
| *13C2 PFDA* | *108* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 18:52* | *1* |
| *13C3-GenX* | *97* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 18:52* | *1* |

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)**
**Date Collected: 03/18/24 10:22**
**Date Received: 03/20/24 10:55**

**Lab Sample ID: 380-87962-8**
**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) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| Perfluorotetradecanoic acid (PFTA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 19:03 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *d5-NEtFOSAA* | *101* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 19:03* | *1* |
| *13C2 PFHxA* | *104* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 19:03* | *1* |
| *13C2 PFDA* | *102* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 19:03* | *1* |
| *13C3-GenX* | *97* | | *70 - 130* | *03/21/24 11:19* | *03/22/24 19:03* | *1* |

# Action Limit Summary

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

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

**Lab Sample ID: 380-87962-1**

**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 | <0.019 | | ug/L | 0.2 | 0.019 | 525.2 | Total/NA |
| Bis(2-ethylhexyl) phthalate | <0.58 | | ug/L | 6 | 0.58 | 525.2 | Total/NA |
| Di(2-ethylhexyl)adipate | <0.58 | | ug/L | 400 | 0.58 | 525.2 | Total/NA |
| Endrin | <0.097 | | ug/L | 2 | 0.097 | 525.2 | Total/NA |
| Heptachlor | <0.039 | | ug/L | 0.4 | 0.039 | 525.2 | Total/NA |
| Heptachlor epoxide (isomer B) | <0.049 | | ug/L | 0.2 | 0.049 | 525.2 | Total/NA |
| Hexachlorobenzene | <0.049 | | ug/L | 1 | 0.049 | 525.2 | Total/NA |
| Hexachlorocyclopentadiene | <0.049 | | ug/L | 50 | 0.049 | 525.2 | Total/NA |
| Lindane | <0.039 | | ug/L | 0.2 | 0.039 | 525.2 | Total/NA |
| Methoxychlor | <0.097 | | ug/L | 40 | 0.097 | 525.2 | Total/NA |
| Simazine | <0.049 | | ug/L | 4 | 0.049 | 525.2 | Total/NA |

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

**Lab Sample ID: 380-87962-2**

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

# Surrogate Summary

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

## 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) |
| 380-87962-1 | MOANALUA WELLS (331-223-T | 113 | 89 | 92 |
| 380-87962-2 | HALAWA WELLS UNITS 1 & 2 (331-206-TP065) | 108 | 82 | 83 |

**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) |
| 380-87930-X-1-A DU | Duplicate | 108 | 91 | 95 |
| 380-87704-AH-1-A MS | Matrix Spike | 110 | 94 | 96 |
| LCS 380-82578/23-A | Lab Control Sample | 108 | 89 | 93 |
| MB 380-82578/21-A | Method Blank | 109 | 88 | 96 |
| MRL 380-82578/22-A | Lab Control Sample | 108 | 88 | 92 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | | | |
|---|---|---|---|---|---|
| | | d5NEFOS | PFHxA | PFDA | GenX |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) | (70-130) | (70-130) |
| 380-87962-5 | MOANALUA WELLS (331-223-T | 103 | 112 | 108 | 101 |
| 380-87962-6 | HALAWA WELLS UNITS 1 & 2 (331-206-TP065) | 98 | 107 | 102 | 97 |
| 380-87962-7 | FB:MOANALUA WELLS (331-223-TP202) | 105 | 106 | 108 | 97 |
| 380-87962-8 | FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) | 101 | 104 | 102 | 97 |
| 380-87670-AH-1-A MS | Matrix Spike | 110 | 115 | 111 | 111 |
| 380-87670-AJ-1-A MSD | Matrix Spike Duplicate | 104 | 113 | 110 | 107 |
| LCS 380-82576/23-A | Lab Control Sample | 105 | 112 | 110 | 108 |
| MBL 380-82576/21-A | Method Blank | 113 | 115 | 113 | 104 |
| MRL 380-82576/22-A | Lab Control Sample | 108 | 114 | 113 | 109 |

**Surrogate Legend**

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

# Isotope Dilution Summary

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

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

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

| | | Percent Isotope Dilution Recovery (Acceptance Limits) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Client Sample ID | HFPODA (50-200) | C6PFDA (50-200) | 13C5PHA (50-200) | C4PFHA (50-200) | C8PFOA (50-200) | C9PFNA (50-200) | 13C7PUA (50-200) | PFDoA (50-200) |
| 380-87962-5 | MOANALUA WELLS (331-223-T | 66 | 72 | 70 | 74 | 74 | 75 | 77 | 81 |
| 380-88483-B-1-B LMS | Matrix Spike | 74 | 88 | 91 | 97 | 96 | 92 | 88 | 93 |
| 380-88483-C-1-B LMSD | Matrix Spike Duplicate | 76 | 89 | 91 | 94 | 98 | 91 | 86 | 90 |
| LCS 380-83699/23-A | Lab Control Sample | 75 | 84 | 84 | 88 | 92 | 91 | 82 | 88 |
| MBL 380-83699/21-A | Method Blank | 72 | 82 | 85 | 91 | 89 | 86 | 83 | 82 |
| MRL 380-83699/22-A | Lab Control Sample | 69 | 82 | 88 | 91 | 92 | 82 | 83 | 83 |

| | | Percent Isotope Dilution Recovery (Acceptance Limits) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Client Sample ID | PFBA (50-200) | PFPeA (50-200) | C3PFBS (50-200) | C3PFHS (50-200) | C8PFOS (50-200) | 42FTS (50-200) | 62FTS (50-200) | 82FTS (50-200) |
| 380-87962-5 | MOANALUA WELLS (331-223-T | 76 | 80 | 92 | 100 | 97 | 130 | 118 | 100 |
| 380-88483-B-1-B LMS | Matrix Spike | 98 | 99 | 97 | 100 | 97 | 122 | 117 | 102 |
| 380-88483-C-1-B LMSD | Matrix Spike Duplicate | 97 | 106 | 93 | 99 | 96 | 118 | 117 | 96 |
| LCS 380-83699/23-A | Lab Control Sample | 94 | 94 | 94 | 101 | 95 | 111 | 115 | 96 |
| MBL 380-83699/21-A | Method Blank | 92 | 92 | 85 | 92 | 87 | 114 | 109 | 86 |
| MRL 380-83699/22-A | Lab Control Sample | 93 | 93 | 88 | 96 | 92 | 122 | 119 | 92 |

**Surrogate Legend**

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

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

**Lab Sample ID: MB 380-82578/21-A**
**Matrix: Water**
**Analysis Batch: 82757**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 82578**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| 2,4'-DDD | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| 2,4'-DDE | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| 2,4'-DDT | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| 2,4-Dinitrotoluene | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| 2,6-Dinitrotoluene | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| 2-Methylnaphthalene | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| 4,4'-DDD | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| 4,4'-DDE | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| 4,4'-DDT | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Acenaphthene | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Acenaphthylene | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Acetochlor | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Alachlor | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| alpha-BHC | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| alpha-Chlordane | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Anthracene | <0.020 | | 0.020 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Atrazine | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Benz(a)anthracene | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Benzo[a]pyrene | <0.020 | | 0.020 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Benzo[b]fluoranthene | <0.020 | | 0.020 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Benzo[g,h,i]perylene | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Benzo[k]fluoranthene | <0.020 | | 0.020 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| beta-BHC | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Bis(2-ethylhexyl) phthalate | <0.60 | | 0.60 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Bromacil | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Butachlor | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Butylbenzylphthalate | <0.50 | | 0.50 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Chlorobenzilate | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Chloroneb | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Chlorothalonil (Draconil, Bravo) | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Chlorpyrifos | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Chrysene | <0.020 | | 0.020 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| delta-BHC | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Di(2-ethylhexyl)adipate | <0.60 | | 0.60 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Dibenz(a,h)anthracene | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Diclorvos (DDVP) | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Dieldrin | <0.20 | | 0.20 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Diethylphthalate | <0.50 | | 0.50 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Dimethylphthalate | <0.50 | | 0.50 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Di-n-butyl phthalate | <0.99 | | 0.99 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Di-n-octyl phthalate | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Endosulfan I (Alpha) | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Endosulfan II (Beta) | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Endosulfan sulfate | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Endrin | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Endrin aldehyde | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| EPTC | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |

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

**Lab Sample ID: MB 380-82578/21-A**
**Matrix: Water**
**Analysis Batch: 82757**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 82578**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Fluorene | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| gamma-Chlordane | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Heptachlor | <0.040 | | 0.040 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Heptachlor epoxide (isomer B) | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Hexachlorobenzene | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Hexachlorocyclopentadiene | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Isophorone | <0.50 | | 0.50 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Lindane | <0.040 | | 0.040 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Malathion | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Methoxychlor | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Metolachlor | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Molinate | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Naphthalene | <0.30 | | 0.30 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Parathion | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Pendimethalin (Penoxaline) | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Phenanthrene | <0.040 | | 0.040 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Propachlor | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Pyrene | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Simazine | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Terbacil | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Terbuthylazine | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Thiobencarb | <0.20 | | 0.20 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Total Permethrin (mixed isomers) | <0.20 | | 0.20 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| trans-Nonachlor | <0.050 | | 0.050 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 1 |
| Trifluralin | <0.099 | | 0.099 | | ug/L | | 03/21/24 09:45 | 03/22/24 11:24 | 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* | *03/21/24 09:45* | *03/22/24 11:24* | *1* |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Nitro-m-xylene* | *109* | | *70 - 130* | *03/21/24 09:45* | *03/22/24 11:24* | *1* |
| *Perylene-d12* | *88* | | *70 - 130* | *03/21/24 09:45* | *03/22/24 11:24* | *1* |
| *Triphenylphosphate* | *96* | | *70 - 130* | *03/21/24 09:45* | *03/22/24 11:24* | *1* |

**Lab Sample ID: LCS 380-82578/23-A**
**Matrix: Water**
**Analysis Batch: 82757**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 82578**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | | | 1.99 | 2.00 | | ug/L | | 101 | 70 - 130 | | |
| 2,4'-DDD | | | 1.99 | 1.99 | | ug/L | | 100 | 70 - 130 | | |
| 2,4'-DDE | | | 1.99 | 2.30 | | ug/L | | 116 | 70 - 130 | | |
| 2,4'-DDT | | | 1.99 | 1.84 | | ug/L | | 93 | 70 - 130 | | |
| 2,4-Dinitrotoluene | | | 1.99 | 1.82 | | ug/L | | 92 | 70 - 130 | | |
| 2,6-Dinitrotoluene | | | 1.99 | 1.83 | | ug/L | | 92 | 70 - 130 | | |
| 2-Methylnaphthalene | | | 1.99 | 1.90 | | ug/L | | 96 | 70 - 130 | | |

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

**Lab Sample ID: LCS 380-82578/23-A**
**Matrix: Water**
**Analysis Batch: 82757**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 82578**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 1.99 | 1.97 | | ug/L | | 99 | 70 - 130 |
| 4,4'-DDE | 1.99 | 1.75 | | ug/L | | 88 | 70 - 130 |
| 4,4'-DDT | 1.99 | 1.73 | | ug/L | | 87 | 70 - 130 |
| Acenaphthene | 1.99 | 2.16 | | ug/L | | 109 | 70 - 130 |
| Acenaphthylene | 1.99 | 2.09 | | ug/L | | 105 | 70 - 130 |
| Acetochlor | 1.99 | 2.40 | | ug/L | | 121 | 70 - 130 |
| Alachlor | 1.99 | 2.47 | | ug/L | | 124 | 70 - 130 |
| alpha-BHC | 1.99 | 2.33 | | ug/L | | 117 | 70 - 130 |
| alpha-Chlordane | 1.99 | 1.71 | | ug/L | | 86 | 70 - 130 |
| Anthracene | 1.99 | 1.67 | | ug/L | | 84 | 70 - 130 |
| Atrazine | 1.99 | 2.08 | | ug/L | | 105 | 70 - 130 |
| Benz(a)anthracene | 1.99 | 1.91 | | ug/L | | 96 | 70 - 130 |
| Benzo[a]pyrene | 1.99 | 1.55 | | ug/L | | 78 | 70 - 130 |
| Benzo[b]fluoranthene | 1.99 | 1.76 | | ug/L | | 89 | 70 - 130 |
| Benzo[g,h,i]perylene | 1.99 | 2.08 | | ug/L | | 105 | 70 - 130 |
| Benzo[k]fluoranthene | 1.99 | 1.78 | | ug/L | | 90 | 70 - 130 |
| beta-BHC | 1.99 | 2.31 | | ug/L | | 117 | 70 - 130 |
| Bis(2-ethylhexyl) phthalate | 1.99 | 2.12 | | ug/L | | 107 | 70 - 130 |
| Bromacil | 1.99 | 1.76 | | ug/L | | 89 | 70 - 130 |
| Butachlor | 1.99 | 2.30 | | ug/L | | 116 | 70 - 130 |
| Butylbenzylphthalate | 1.99 | 2.26 | | ug/L | | 114 | 70 - 130 |
| Chlorobenzilate | 1.99 | 2.48 | | ug/L | | 125 | 70 - 130 |
| Chloroneb | 1.99 | 2.25 | | ug/L | | 113 | 70 - 130 |
| Chlorothalonil (Draconil, Bravo) | 1.99 | 1.92 | | ug/L | | 97 | 70 - 130 |
| Chlorpyrifos | 1.99 | 2.31 | | ug/L | | 116 | 70 - 130 |
| Chrysene | 1.99 | 1.81 | | ug/L | | 91 | 70 - 130 |
| delta-BHC | 1.99 | 2.38 | | ug/L | | 120 | 70 - 130 |
| Di(2-ethylhexyl)adipate | 1.99 | 2.39 | | ug/L | | 121 | 70 - 130 |
| Dibenz(a,h)anthracene | 1.99 | 1.87 | | ug/L | | 94 | 70 - 130 |
| Diclorvos (DDVP) | 1.99 | 2.08 | | ug/L | | 105 | 70 - 130 |
| Dieldrin | 1.99 | 2.19 | | ug/L | | 111 | 70 - 130 |
| Diethylphthalate | 1.99 | 2.21 | | ug/L | | 111 | 70 - 130 |
| Dimethylphthalate | 1.99 | 2.19 | | ug/L | | 110 | 70 - 130 |
| Di-n-butyl phthalate | 3.97 | 4.55 | | ug/L | | 114 | 70 - 130 |
| Di-n-octyl phthalate | 1.99 | 1.71 | | ug/L | | 86 | 70 - 130 |
| Endosulfan I (Alpha) | 1.99 | 2.35 | | ug/L | | 118 | 70 - 130 |
| Endosulfan II (Beta) | 1.99 | 2.42 | | ug/L | | 122 | 70 - 130 |
| Endosulfan sulfate | 1.99 | 2.07 | | ug/L | | 104 | 70 - 130 |
| Endrin | 1.99 | 2.18 | | ug/L | | 110 | 70 - 130 |
| Endrin aldehyde | 1.99 | 1.47 | | ug/L | | 74 | 60 - 130 |
| EPTC | 1.99 | 2.29 | | ug/L | | 116 | 70 - 130 |
| Fluoranthene | 1.99 | 2.03 | | ug/L | | 102 | 70 - 130 |
| Fluorene | 1.99 | 2.12 | | ug/L | | 107 | 70 - 130 |
| gamma-Chlordane | 1.99 | 1.73 | | ug/L | | 87 | 70 - 130 |
| Heptachlor | 1.99 | 1.84 | | ug/L | | 93 | 70 - 130 |
| Heptachlor epoxide (isomer B) | 1.99 | 1.72 | | ug/L | | 87 | 70 - 130 |
| Hexachlorobenzene | 1.99 | 1.97 | | ug/L | | 99 | 70 - 130 |
| Hexachlorocyclopentadiene | 1.99 | 1.83 | | ug/L | | 92 | 70 - 130 |
| Indeno[1,2,3-cd]pyrene | 1.99 | 1.86 | | ug/L | | 94 | 70 - 130 |

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

**Lab Sample ID: LCS 380-82578/23-A**
**Matrix: Water**
**Analysis Batch: 82757**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 82578**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Isophorone | 1.99 | 2.07 | | ug/L | | 104 | 70 - 130 |
| Lindane | 1.99 | 2.40 | | ug/L | | 121 | 70 - 130 |
| Malathion | 1.99 | 2.12 | | ug/L | | 107 | 70 - 130 |
| Methoxychlor | 1.99 | 1.79 | | ug/L | | 90 | 70 - 130 |
| Metolachlor | 1.99 | 2.13 | | ug/L | | 107 | 70 - 130 |
| Molinate | 1.99 | 2.16 | | ug/L | | 109 | 70 - 130 |
| Naphthalene | 1.99 | 1.95 | | ug/L | | 98 | 70 - 130 |
| Parathion | 1.99 | 2.29 | | ug/L | | 115 | 70 - 130 |
| Pendimethalin (Penoxaline) | 1.99 | 1.79 | | ug/L | | 90 | 70 - 130 |
| Phenanthrene | 1.99 | 2.13 | | ug/L | | 108 | 70 - 130 |
| Propachlor | 1.99 | 2.33 | | ug/L | | 117 | 70 - 130 |
| Pyrene | 1.99 | 2.02 | | ug/L | | 102 | 70 - 130 |
| Simazine | 1.99 | 2.16 | | ug/L | | 109 | 70 - 130 |
| Terbacil | 1.99 | 2.14 | | ug/L | | 108 | 70 - 130 |
| Terbuthylazine | 1.99 | 2.02 | | ug/L | | 102 | 70 - 130 |
| Thiobencarb | 1.99 | 2.21 | | ug/L | | 112 | 70 - 130 |
| trans-Nonachlor | 1.99 | 1.67 | | ug/L | | 84 | 70 - 130 |
| Trifluralin | 1.99 | 2.12 | | ug/L | | 107 | 70 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *2-Nitro-m-xylene* | *108* | | *70 - 130* |
| *Perylene-d12* | *89* | | *70 - 130* |
| *Triphenylphosphate* | *93* | | *70 - 130* |

**Lab Sample ID: MRL 380-82578/22-A**
**Matrix: Water**
**Analysis Batch: 82757**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 82578**

| Analyte | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0991 | 0.0728 | J | ug/L | | 73 | 50 - 150 |
| 2,4'-DDD | 0.0991 | 0.116 | | ug/L | | 117 | 50 - 150 |
| 2,4'-DDE | 0.0991 | 0.111 | | ug/L | | 112 | 50 - 150 |
| 2,4'-DDT | 0.0991 | 0.0888 | J | ug/L | | 90 | 50 - 150 |
| 2,4-Dinitrotoluene | 0.0991 | 0.0920 | J | ug/L | | 93 | 50 - 150 |
| 2,6-Dinitrotoluene | 0.0991 | 0.0895 | J | ug/L | | 90 | 50 - 150 |
| 2-Methylnaphthalene | 0.0991 | 0.0676 | J | ug/L | | 68 | 50 - 150 |
| 4,4'-DDD | 0.0991 | 0.0805 | J | ug/L | | 81 | 50 - 150 |
| 4,4'-DDE | 0.0991 | 0.0794 | J | ug/L | | 80 | 50 - 150 |
| 4,4'-DDT | 0.0991 | 0.0849 | J | ug/L | | 86 | 50 - 150 |
| Acenaphthene | 0.0991 | 0.0922 | J | ug/L | | 93 | 50 - 150 |
| Acenaphthylene | 0.0991 | 0.0783 | J | ug/L | | 79 | 50 - 150 |
| Acetochlor | 0.0496 | 0.0442 | J | ug/L | | 89 | 50 - 150 |
| Alachlor | 0.0496 | 0.0400 | J | ug/L | | 81 | 50 - 150 |
| alpha-BHC | 0.0991 | 0.113 | | ug/L | | 114 | 50 - 150 |
| alpha-Chlordane | 0.0248 | <0.029 | | ug/L | | 67 | 50 - 150 |
| Anthracene | 0.0198 | <0.019 | | ug/L | | 79 | 50 - 150 |
| Atrazine | 0.0496 | 0.0497 | J | ug/L | | 100 | 50 - 150 |
| Benz(a)anthracene | 0.0496 | 0.0291 | J | ug/L | | 59 | 50 - 150 |

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

**Lab Sample ID: MRL 380-82578/22-A**
**Matrix: Water**
**Analysis Batch: 82757**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 82578**

| Analyte | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Benzo[a]pyrene | 0.0198 | 0.0144 | J | ug/L | | 73 | 50 - 150 |
| Benzo[b]fluoranthene | 0.0198 | 0.0162 | J | ug/L | | 82 | 50 - 150 |
| Benzo[g,h,i]perylene | 0.0496 | 0.0565 | | ug/L | | 114 | 50 - 150 |
| Benzo[k]fluoranthene | 0.0198 | 0.0170 | J | ug/L | | 86 | 50 - 150 |
| beta-BHC | 0.0991 | 0.115 | | ug/L | | 116 | 50 - 150 |
| Bis(2-ethylhexyl) phthalate | 0.595 | 0.547 | J | ug/L | | 92 | 50 - 150 |
| Bromacil | 0.0991 | 0.128 | | ug/L | | 129 | 50 - 150 |
| Butachlor | 0.0496 | 0.0663 | | ug/L | | 134 | 50 - 150 |
| Butylbenzylphthalate | 0.149 | 0.151 | J | ug/L | | 102 | 50 - 150 |
| Chlorobenzilate | 0.0991 | 0.146 | | ug/L | | 147 | 50 - 150 |
| Chloroneb | 0.0991 | 0.0942 | J | ug/L | | 95 | 50 - 150 |
| Chlorothalonil (Draconil, Bravo) | 0.0991 | 0.111 | | ug/L | | 112 | 50 - 150 |
| Chlorpyrifos | 0.0496 | 0.0541 | | ug/L | | 109 | 50 - 150 |
| Chrysene | 0.0198 | 0.0150 | J | ug/L | | 76 | 50 - 150 |
| delta-BHC | 0.0991 | 0.139 | | ug/L | | 140 | 50 - 150 |
| Di(2-ethylhexyl)adipate | 0.297 | 0.337 | J | ug/L | | 113 | 50 - 150 |
| Dibenz(a,h)anthracene | 0.0496 | 0.0544 | | ug/L | | 110 | 50 - 150 |
| Diclorvos (DDVP) | 0.0496 | 0.0562 | | ug/L | | 113 | 50 - 150 |
| Dieldrin | 0.0991 | 0.107 | J | ug/L | | 108 | 50 - 150 |
| Diethylphthalate | 0.149 | 0.128 | J | ug/L | | 86 | 50 - 150 |
| Dimethylphthalate | 0.297 | 0.282 | J | ug/L | | 95 | 50 - 150 |
| Di-n-butyl phthalate | 0.297 | 0.360 | J | ug/L | | 121 | 49 - 243 |
| Di-n-octyl phthalate | 0.0991 | 0.0846 | J | ug/L | | 85 | 50 - 150 |
| Endosulfan I (Alpha) | 0.0991 | 0.113 | | ug/L | | 114 | 50 - 150 |
| Endosulfan II (Beta) | 0.0991 | 0.115 | | ug/L | | 116 | 50 - 150 |
| Endosulfan sulfate | 0.0991 | 0.112 | | ug/L | | 113 | 50 - 150 |
| Endrin | 0.0991 | 0.112 | | ug/L | | 113 | 50 - 150 |
| Endrin aldehyde | 0.0991 | <0.083 | | ug/L | | 75 | 50 - 150 |
| EPTC | 0.0991 | 0.0960 | J | ug/L | | 97 | 50 - 150 |
| Fluoranthene | 0.0496 | 0.0420 | J | ug/L | | 85 | 50 - 150 |
| Fluorene | 0.0496 | <0.050 | | ug/L | | 78 | 50 - 150 |
| gamma-Chlordane | 0.0248 | <0.021 | | ug/L | | 72 | 50 - 150 |
| Heptachlor | 0.0396 | 0.0511 | | ug/L | | 129 | 50 - 150 |
| Heptachlor epoxide (isomer B) | 0.0496 | 0.0335 | J | ug/L | | 68 | 50 - 150 |
| Hexachlorobenzene | 0.0496 | 0.0458 | J | ug/L | | 92 | 50 - 150 |
| Hexachlorocyclopentadiene | 0.0496 | 0.0382 | J | ug/L | | 77 | 50 - 150 |
| Indeno[1,2,3-cd]pyrene | 0.0496 | 0.0542 | | ug/L | | 109 | 50 - 150 |
| Isophorone | 0.0991 | 0.122 | J | ug/L | | 124 | 50 - 150 |
| Lindane | 0.0396 | 0.0451 | | ug/L | | 114 | 50 - 150 |
| Malathion | 0.0991 | 0.0928 | J | ug/L | | 94 | 50 - 150 |
| Methoxychlor | 0.0991 | 0.0860 | J | ug/L | | 87 | 50 - 150 |
| Metolachlor | 0.0496 | 0.0555 | | ug/L | | 112 | 50 - 150 |
| Molinate | 0.0991 | 0.102 | | ug/L | | 103 | 50 - 150 |
| Naphthalene | 0.0991 | 0.0885 | J | ug/L | | 89 | 50 - 150 |
| Parathion | 0.0991 | 0.129 | | ug/L | | 130 | 50 - 150 |
| Pendimethalin (Penoxaline) | 0.0991 | 0.0905 | J | ug/L | | 91 | 50 - 150 |
| Phenanthrene | 0.0198 | 0.0196 | J | ug/L | | 99 | 50 - 150 |
| Propachlor | 0.0496 | 0.0609 | | ug/L | | 123 | 50 - 150 |
| Pyrene | 0.0496 | 0.0405 | J | ug/L | | 82 | 50 - 150 |

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

**Lab Sample ID: MRL 380-82578/22-A**
**Matrix: Water**
**Analysis Batch: 82757**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 82578**

| Analyte | | | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Simazine | | | 0.0496 | 0.0627 | | ug/L | | 126 | 50 - 150 | | |
| Terbacil | | | 0.0991 | 0.120 | | ug/L | | 121 | 50 - 150 | | |
| Terbuthylazine | | | 0.0991 | 0.0878 | J | ug/L | | 89 | 50 - 150 | | |
| Thiobencarb | | | 0.0991 | 0.128 | J | ug/L | | 129 | 50 - 150 | | |
| trans-Nonachlor | | | 0.0248 | <0.026 | | ug/L | | 86 | 50 - 150 | | |
| Trifluralin | | | 0.0991 | 0.102 | | ug/L | | 103 | 50 - 150 | | |

| *Surrogate* | *MRL %Recovery* | *MRL Qualifier* | *Limits* |
|---|---|---|---|
| *2-Nitro-m-xylene* | *108* | | *70 - 130* |
| *Perylene-d12* | *88* | | *70 - 130* |
| *Triphenylphosphate* | *92* | | *70 - 130* |

**Lab Sample ID: 380-87704-AH-1-A MS**
**Matrix: Water**
**Analysis Batch: 82757**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 82578**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | <0.10 | | 1.96 | 2.02 | | ug/L | | 103 | 70 - 130 | | |
| 2,4'-DDD | <0.10 | | 1.96 | 2.04 | | ug/L | | 104 | 70 - 130 | | |
| 2,4'-DDE | <0.10 | | 1.96 | 2.28 | | ug/L | | 117 | 70 - 130 | | |
| 2,4'-DDT | <0.10 | | 1.96 | 1.99 | | ug/L | | 102 | 70 - 130 | | |
| 2,4-Dinitrotoluene | <0.10 | | 1.96 | 1.97 | | ug/L | | 100 | 70 - 130 | | |
| 2,6-Dinitrotoluene | <0.10 | | 1.96 | 1.94 | | ug/L | | 99 | 70 - 130 | | |
| 2-Methylnaphthalene | <0.10 | | 1.96 | 1.96 | | ug/L | | 100 | 70 - 130 | | |
| 4,4'-DDD | <0.10 | | 1.96 | 2.11 | | ug/L | | 108 | 70 - 130 | | |
| 4,4'-DDE | <0.10 | | 1.96 | 1.78 | | ug/L | | 91 | 70 - 130 | | |
| 4,4'-DDT | <0.10 | | 1.96 | 1.88 | | ug/L | | 96 | 70 - 130 | | |
| Acenaphthene | <0.10 | | 1.96 | 2.20 | | ug/L | | 112 | 70 - 130 | | |
| Acenaphthylene | <0.10 | | 1.96 | 2.21 | | ug/L | | 113 | 70 - 130 | | |
| Acetochlor | <0.10 | | 1.96 | 2.50 | | ug/L | | 127 | 70 - 130 | | |
| Alachlor | <0.050 | | 1.96 | 2.55 | | ug/L | | 130 | 70 - 130 | | |
| alpha-BHC | <0.10 | | 1.96 | 2.40 | | ug/L | | 123 | 70 - 130 | | |
| alpha-Chlordane | <0.050 | | 1.96 | 1.82 | | ug/L | | 93 | 70 - 130 | | |
| Anthracene | <0.020 | | 1.96 | 1.87 | | ug/L | | 95 | 70 - 130 | | |
| Atrazine | <0.050 | | 1.96 | 2.26 | | ug/L | | 115 | 70 - 130 | | |
| Benz(a)anthracene | <0.050 | | 1.96 | 2.07 | | ug/L | | 106 | 70 - 130 | | |
| Benzo[a]pyrene | <0.020 | | 1.96 | 1.74 | | ug/L | | 89 | 70 - 130 | | |
| Benzo[b]fluoranthene | <0.020 | | 1.96 | 1.88 | | ug/L | | 96 | 70 - 130 | | |
| Benzo[g,h,i]perylene | <0.050 | | 1.96 | 2.03 | | ug/L | | 104 | 70 - 130 | | |
| Benzo[k]fluoranthene | <0.020 | | 1.96 | 1.87 | | ug/L | | 96 | 70 - 130 | | |
| beta-BHC | <0.10 | | 1.96 | 2.48 | | ug/L | | 127 | 70 - 130 | | |
| Bis(2-ethylhexyl) phthalate | <0.60 | | 1.96 | 2.23 | | ug/L | | 114 | 70 - 130 | | |
| Bromacil | <0.10 | | 1.96 | 1.97 | | ug/L | | 101 | 70 - 130 | | |
| Butachlor | <0.050 | | 1.96 | 2.48 | | ug/L | | 127 | 70 - 130 | | |
| Butylbenzylphthalate | <0.50 | | 1.96 | 2.38 | | ug/L | | 122 | 70 - 130 | | |
| Chlorobenzilate | <0.10 | F1 | 1.96 | 2.71 | F1 | ug/L | | 138 | 70 - 130 | | |
| Chloroneb | <0.10 | | 1.96 | 2.28 | | ug/L | | 116 | 70 - 130 | | |
| Chlorothalonil (Draconil, Bravo) | <0.10 | | 1.96 | 2.03 | | ug/L | | 104 | 70 - 130 | | |

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

**Lab Sample ID: 380-87704-AH-1-A MS**
**Matrix: Water**
**Analysis Batch: 82757**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 82578**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Chlorpyrifos | <0.050 | | 1.96 | 2.32 | | ug/L | | 119 | 70 - 130 |
| Chrysene | <0.020 | | 1.96 | 1.91 | | ug/L | | 97 | 70 - 130 |
| delta-BHC | <0.10 | | 1.96 | 2.45 | | ug/L | | 125 | 70 - 130 |
| Di(2-ethylhexyl)adipate | <0.60 | | 1.96 | 2.49 | | ug/L | | 127 | 70 - 130 |
| Dibenz(a,h)anthracene | <0.050 | | 1.96 | 1.93 | | ug/L | | 99 | 70 - 130 |
| Diclorvos (DDVP) | <0.050 | | 1.96 | 2.21 | | ug/L | | 113 | 70 - 130 |
| Dieldrin | <0.20 | | 1.96 | 2.22 | | ug/L | | 114 | 70 - 130 |
| Diethylphthalate | <0.50 | | 1.96 | 2.30 | | ug/L | | 118 | 70 - 130 |
| Dimethylphthalate | <0.50 | | 1.96 | 2.33 | | ug/L | | 119 | 70 - 130 |
| Di-n-butyl phthalate | <1.0 | | 3.92 | 4.54 | | ug/L | | 116 | 70 - 130 |
| Di-n-octyl phthalate | <0.10 | | 1.96 | 1.89 | | ug/L | | 96 | 70 - 130 |
| Endosulfan I (Alpha) | <0.10 | | 1.96 | 2.44 | | ug/L | | 124 | 70 - 130 |
| Endosulfan II (Beta) | <0.10 | F1 | 1.96 | 2.58 | F1 | ug/L | | 132 | 70 - 130 |
| Endosulfan sulfate | <0.10 | | 1.96 | 2.19 | | ug/L | | 112 | 70 - 130 |
| Endrin | <0.10 | | 1.96 | 2.41 | | ug/L | | 123 | 70 - 130 |
| Endrin aldehyde | <0.10 | | 1.96 | 1.48 | | ug/L | | 75 | 60 - 130 |
| EPTC | <0.10 | | 1.96 | 2.36 | | ug/L | | 121 | 70 - 130 |
| Fluoranthene | <0.10 | | 1.96 | 2.13 | | ug/L | | 109 | 70 - 130 |
| Fluorene | <0.050 | | 1.96 | 2.19 | | ug/L | | 112 | 70 - 130 |
| gamma-Chlordane | <0.050 | | 1.96 | 1.81 | | ug/L | | 92 | 70 - 130 |
| Heptachlor | <0.040 | | 1.96 | 1.89 | | ug/L | | 96 | 70 - 130 |
| Heptachlor epoxide (isomer B) | <0.050 | | 1.96 | 1.78 | | ug/L | | 91 | 70 - 130 |
| Hexachlorobenzene | <0.050 | | 1.96 | 2.06 | | ug/L | | 105 | 70 - 130 |
| Hexachlorocyclopentadiene | <0.050 | | 1.96 | 1.98 | | ug/L | | 101 | 70 - 130 |
| Indeno[1,2,3-cd]pyrene | <0.050 | | 1.96 | 1.94 | | ug/L | | 99 | 70 - 130 |
| Isophorone | <0.50 | | 1.96 | 2.12 | | ug/L | | 109 | 70 - 130 |
| Lindane | <0.040 | F1 | 1.96 | 2.58 | F1 | ug/L | | 132 | 70 - 130 |
| Malathion | <0.10 | | 1.96 | 2.24 | | ug/L | | 114 | 70 - 130 |
| Methoxychlor | <0.10 | | 1.96 | 1.94 | | ug/L | | 99 | 70 - 130 |
| Metolachlor | <0.050 | | 1.96 | 2.36 | | ug/L | | 120 | 70 - 130 |
| Molinate | <0.10 | | 1.96 | 2.27 | | ug/L | | 116 | 70 - 130 |
| Naphthalene | <0.30 | | 1.96 | 2.02 | | ug/L | | 103 | 70 - 130 |
| Parathion | <0.10 | | 1.96 | 2.37 | | ug/L | | 121 | 70 - 130 |
| Pendimethalin (Penoxaline) | <0.10 | | 1.96 | 2.00 | | ug/L | | 102 | 70 - 130 |
| Phenanthrene | <0.040 | | 1.96 | 2.10 | | ug/L | | 107 | 70 - 130 |
| Propachlor | <0.050 | | 1.96 | 2.39 | | ug/L | | 122 | 70 - 130 |
| Pyrene | <0.050 | | 1.96 | 2.15 | | ug/L | | 110 | 70 - 130 |
| Simazine | <0.050 | | 1.96 | 2.37 | | ug/L | | 121 | 70 - 130 |
| Terbacil | <0.10 | | 1.96 | 2.28 | | ug/L | | 117 | 70 - 130 |
| Terbuthylazine | <0.10 | | 1.96 | 2.19 | | ug/L | | 112 | 70 - 130 |
| Thiobencarb | <0.20 | | 1.96 | 2.25 | | ug/L | | 115 | 70 - 130 |
| trans-Nonachlor | <0.050 | | 1.96 | 1.69 | | ug/L | | 86 | 70 - 130 |
| Trifluralin | <0.10 | | 1.96 | 2.16 | | ug/L | | 110 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *2-Nitro-m-xylene* | *110* | | *70 - 130* |
| *Perylene-d12* | *94* | | *70 - 130* |
| *Triphenylphosphate* | *96* | | *70 - 130* |

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

**Lab Sample ID: 380-87930-X-1-A DU**
**Matrix: Water**
**Analysis Batch: 82757**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 82578**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| 2,4'-DDD | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| 2,4'-DDE | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| 2,4'-DDT | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| 2,4-Dinitrotoluene | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| 2,6-Dinitrotoluene | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| 2-Methylnaphthalene | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| 4,4'-DDD | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| 4,4'-DDE | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| 4,4'-DDT | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Acenaphthene | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Acenaphthylene | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Acetochlor | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Alachlor | <0.049 | | | <0.049 | | ug/L | | | | NC | 20 |
| alpha-BHC | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| alpha-Chlordane | <0.049 | | | <0.049 | | ug/L | | | | NC | 20 |
| Anthracene | <0.020 | | | <0.020 | | ug/L | | | | NC | 20 |
| Atrazine | <0.049 | | | <0.049 | | ug/L | | | | NC | 20 |
| Benz(a)anthracene | <0.049 | | | <0.049 | | ug/L | | | | NC | 20 |
| Benzo[a]pyrene | <0.020 | | | <0.020 | | ug/L | | | | NC | 20 |
| Benzo[b]fluoranthene | <0.020 | | | <0.020 | | ug/L | | | | NC | 20 |
| Benzo[g,h,i]perylene | <0.049 | | | <0.049 | | ug/L | | | | NC | 20 |
| Benzo[k]fluoranthene | <0.020 | | | <0.020 | | ug/L | | | | NC | 20 |
| beta-BHC | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Bis(2-ethylhexyl) phthalate | <0.59 | | | <0.59 | | ug/L | | | | NC | 20 |
| Bromacil | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Butachlor | <0.049 | | | <0.049 | | ug/L | | | | NC | 20 |
| Butylbenzylphthalate | <0.49 | | | <0.49 | | ug/L | | | | NC | 20 |
| Chlorobenzilate | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Chloroneb | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Chlorothalonil (Draconil, Bravo) | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Chlorpyrifos | <0.049 | | | <0.049 | | ug/L | | | | NC | 20 |
| Chrysene | <0.020 | | | <0.020 | | ug/L | | | | NC | 20 |
| delta-BHC | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Di(2-ethylhexyl)adipate | <0.59 | | | <0.59 | | ug/L | | | | NC | 20 |
| Dibenz(a,h)anthracene | <0.049 | | | <0.049 | | ug/L | | | | NC | 20 |
| Diclorvos (DDVP) | <0.049 | | | <0.049 | | ug/L | | | | NC | 20 |
| Dieldrin | <0.20 | | | <0.20 | | ug/L | | | | NC | 20 |
| Diethylphthalate | <0.49 | | | <0.49 | | ug/L | | | | NC | 20 |
| Dimethylphthalate | <0.49 | | | <0.49 | | ug/L | | | | NC | 20 |
| Di-n-butyl phthalate | <0.98 | | | <0.98 | | ug/L | | | | NC | 20 |
| Di-n-octyl phthalate | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Endosulfan I (Alpha) | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Endosulfan II (Beta) | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Endosulfan sulfate | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Endrin | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| Endrin aldehyde | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |
| EPTC | <0.098 | | | <0.098 | | ug/L | | | | NC | 20 |

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

**Lab Sample ID: 380-87930-X-1-A DU**
**Matrix: Water**
**Analysis Batch: 82757**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 82578**

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

| *Surrogate* | *DU %Recovery* | *DU Qualifier* | *Limits* |
|---|---|---|---|
| *2-Nitro-m-xylene* | *108* | | *70 - 130* |
| *Perylene-d12* | *91* | | *70 - 130* |
| *Triphenylphosphate* | *95* | | *70 - 130* |

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

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

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

| Analyte | MBL Result | MBL Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <0.30 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <0.30 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <0.60 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <1.0 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <0.37 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluorodecanoic acid (PFDA) | <0.31 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |

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

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

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

| Analyte | MBL Result | MBL Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorododecanoic acid (PFDoA) | <0.54 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <0.39 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | <0.32 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluorohexanoic acid (PFHxA) | <0.46 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluorononanoic acid (PFNA) | <0.40 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | <0.43 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluorooctanoic acid (PFOA) | <0.38 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <0.42 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluorobutanoic acid (PFBA) | <0.69 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <0.38 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <0.37 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | <0.48 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <0.47 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <0.25 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <0.46 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <0.15 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluoropentanoic acid (PFPeA) | <0.38 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | <0.36 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | <0.39 | | 2.0 | | ng/L | | 03/29/24 07:51 | 04/01/24 18:22 | 1 |

| *Isotope Dilution* | *MBL %Recovery* | *MBL Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C3 HFPO-DA* | *72* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C6 PFDA* | *82* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C5 PFHxA* | *85* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C4 PFHpA* | *91* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C8 PFOA* | *89* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C9 PFNA* | *86* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C7 PFUnA* | *83* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C2 PFDoA* | *82* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C4 PFBA* | *92* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C5 PFPeA* | *92* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C3 PFBS* | *85* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C3 PFHxS* | *92* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C8 PFOS* | *87* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C2-4:2-FTS* | *114* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C2-6:2-FTS* | *109* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |
| *13C2-8:2-FTS* | *86* | | *50 - 200* | *03/29/24 07:51* | *04/01/24 18:22* | *1* |

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

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

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 60.0 | 57.8 | | ng/L | | 96 | 70 - 130 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | 60.0 | 58.9 | | ng/L | | 98 | 70 - 130 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | 60.0 | 60.9 | | ng/L | | 101 | 70 - 130 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | 60.0 | 60.1 | | ng/L | | 100 | 70 - 130 |
| Perfluorobutanesulfonic acid (PFBS) | 60.0 | 61.2 | | ng/L | | 102 | 70 - 130 |
| Perfluorodecanoic acid (PFDA) | 60.0 | 60.5 | | ng/L | | 101 | 70 - 130 |
| Perfluorododecanoic acid (PFDoA) | 60.0 | 62.1 | | ng/L | | 104 | 70 - 130 |
| Perfluoroheptanoic acid (PFHpA) | 60.0 | 60.0 | | ng/L | | 100 | 70 - 130 |
| Perfluorohexanesulfonic acid (PFHxS) | 60.0 | 59.1 | | ng/L | | 99 | 70 - 130 |
| Perfluorohexanoic acid (PFHxA) | 60.0 | 63.4 | | ng/L | | 106 | 70 - 130 |
| Perfluorononanoic acid (PFNA) | 60.0 | 59.4 | | ng/L | | 99 | 70 - 130 |
| Perfluorooctanesulfonic acid (PFOS) | 60.0 | 58.0 | | ng/L | | 97 | 70 - 130 |
| Perfluorooctanoic acid (PFOA) | 60.0 | 58.0 | | ng/L | | 97 | 70 - 130 |
| Perfluoroundecanoic acid (PFUnA) | 60.0 | 63.9 | | ng/L | | 107 | 70 - 130 |
| Perfluorobutanoic acid (PFBA) | 60.0 | 61.4 | | ng/L | | 102 | 70 - 130 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | 60.0 | 64.1 | | ng/L | | 107 | 70 - 130 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | 60.0 | 60.9 | | ng/L | | 101 | 70 - 130 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | 60.0 | 62.1 | | ng/L | | 104 | 70 - 130 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | 60.0 | 51.5 | | ng/L | | 86 | 70 - 130 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | 60.0 | 59.2 | | ng/L | | 99 | 70 - 130 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | 60.0 | 62.0 | | ng/L | | 103 | 70 - 130 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | 60.0 | 60.7 | | ng/L | | 101 | 70 - 130 |
| Perfluoropentanoic acid (PFPeA) | 60.0 | 65.5 | | ng/L | | 109 | 70 - 130 |
| Perfluoroheptanesulfonic acid (PFHpS) | 60.0 | 63.1 | | ng/L | | 105 | 70 - 130 |
| Perfluoropentanesulfonic acid (PFPeS) | 60.0 | 57.1 | | ng/L | | 95 | 70 - 130 |

| *Isotope Dilution* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *13C3 HFPO-DA* | *75* | | *50 - 200* |
| *13C6 PFDA* | *84* | | *50 - 200* |
| *13C5 PFHxA* | *84* | | *50 - 200* |
| *13C4 PFHpA* | *88* | | *50 - 200* |
| *13C8 PFOA* | *92* | | *50 - 200* |
| *13C9 PFNA* | *91* | | *50 - 200* |

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

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

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

| Isotope Dilution | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 13C7 PFUnA | 82 | | 50 - 200 |
| 13C2 PFDoA | 88 | | 50 - 200 |
| 13C4 PFBA | 94 | | 50 - 200 |
| 13C5 PFPeA | 94 | | 50 - 200 |
| 13C3 PFBS | 94 | | 50 - 200 |
| 13C3 PFHxS | 101 | | 50 - 200 |
| 13C8 PFOS | 95 | | 50 - 200 |
| 13C2-4:2-FTS | 111 | | 50 - 200 |
| 13C2-6:2-FTS | 115 | | 50 - 200 |
| 13C2-8:2-FTS | 96 | | 50 - 200 |

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

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

| Analyte | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 2.01 | 1.92 | J | ng/L | | 96 | 50 - 150 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | 2.01 | 2.05 | J | ng/L | | 102 | 50 - 150 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | 2.01 | 2.15 | J | ng/L | | 107 | 50 - 150 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | 2.01 | 2.23 | J | ng/L | | 111 | 50 - 150 |
| Perfluorobutanesulfonic acid (PFBS) | 2.01 | 2.41 | J | ng/L | | 120 | 50 - 150 |
| Perfluorodecanoic acid (PFDA) | 2.01 | 2.22 | J | ng/L | | 111 | 50 - 150 |
| Perfluorododecanoic acid (PFDoA) | 2.01 | 2.13 | J | ng/L | | 106 | 50 - 150 |
| Perfluoroheptanoic acid (PFHpA) | 2.01 | 2.23 | J | ng/L | | 111 | 50 - 150 |
| Perfluorohexanesulfonic acid (PFHxS) | 2.01 | 2.12 | J | ng/L | | 106 | 50 - 150 |
| Perfluorohexanoic acid (PFHxA) | 2.01 | 2.15 | J | ng/L | | 107 | 50 - 150 |
| Perfluorononanoic acid (PFNA) | 2.01 | 2.49 | J | ng/L | | 124 | 50 - 150 |
| Perfluorooctanesulfonic acid (PFOS) | 2.01 | 2.24 | J | ng/L | | 111 | 50 - 150 |
| Perfluorooctanoic acid (PFOA) | 2.01 | 2.29 | J | ng/L | | 114 | 50 - 150 |
| Perfluoroundecanoic acid (PFUnA) | 2.01 | 2.27 | J | ng/L | | 113 | 50 - 150 |
| Perfluorobutanoic acid (PFBA) | 2.01 | 2.18 | J | ng/L | | 108 | 50 - 150 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | 2.01 | 2.18 | J | ng/L | | 109 | 50 - 150 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | 2.01 | 2.15 | J | ng/L | | 107 | 50 - 150 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | 2.01 | 2.23 | J | ng/L | | 111 | 50 - 150 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | 2.01 | 2.06 | J | ng/L | | 103 | 50 - 150 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | 2.01 | 2.30 | J | ng/L | | 114 | 50 - 150 |

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

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

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

| Analyte | | | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluoro-3-methoxypropanoic acid (PFMPA) | | | 2.01 | 2.30 | J | ng/L | | 114 | 50 - 150 | | |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | | | 2.01 | 1.96 | J | ng/L | | 98 | 50 - 150 | | |
| Perfluoropentanoic acid (PFPeA) | | | 2.01 | 2.41 | J | ng/L | | 120 | 50 - 150 | | |
| Perfluoroheptanesulfonic acid (PFHpS) | | | 2.01 | 2.23 | J | ng/L | | 111 | 50 - 150 | | |
| Perfluoropentanesulfonic acid (PFPeS) | | | 2.01 | 2.11 | J | ng/L | | 105 | 50 - 150 | | |

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

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

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

| Analyte | Sample Result | Sample Qualifier | Spike Added | LMS Result | LMS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 2.01 | 1.85 | J | ng/L | | 92 | 50 - 150 | | |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 2.01 | 1.85 | J | ng/L | | 92 | 50 - 150 | | |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 2.01 | 2.01 | | ng/L | | 100 | 50 - 150 | | |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <2.0 | | 2.01 | 2.14 | | ng/L | | 106 | 50 - 150 | | |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 2.01 | 2.15 | | ng/L | | 107 | 50 - 150 | | |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 2.01 | 2.02 | | ng/L | | 101 | 50 - 150 | | |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 2.01 | 2.06 | | ng/L | | 103 | 50 - 150 | | |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 2.01 | 2.12 | | ng/L | | 105 | 50 - 150 | | |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | | 2.01 | 2.12 | | ng/L | | 106 | 50 - 150 | | |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 2.01 | 2.10 | | ng/L | | 105 | 50 - 150 | | |

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

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

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

| Analyte | Sample Result | Sample Qualifier | Spike Added | LMS Result | LMS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorononanoic acid (PFNA) | <2.0 | | 2.01 | 2.09 | | ng/L | | 104 | 50 - 150 |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | | 2.01 | 2.17 | | ng/L | | 108 | 50 - 150 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 2.01 | 2.23 | | ng/L | | 111 | 50 - 150 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 2.01 | 2.11 | | ng/L | | 105 | 50 - 150 |
| Perfluorobutanoic acid (PFBA) | <2.0 | | 2.01 | 1.98 | J | ng/L | | 98 | 50 - 150 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <2.0 | | 2.01 | 2.15 | | ng/L | | 107 | 50 - 150 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <2.0 | | 2.01 | 2.23 | | ng/L | | 111 | 50 - 150 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | <2.0 | | 2.01 | 2.26 | | ng/L | | 113 | 50 - 150 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <2.0 | | 2.01 | 1.80 | J | ng/L | | 89 | 50 - 150 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <2.0 | | 2.01 | 2.04 | | ng/L | | 101 | 50 - 150 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <2.0 | | 2.01 | 2.08 | | ng/L | | 104 | 50 - 150 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <2.0 | | 2.01 | 1.93 | J | ng/L | | 96 | 50 - 150 |
| Perfluoropentanoic acid (PFPeA) | <2.0 | | 2.01 | 2.26 | | ng/L | | 113 | 50 - 150 |
| Perfluoroheptanesulfonic acid (PFHpS) | <2.0 | | 2.01 | 2.16 | | ng/L | | 108 | 50 - 150 |
| Perfluoropentanesulfonic acid (PFPeS) | <2.0 | | 2.01 | 1.99 | J | ng/L | | 99 | 50 - 150 |

| *Isotope Dilution* | *LMS %Recovery* | *LMS Qualifier* | *Limits* |
|---|---|---|---|
| *13C3 HFPO-DA* | *74* | | *50 - 200* |
| *13C6 PFDA* | *88* | | *50 - 200* |
| *13C5 PFHxA* | *91* | | *50 - 200* |
| *13C4 PFHpA* | *97* | | *50 - 200* |
| *13C8 PFOA* | *96* | | *50 - 200* |
| *13C9 PFNA* | *92* | | *50 - 200* |
| *13C7 PFUnA* | *88* | | *50 - 200* |
| *13C2 PFDoA* | *93* | | *50 - 200* |
| *13C4 PFBA* | *98* | | *50 - 200* |
| *13C5 PFPeA* | *99* | | *50 - 200* |
| *13C3 PFBS* | *97* | | *50 - 200* |
| *13C3 PFHxS* | *100* | | *50 - 200* |
| *13C8 PFOS* | *97* | | *50 - 200* |
| *13C2-4:2-FTS* | *122* | | *50 - 200* |
| *13C2-6:2-FTS* | *117* | | *50 - 200* |
| *13C2-8:2-FTS* | *102* | | *50 - 200* |

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

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

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

| Analyte | Sample Result | Sample Qualifier | Spike Added | LMSD Result | LMSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 2.01 | 1.78 | J | ng/L | | 89 | 50 - 150 | 4 | 50 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 2.01 | 1.81 | J | ng/L | | 90 | 50 - 150 | 2 | 50 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 2.01 | 2.06 | | ng/L | | 103 | 50 - 150 | 3 | 50 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <2.0 | | 2.01 | 2.21 | | ng/L | | 110 | 50 - 150 | 3 | 50 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 2.01 | 2.04 | | ng/L | | 102 | 50 - 150 | 5 | 50 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 2.01 | 2.05 | | ng/L | | 102 | 50 - 150 | 1 | 50 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 2.01 | 2.10 | | ng/L | | 105 | 50 - 150 | 2 | 50 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 2.01 | 2.20 | | ng/L | | 109 | 50 - 150 | 4 | 50 |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | | 2.01 | 2.01 | | ng/L | | 100 | 50 - 150 | 5 | 50 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 2.01 | 2.04 | | ng/L | | 102 | 50 - 150 | 3 | 50 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 2.01 | 2.14 | | ng/L | | 107 | 50 - 150 | 3 | 50 |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | | 2.01 | 2.14 | | ng/L | | 107 | 50 - 150 | 2 | 50 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 2.01 | 2.09 | | ng/L | | 104 | 50 - 150 | 6 | 50 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 2.01 | 2.14 | | ng/L | | 107 | 50 - 150 | 1 | 50 |
| Perfluorobutanoic acid (PFBA) | <2.0 | | 2.01 | 2.08 | | ng/L | | 104 | 50 - 150 | 5 | 50 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <2.0 | | 2.01 | 2.18 | | ng/L | | 108 | 50 - 150 | 1 | 50 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <2.0 | | 2.01 | 2.17 | | ng/L | | 108 | 50 - 150 | 3 | 50 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | <2.0 | | 2.01 | 2.15 | | ng/L | | 107 | 50 - 150 | 5 | 50 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <2.0 | | 2.01 | 1.63 | J | ng/L | | 81 | 50 - 150 | 9 | 50 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <2.0 | | 2.01 | 1.93 | J | ng/L | | 96 | 50 - 150 | 5 | 50 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <2.0 | | 2.01 | 2.15 | | ng/L | | 107 | 50 - 150 | 3 | 50 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <2.0 | | 2.01 | 1.87 | J | ng/L | | 93 | 50 - 150 | 3 | 50 |
| Perfluoropentanoic acid (PFPeA) | <2.0 | | 2.01 | 2.17 | | ng/L | | 108 | 50 - 150 | 4 | 50 |
| Perfluoroheptanesulfonic acid (PFHpS) | <2.0 | | 2.01 | 2.12 | | ng/L | | 106 | 50 - 150 | 2 | 50 |
| Perfluoropentanesulfonic acid (PFPeS) | <2.0 | | 2.01 | 1.94 | J | ng/L | | 96 | 50 - 150 | 3 | 50 |

| *Isotope Dilution* | *LMSD %Recovery* | *LMSD Qualifier* | *Limits* |
|---|---|---|---|
| *13C3 HFPO-DA* | *76* | | *50 - 200* |
| *13C6 PFDA* | *89* | | *50 - 200* |
| *13C5 PFHxA* | *91* | | *50 - 200* |
| *13C4 PFHpA* | *94* | | *50 - 200* |
| *13C8 PFOA* | *98* | | *50 - 200* |
| *13C9 PFNA* | *91* | | *50 - 200* |

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

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

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

| Isotope Dilution | LMSD %Recovery | LMSD Qualifier | Limits |
|---|---|---|---|
| 13C7 PFUnA | 86 | | 50 - 200 |
| 13C2 PFDoA | 90 | | 50 - 200 |
| 13C4 PFBA | 97 | | 50 - 200 |
| 13C5 PFPeA | 106 | | 50 - 200 |
| 13C3 PFBS | 93 | | 50 - 200 |
| 13C3 PFHxS | 99 | | 50 - 200 |
| 13C8 PFOS | 96 | | 50 - 200 |
| 13C2-4:2-FTS | 118 | | 50 - 200 |
| 13C2-6:2-FTS | 117 | | 50 - 200 |
| 13C2-8:2-FTS | 96 | | 50 - 200 |

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

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

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

| Analyte | MBL Result | MBL Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <1.0 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | <0.43 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <0.42 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <0.58 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <0.42 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| Perfluorohexanoic acid (PFHxA) | <0.46 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| Perfluorododecanoic acid (PFDoA) | <0.54 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| Perfluorooctanoic acid (PFOA) | <0.38 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| Perfluorodecanoic acid (PFDA) | <0.31 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | <0.32 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <0.37 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <0.39 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| Perfluorononanoic acid (PFNA) | <0.40 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| Perfluorotetradecanoic acid (PFTA) | <0.54 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | <0.36 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <0.30 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <0.30 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <0.60 | | 2.0 | | ng/L | | 03/21/24 11:19 | 03/22/24 16:14 | 1 |

| Surrogate | MBL %Recovery | MBL Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| d5-NEtFOSAA | 113 | | 70 - 130 | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| 13C2 PFHxA | 115 | | 70 - 130 | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| 13C2 PFDA | 113 | | 70 - 130 | 03/21/24 11:19 | 03/22/24 16:14 | 1 |
| 13C3-GenX | 104 | | 70 - 130 | 03/21/24 11:19 | 03/22/24 16:14 | 1 |

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

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

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

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

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *d5-NEtFOSAA* | *105* | | *70 - 130* |
| *13C2 PFHxA* | *112* | | *70 - 130* |
| *13C2 PFDA* | *110* | | *70 - 130* |
| *13C3-GenX* | *108* | | *70 - 130* |

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

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

| Analyte | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | 2.01 | 2.05 | J | ng/L | | 102 | 50 - 150 |
| Perfluorooctanesulfonic acid (PFOS) | 2.01 | 2.04 | J | ng/L | | 102 | 50 - 150 |
| Perfluoroundecanoic acid (PFUnA) | 2.01 | 2.12 | J | ng/L | | 105 | 50 - 150 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 2.01 | 2.21 | J | ng/L | | 110 | 50 - 150 |

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

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

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

| Analyte | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 2.01 | 2.16 | J | ng/L | | 108 | 50 - 150 |
| Perfluorohexanoic acid (PFHxA) | 2.01 | 2.08 | J | ng/L | | 104 | 50 - 150 |
| Perfluorododecanoic acid (PFDoA) | 2.01 | 2.05 | J | ng/L | | 102 | 50 - 150 |
| Perfluorooctanoic acid (PFOA) | 2.01 | 2.25 | J | ng/L | | 112 | 50 - 150 |
| Perfluorodecanoic acid (PFDA) | 2.01 | 2.03 | J | ng/L | | 101 | 50 - 150 |
| Perfluorohexanesulfonic acid (PFHxS) | 2.01 | 2.19 | J | ng/L | | 109 | 50 - 150 |
| Perfluorobutanesulfonic acid (PFBS) | 2.01 | 2.09 | J | ng/L | | 104 | 50 - 150 |
| Perfluoroheptanoic acid (PFHpA) | 2.01 | 2.20 | J | ng/L | | 109 | 50 - 150 |
| Perfluorononanoic acid (PFNA) | 2.01 | 2.25 | J | ng/L | | 112 | 50 - 150 |
| Perfluorotetradecanoic acid (PFTA) | 2.01 | 2.12 | J | ng/L | | 106 | 50 - 150 |
| Perfluorotridecanoic acid (PFTrDA) | 2.01 | 2.16 | J | ng/L | | 108 | 50 - 150 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | 2.01 | 2.05 | J | ng/L | | 102 | 50 - 150 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 2.01 | 2.01 | J | ng/L | | 100 | 50 - 150 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | 2.01 | 2.27 | J | ng/L | | 113 | 50 - 150 |

| *Surrogate* | *MRL %Recovery* | *MRL Qualifier* | *Limits* |
|---|---|---|---|
| *d5-NEtFOSAA* | *108* | | *70 - 130* |
| *13C2 PFHxA* | *114* | | *70 - 130* |
| *13C2 PFDA* | *113* | | *70 - 130* |
| *13C3-GenX* | *109* | | *70 - 130* |

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

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

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <2.0 | | 25.2 | 24.6 | | ng/L | | 98 | 70 - 130 |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | | 25.2 | 26.7 | | ng/L | | 106 | 70 - 130 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 25.2 | 25.4 | | ng/L | | 101 | 70 - 130 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0 | | 25.2 | 26.2 | | ng/L | | 104 | 70 - 130 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <2.0 | | 25.2 | 25.7 | | ng/L | | 102 | 70 - 130 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 25.2 | 26.8 | | ng/L | | 106 | 70 - 130 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 25.2 | 24.5 | | ng/L | | 98 | 70 - 130 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 25.2 | 27.0 | | ng/L | | 108 | 70 - 130 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 25.2 | 26.6 | | ng/L | | 106 | 70 - 130 |

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

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

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

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | | 25.2 | 27.0 | | ng/L | | 107 | 70 - 130 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 25.2 | 25.4 | | ng/L | | 101 | 70 - 130 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 25.2 | 27.8 | | ng/L | | 111 | 70 - 130 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 25.2 | 26.7 | | ng/L | | 106 | 70 - 130 |
| Perfluorotetradecanoic acid (PFTA) | <2.0 | | 25.2 | 25.7 | | ng/L | | 102 | 70 - 130 |
| Perfluorotridecanoic acid (PFTrDA) | <2.0 | | 25.2 | 26.6 | | ng/L | | 106 | 70 - 130 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 25.2 | 25.4 | | ng/L | | 101 | 70 - 130 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 25.2 | 24.9 | | ng/L | | 99 | 70 - 130 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 25.2 | 27.4 | | ng/L | | 109 | 70 - 130 |

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

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

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

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <2.0 | | 25.2 | 24.5 | | ng/L | | 98 | 70 - 130 | 0 | 30 |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | | 25.2 | 26.5 | | ng/L | | 106 | 70 - 130 | 1 | 30 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 25.2 | 25.0 | | ng/L | | 99 | 70 - 130 | 1 | 30 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0 | | 25.2 | 25.7 | | ng/L | | 102 | 70 - 130 | 2 | 30 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <2.0 | | 25.2 | 26.0 | | ng/L | | 104 | 70 - 130 | 1 | 30 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 25.2 | 25.9 | | ng/L | | 103 | 70 - 130 | 3 | 30 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 25.2 | 24.7 | | ng/L | | 98 | 70 - 130 | 0 | 30 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 25.2 | 25.8 | | ng/L | | 102 | 70 - 130 | 5 | 30 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 25.2 | 25.8 | | ng/L | | 102 | 70 - 130 | 3 | 30 |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | | 25.2 | 26.5 | | ng/L | | 105 | 70 - 130 | 2 | 30 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 25.2 | 26.1 | | ng/L | | 104 | 70 - 130 | 3 | 30 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 25.2 | 27.0 | | ng/L | | 108 | 70 - 130 | 3 | 30 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 25.2 | 26.3 | | ng/L | | 104 | 70 - 130 | 2 | 30 |
| Perfluorotetradecanoic acid (PFTA) | <2.0 | | 25.2 | 24.7 | | ng/L | | 98 | 70 - 130 | 4 | 30 |

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

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

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

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorotridecanoic acid (PFTrDA) | <2.0 | | 25.2 | 25.6 | | ng/L | | 102 | 70 - 130 | 4 | 30 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 25.2 | 24.8 | | ng/L | | 98 | 70 - 130 | 2 | 30 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 25.2 | 24.8 | | ng/L | | 99 | 70 - 130 | 0 | 30 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 25.2 | 26.7 | | ng/L | | 106 | 70 - 130 | 3 | 30 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *d5-NEtFOSAA* | *104* | | *70 - 130* |
| *13C2 PFHxA* | *113* | | *70 - 130* |
| *13C2 PFDA* | *110* | | *70 - 130* |
| *13C3-GenX* | *107* | | *70 - 130* |

## GC/MS Semi VOA

### Prep Batch: 82578

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-87962-1 | MOANALUA WELLS (331-223-TP202) | Total/NA | Drinking Water | 525.2 | |
| 380-87962-2 | HALAWA WELLS UNITS 1 & 2 (331-206-TP065) | Total/NA | Drinking Water | 525.2 | |
| MB 380-82578/21-A | Method Blank | Total/NA | Water | 525.2 | |
| LCS 380-82578/23-A | Lab Control Sample | Total/NA | Water | 525.2 | |
| MRL 380-82578/22-A | Lab Control Sample | Total/NA | Water | 525.2 | |
| 380-87704-AH-1-A MS | Matrix Spike | Total/NA | Water | 525.2 | |
| 380-87930-X-1-A DU | Duplicate | Total/NA | Water | 525.2 | |

### Analysis Batch: 82757

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-87962-1 | MOANALUA WELLS (331-223-TP202) | Total/NA | Drinking Water | 525.2 | 82578 |
| 380-87962-2 | HALAWA WELLS UNITS 1 & 2 (331-206-TP065) | Total/NA | Drinking Water | 525.2 | 82578 |
| MB 380-82578/21-A | Method Blank | Total/NA | Water | 525.2 | 82578 |
| LCS 380-82578/23-A | Lab Control Sample | Total/NA | Water | 525.2 | 82578 |
| MRL 380-82578/22-A | Lab Control Sample | Total/NA | Water | 525.2 | 82578 |
| 380-87704-AH-1-A MS | Matrix Spike | Total/NA | Water | 525.2 | 82578 |
| 380-87930-X-1-A DU | Duplicate | Total/NA | Water | 525.2 | 82578 |

## LCMS

### Prep Batch: 82576

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-87962-5 | MOANALUA WELLS (331-223-TP202) | Total/NA | Water | 537.1 DW | |
| 380-87962-6 | HALAWA WELLS UNITS 1 & 2 (331-206-TP065) | Total/NA | Water | 537.1 DW | |
| 380-87962-7 | FB:MOANALUA WELLS (331-223-TP202) | Total/NA | Water | 537.1 DW | |
| 380-87962-8 | FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC | Total/NA | Water | 537.1 DW | |
| MBL 380-82576/21-A | Method Blank | Total/NA | Water | 537.1 DW | |
| LCS 380-82576/23-A | Lab Control Sample | Total/NA | Water | 537.1 DW | |
| MRL 380-82576/22-A | Lab Control Sample | Total/NA | Water | 537.1 DW | |
| 380-87670-AH-1-A MS | Matrix Spike | Total/NA | Water | 537.1 DW | |
| 380-87670-AJ-1-A MSD | Matrix Spike Duplicate | Total/NA | Water | 537.1 DW | |

### Analysis Batch: 82755

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-87962-5 | MOANALUA WELLS (331-223-TP202) | Total/NA | Water | 537.1 | 82576 |
| 380-87962-6 | HALAWA WELLS UNITS 1 & 2 (331-206-TP065) | Total/NA | Water | 537.1 | 82576 |
| 380-87962-7 | FB:MOANALUA WELLS (331-223-TP202) | Total/NA | Water | 537.1 | 82576 |
| 380-87962-8 | FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC | Total/NA | Water | 537.1 | 82576 |
| MBL 380-82576/21-A | Method Blank | Total/NA | Water | 537.1 | 82576 |
| LCS 380-82576/23-A | Lab Control Sample | Total/NA | Water | 537.1 | 82576 |
| MRL 380-82576/22-A | Lab Control Sample | Total/NA | Water | 537.1 | 82576 |
| 380-87670-AH-1-A MS | Matrix Spike | Total/NA | Water | 537.1 | 82576 |
| 380-87670-AJ-1-A MSD | Matrix Spike Duplicate | Total/NA | Water | 537.1 | 82576 |

### Prep Batch: 83699

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-87962-5 | MOANALUA WELLS (331-223-TP202) | Total/NA | Water | 533 | |
| MBL 380-83699/21-A | Method Blank | Total/NA | Water | 533 | |
| LCS 380-83699/23-A | Lab Control Sample | Total/NA | Water | 533 | |
| MRL 380-83699/22-A | Lab Control Sample | Total/NA | Water | 533 | |
| 380-88483-B-1-B LMS | Matrix Spike | Total/NA | Water | 533 | |

## LCMS (Continued)

### Prep Batch: 83699 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-88483-C-1-B LMSD | Matrix Spike Duplicate | Total/NA | Water | 533 | |

### Analysis Batch: 83929

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-87962-5 | MOANALUA WELLS (331-223-TP202) | Total/NA | Water | 533 | 83699 |
| MBL 380-83699/21-A | Method Blank | Total/NA | Water | 533 | 83699 |
| LCS 380-83699/23-A | Lab Control Sample | Total/NA | Water | 533 | 83699 |
| MRL 380-83699/22-A | Lab Control Sample | Total/NA | Water | 533 | 83699 |
| 380-88483-B-1-B LMS | Matrix Spike | Total/NA | Water | 533 | 83699 |
| 380-88483-C-1-B LMSD | Matrix Spike Duplicate | Total/NA | Water | 533 | 83699 |

# Lab Chronicle

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

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

**Lab Sample ID: 380-87962-1**
**Matrix: Drinking Water**
**Date Collected: 03/18/24 09:49**
**Date Received: 03/20/24 10:55**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 525.2 | | | 82578 | OTM3 | EA POM | 03/21/24 11:15 |
| Total/NA | Analysis | 525.2 | | 1 | 82757 | Q8LA | EA POM | 03/22/24 12:24 |

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

**Lab Sample ID: 380-87962-2**
**Matrix: Drinking Water**
**Date Collected: 03/18/24 10:22**
**Date Received: 03/20/24 10:55**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 525.2 | | | 82578 | OTM3 | EA POM | 03/21/24 11:15 |
| Total/NA | Analysis | 525.2 | | 1 | 82757 | Q8LA | EA POM | 03/22/24 12:44 |

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

**Lab Sample ID: 380-87962-5**
**Matrix: Water**
**Date Collected: 03/18/24 09:49**
**Date Received: 03/20/24 10:55**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 533 | | | 83699 | SL5Q | EA POM | 03/29/24 07:51 |
| Total/NA | Analysis | 533 | | 1 | 83929 | SZ9R | EA POM | 04/01/24 19:29 |
| Total/NA | Prep | 537.1 DW | | | 82576 | A5GB | EA POM | 03/21/24 11:19 |
| Total/NA | Analysis | 537.1 | | 1 | 82755 | R6YA | EA POM | 03/22/24 18:22 |

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

**Lab Sample ID: 380-87962-6**
**Matrix: Water**
**Date Collected: 03/18/24 10:22**
**Date Received: 03/20/24 10:55**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 537.1 DW | | | 82576 | A5GB | EA POM | 03/21/24 11:19 |
| Total/NA | Analysis | 537.1 | | 1 | 82755 | R6YA | EA POM | 03/22/24 18:31 |

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

**Lab Sample ID: 380-87962-7**
**Matrix: Water**
**Date Collected: 03/18/24 09:49**
**Date Received: 03/20/24 10:55**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 537.1 DW | | | 82576 | A5GB | EA POM | 03/21/24 11:19 |
| Total/NA | Analysis | 537.1 | | 1 | 82755 | R6YA | EA POM | 03/22/24 18:52 |

# Lab Chronicle

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)**
**Date Collected: 03/18/24 10:22**
**Date Received: 03/20/24 10:55**

**Lab Sample ID: 380-87962-8**
**Matrix: Water**

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

**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: 380-87962-1
SDG: 524.2, 533, 537.1

## Laboratory: Eurofins Eaton Analytical Pomona

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

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

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

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| 525.2 | 525.2 | Drinking Water | 1-Methylnaphthalene |
| 525.2 | 525.2 | Drinking Water | 2,4'-DDD |
| 525.2 | 525.2 | Drinking Water | 2,4'-DDE |
| 525.2 | 525.2 | Drinking Water | 2,4'-DDT |
| 525.2 | 525.2 | Drinking Water | 2,4-Dinitrotoluene |
| 525.2 | 525.2 | Drinking Water | 2,6-Dinitrotoluene |
| 525.2 | 525.2 | Drinking Water | 2-Methylnaphthalene |
| 525.2 | 525.2 | Drinking Water | 4,4'-DDD |
| 525.2 | 525.2 | Drinking Water | 4,4'-DDE |
| 525 2 | 525 2 | Drinking Water | 4,4' DDT |
| 525.2 | 525.2 | Drinking Water | Acenaphthene |
| 525.2 | 525.2 | Drinking Water | Acenaphthylene |
| 525.2 | 525.2 | Drinking Water | Acetochlor |
| 525.2 | 525.2 | Drinking Water | alpha-BHC |
| 525.2 | 525.2 | Drinking Water | alpha-Chlordane |
| 525.2 | 525.2 | Drinking Water | Anthracene |
| 525.2 | 525.2 | Drinking Water | Benz(a)anthracene |
| 525.2 | 525.2 | Drinking Water | Benzo[b]fluoranthene |
| 525.2 | 525.2 | Drinking Water | Benzo[g,h,i]perylene |
| 525.2 | 525.2 | Drinking Water | Benzo[k]fluoranthene |
| 525.2 | 525.2 | Drinking Water | beta-BHC |
| 525.2 | 525.2 | Drinking Water | Bromacil |
| 525.2 | 525.2 | Drinking Water | Butylbenzylphthalate |
| 525.2 | 525.2 | Drinking Water | Chlorobenzilate |
| 525.2 | 525.2 | Drinking Water | Chloroneb |
| 525.2 | 525.2 | Drinking Water | Chlorothalonil (Draconil, Bravo) |
| 525.2 | 525.2 | Drinking Water | Chlorpyrifos |
| 525.2 | 525.2 | Drinking Water | Chrysene |
| 525.2 | 525.2 | Drinking Water | delta-BHC |
| 525.2 | 525.2 | Drinking Water | Dibenz(a,h)anthracene |
| 525.2 | 525.2 | Drinking Water | Diclorvos (DDVP) |
| 525.2 | 525.2 | Drinking Water | Diethylphthalate |
| 525.2 | 525.2 | Drinking Water | Dimethylphthalate |
| 525.2 | 525.2 | Drinking Water | Di-n-butyl phthalate |
| 525 2 | 525 2 | Drinking Water | Di n octyl phthalate |
| 525.2 | 525.2 | Drinking Water | Endosulfan I (Alpha) |
| 525.2 | 525.2 | Drinking Water | Endosulfan II (Beta) |
| 525.2 | 525.2 | Drinking Water | Endosulfan sulfate |
| 525.2 | 525.2 | Drinking Water | Endrin aldehyde |
| 525.2 | 525.2 | Drinking Water | EPTC |
| 525.2 | 525.2 | Drinking Water | Fluoranthene |
| 525.2 | 525.2 | Drinking Water | Fluorene |
| 525.2 | 525.2 | Drinking Water | gamma-Chlordane |
| 525.2 | 525.2 | Drinking Water | Indeno[1,2,3-cd]pyrene |
| 525.2 | 525.2 | Drinking Water | Isophorone |

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

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

## Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|

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

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| 525.2 | 525.2 | Drinking Water | Malathion |
| 525.2 | 525.2 | Drinking Water | Molinate |
| 525.2 | 525.2 | Drinking Water | Naphthalene |
| 525.2 | 525.2 | Drinking Water | Parathion |
| 525.2 | 525.2 | Drinking Water | Pendimethalin (Penoxaline) |
| 525.2 | 525.2 | Drinking Water | Phenanthrene |
| 525.2 | 525.2 | Drinking Water | Pyrene |
| 525.2 | 525.2 | Drinking Water | Terbacil |
| 525.2 | 525.2 | Drinking Water | 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 |
| 533 | 533 | Water | 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) |
| 533 | 533 | Water | 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) |
| 533 | 533 | Water | 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) |
| 533 | 533 | Water | 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) |
| 533 | 533 | Water | 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) |
| 533 | 533 | Water | 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) |
| 533 | 533 | Water | Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) |
| 533 | 533 | Water | Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) |
| 533 | 533 | Water | Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) |
| 533 | 533 | Water | Perfluoro-3-methoxypropanoic acid (PFMPA) |
| 533 | 533 | Water | Perfluoro-4-methoxybutanoic acid (PFMBA) |
| 533 | 533 | Water | Perfluorobutanoic acid (PFBA) |
| 533 | 533 | Water | Perfluoroheptanesulfonic acid (PFHpS) |
| 533 | 533 | Water | Perfluoropentanesulfonic acid (PFPeS) |
| 533 | 533 | Water | Perfluoropentanoic acid (PFPeA) |
| 537.1 | 537.1 DW | Water | 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) |
| 537.1 | 537.1 DW | Water | 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) |
| 537.1 | 537.1 DW | Water | 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) |
| 537.1 | 537.1 DW | Water | Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) |

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

# Method Summary

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

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

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

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

# Sample Summary

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

Job ID: 380-87962-1
SDG: 524.2, 533, 537.1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | PWSID Number |
|---|---|---|---|---|---|
| 380-87962-1 | MOANALUA WELLS (331-223-TP202) | Drinking Water | 03/18/24 09:49 | 03/20/24 10:55 | HI0000331 |
| 380-87962-2 | HALAWA WELLS UNITS 1 & 2 (331-206-TP065) | Drinking Water | 03/18/24 10:22 | 03/20/24 10:55 | HI0000331 |
| 380-87962-5 | MOANALUA WELLS (331-223-TP202) | Water | 03/18/24 09:49 | 03/20/24 10:55 | HI0000331 |
| 380-87962-6 | HALAWA WELLS UNITS 1 & 2 (331-206-TP065) | Water | 03/18/24 10:22 | 03/20/24 10:55 | HI0000331 |
| 380-87962-7 | FB:MOANALUA WELLS (331-223-TP202) | Water | 03/18/24 09:49 | 03/20/24 10:55 | |
| 380-87962-8 | FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) | Water | 03/18/24 10:22 | 03/20/24 10:55 | |

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

# Chain of Custody Record

eurofins

| Client Information | Sampler: bailey | Lab PM: Arada Rachelle | Carrier Tracking No(s): | COC No: 380-27984-2757 2 |
|---|---|---|---|---|
| Client Contact: Dr Ron Fenstermacher | Phone: 808-748-5840 | E Mail: Rachelle.Arada@et.eurofinsus.com | State of Origin: | Page: Page 1 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 | 8015B_GRO_LL - (MOD) GRO | 8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8 C18 | 525.2_PREC - (MOD) 525plus PLUS TICs | 537.1_DW_PREC - 537.1 Full List | 533 - All Analytes | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code | | | | R | A | Q | | Y | N | | |
| MOANALUA WELLS | 18-Mar-2024 | 0949 | G | Water | | | 2 | 4 | 2 | 2 | | | | chlorinated |
| HALAWA WELLS UNITS 1&2 D1 | 18-Mar-2024 | 1022 | G | Water | | | 2 | 4 | 2 | 2 | | | | chlorinated |
| TB MOANALUA WELLS | 18-Mar-2024 | 0949 | | Water | | | | 2 | | | | | | |
| TB HALAWA WELLS UNITS 1&2 | 18-Mar-2024 | 1022 | | Water | | | | 2 | | | | | | |

380-87962 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: (1) 7756 0792 4515

Empty Kit Relinquished by | Date | Time | Method of Shipment: FED EX (2) 7756 0792 4526

| Relinquished [redacted] | Date/Time: 18March2024 1400 | Company: HBWS | Received by: E REITNER | Date/Time: 03/20/2024 10 55 | Company: EEAP |
|---|---|---|---|---|---|
| Relinquished | 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: (631A) (1) 2.0°-0.1°=1.9° (2) 3.4°-0.1°=3.3° GEL FROZEN

Ver: 01/16/2019

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

# Chain of Custody Record

eurofins

| Client Information | Sampler: Bailey | 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 | 8015B_GRO_LL - (MOD) GRO | 8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8-C18 | 525.2_PREC - (MOD) 525plus PLUS TICs | 537.1_DW_PREC - 537.1 Full List | 533 - All Analytes | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code | | | | R | A | Q | | Y | N | | |
| MOANALUA WELLS | 18-Mar-2024 | 0949 | G | Water | | | | | | | 3 | 3 | | chlorinated |
| HALAWA WELLS UNITS 1&2 D1 | 18-Mar-2024 | 1022 | G | Water | | | | | | | 3 | 3 | | chlorinated |
| FB MOANALUA WELLS | 18-Mar-2024 | 0949 | | Water | | | | | | | 1 | 1 | | |
| FB HALAWA WELLS UNITS 1&2 | 18-Mar-2024 | 1022 | | Water | | | | | | | 1 | 1 | | |

*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: ① 7756 0792 4515

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: FEDEX ② 7756 0792 4526

| Relinquished by | Date/Time | Company | Received by | Date/Time | Company |
|---|---|---|---|---|---|
| Bailey | 19 March 2024 1400 | HBWS | E REITNER | 03/20/2024 10:55 | 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: (631A) ① 20° -0.1° = 19° ② 34° -0.1° = 33° GEL-FROZEN

Ver. 01/16/2019

**Eurofins Eaton Analytical Pomona**
941 Corporate Center Drive
Pomona, CA 91768-2642
Phone: 626-386-1100

# Chain of Custody Record

eurofins | Env

Loc: 380
87962

| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Arada, Rachelle | Carrier Tracking No(s): | COC No: 380-114891.1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: Rachelle.Arada@et.eurofinsus.com | State of Origin: Hawaii | Page: Page 1 of 1 |
| Company: Eurofins Environment Testing Southwest, | | Accreditations Required (See note): State - Hawaii | | Job #: 380-87962-1 |
| Address: 2841 Dow Avenue, Suite 100, , | Due Date Requested: 4/9/2024 | | | |
| City: Tustin | TAT Requested (days): | | | |
| State, Zip: CA, 92780 | | | | |
| Phone: 714-895-5494(Tel) | PO #: | | | |
| Email: | WO #: | | | |
| Project Name: RED-HILL | Project #: 38001111 | | | |
| Site: Honolulu BWS Sites | 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 - Client ID (Lab ID) | 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) | 8015B_GRO_LL/5030C (MOD) GRO | 8015B_DRO_LL_CS/3510C_LL HNL Ranges: C10-C24/C24-C36/C8-C18 | 8015B_DAI/ (MOD) Methanol & Ethanol | 8015B_GRO_LL/5030C GRO | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | | | |
| MOANALUA WELLS (331-223-TP202) (380-87962-1) | 3/18/24 | 09:49 Hawaiian | | Water | | | X | X | X | | 6 | MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed. |
| HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-87962-2) | 3/18/24 | 10:22 Hawaiian | | Water | | | X | X | X | | 6 | MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed. |
| TB:MOANALUA WELLS (331-223-TP202) (380-87962-3) | 3/18/24 | 09:49 Hawaiian | | Water | | | | | | X | 2 | MRLs are needed. |
| TB: HALAWA WELLS UNITS 1&2 (331-206-TP065) (380-87962-4 | 3/18/24 | 10:22 Hawaiian | | Water | | | | | | X | 2 | MRLs are needed. |

380-87962 Chain of Custody

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/tests/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 said compliance to Eurofins Eaton Analytical, LLC.

| *Possible Hazard Identification* | *Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)* |
|---|---|
| *Unconfirmed* | ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months* |
| Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2 | Special Instructions/QC Requirements: |

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|---|
| 1 | [signature] | 3/21/24 1205 | EEA | [signature] | 3/21/24 12:05 | EE |
| 2 | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| 3 | 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: 1-6 / 1-6 SCR |
|---|---|---|

# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-87962-1
SDG Number: 524.2, 533, 537.1

**Login Number: 87962**
**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 | |