BergerABAM

## Summary Report

# Ridgefield Library

## Site Investigation Report
## Ridgefield, Washington

Prepared for

**Fort Vancouver Regional Library District**

Prepared by

**BergerABAM**

May 2018

# Ridgefield Library
# Ridgefield, Washington
# Site Investigation Report
# May 2018

**Submitted to**

**Fort Vancouver Regional Library District**
**1007 East Mill Plain Boulevard**
**Vancouver, Washington 98663**

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**14 May 2018**
**A18.0133.01**

**SITE INVESTIGATION REPORT**
**MAY 2018**
**Ridgefield Library**
**Ridgefield, Washington**

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**RIDGEFIELD LIBRARY – SITE INVESTIGATION REPORT**
**RIDGEFIELD, WASHINGTON**
**MAY 2018**

## 1.0 INTRODUCTION

The Fort Vancouver Regional Library District (District) is considering ownership of the Ridgefield Community Center property located at 210 North Main Avenue in Ridgefield, Washington ("the site"). The District is also considering renovation and an approximately 2,000-square-foot addition to the existing building on the site. The site is shown relative to surrounding physical features in Figure 1.

BergerABAM completed a Phase I Environmental Site Assessment (ESA) for the site in April 2018. The results of the Phase I ESA indicate that there is a volatile organic compound (VOC) groundwater plume from a former dry-cleaning site (known as Park Laundry) that extends beneath the Community Center building footprint as shown on Figures 2 and 3).

The purpose of the site investigation was to evaluate potential construction issues and costs associated with managing and handling contaminated groundwater during construction of the expansion.

## 2.0 SITE INVESTIGATION

On 18 April 2018, BergerABAM completed six direct-push soil borings (DP-1 through DP-6) to a depth of 15 feet below ground surface (bgs) at the site. Groundwater was observed during drilling at elevations at approximately 8 feet bgs. The locations of the borings are shown on Figure 4.

***Subsurface Soil Investigation Methods***

Subsurface soil sampling was accomplished using direct-push sampling methods. The sample locations were identified by measuring the distance to permanent landmarks and by handheld global positioning system technology. The soil borings were abandoned in accordance with WAC 173-160-460 following completion of soil and groundwater sampling.

The soil borings were sampled continuously from the surface to the extent explored. The borings were observed by a technical representative from BergerABAM who classified the soil samples and prepared detailed field notes.

Soil samples were collected from the direct-push borings using a hydraulically advanced 5-foot-long sampler with a disposable liner. Soil samples obtained from the borings were visually classified in general accordance with ASTM Standard D-2488. Observations of soil conditions, the potential presence of contamination, and soil field screening results for each exploration are included in the boring logs attached as Appendix A.

*Field Screening*
Field screening of soil samples was conducted for evidence of possible contamination, including visual observation, water sheen, odor, and vapor testing, using a photoionization detector. Field evidence of contamination was not observed during sampling. The field screening results were recorded on the field logs.

*Sample Handling*
The sample material was removed from the sampler and placed into laboratory-supplied containers and capped with a plastic lid. Sample containers were labeled in the field and stored in an iced cooler to maintain sample temperatures at 4 degrees Celsius prior to and during shipment to the chemical analytical laboratory. The samples were logged and tracked appropriately using chain-of-custody records.

*Groundwater Sampling*
Groundwater samples were collected from the six direct-push locations using a peristaltic pump and a temporary screen. The groundwater samples were placed into the appropriate laboratory-supplied sample containers, labeled, and stored in an iced cooler to maintain sample temperature at 4 degrees Celsius prior to and during transport to the analytical laboratory.

### Chemical Analysis

**2.1** The soil and groundwater samples were shipped to Environmental Science Corporation Laboratory in Mount Juliet, Tennessee. One soil sample (for waste disposal profiling) was submitted for analysis of gasoline-range petroleum hydrocarbons using method Northwest total petroleum hydrocarbons (NWTPH-Gx), diesel- and oil-range hydrocarbons using method NWTPH-Dx, VOCs by Environmental Protection Agency (EPA) Method 5035/8260B, polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270D-SIM, polychlorinated biphenyls (PCBs) by EPA Method 8082, Resource Conservation and Recovery Act metals by EPA Methods 6000/7000 series, and pesticides by EPA Method 8081B.

Six groundwater samples were analyzed for VOCs by EPA Method 8260B.

The chemical analysis was performed in accordance with method requirements along with customary quality control, including duplicates, blanks, matrix spikes, matrix spike duplicates, laboratory control samples, and laboratory control sample duplicates. The laboratory reports are attached as Appendix B.

## CHEMICAL ANALYTICAL RESULTS

**3.0** The chemical analytical results for analytes that were detected are compared to the Model Toxic Control Act (MTCA) Method A and/or B cleanup levels (CULs) for unrestricted land use and are summarized in Tables 1 through 6 (attached).

*Groundwater*

- The following VOCs were detected in one or more of the groundwater samples: acetone, tetrachloroethene, toluene, trichloroethene, and xylenes. With the exception of tetrachloroethene in one sample (DP-1), the VOCs were detected at concentrations less than MTCA CULs. Tetrachloroethene was detected in groundwater from DP-1 at a concentration of 5.65 micrograms per liter (µg/l). The MTCA Method A CUL for tetrachloroethene in groundwater is 5.0 µg/l.

*Soil*

- Gasoline-, diesel-, and oil-range petroleum hydrocarbons, PCBs, and pesticides were not detected above the sample quantitation limits in the soil sample.

- Tetrachloroethene was the only VOC detected in the soil sample at a concentration of 0.000458 milligrams per kilogram (mg/kg). The MTCA Method A CUL for tetrachloroethene in soil is 0.05 mg/kg.

- One or more of the following PAHs were detected in the soil sample: anthracene, benzo(ghi)perylene, phenanthrene, naphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(b+k)fluoranthene, and indeno(1,2,3-cd)pyrene at concentrations less than MTCA CULs.

- Arsenic, barium, cadmium, chromium, lead, and mercury were detected in the soil sample at concentrations less than MTCA CULs. Other metals (selenium and silver) were not detected.

## 4.0 CONCLUSIONS

The chemical analytical data indicates that shallow site soil can be disposed at a licensed facility without special handling. Due to the MTCA exceedance of tetrachloroethene in groundwater, we recommend completing excavation activities during the dry summer months. If groundwater is encountered during excavation, we recommend collecting all groundwater removed from the site and transferring it to holding tanks for characterization and disposal. If the water meets the City's disposal criteria, it can be treated on site and disposed of via the City's sanitary sewer system; or if the water does not exceed state water quality levels, it can be managed in accordance with the facility National Pollutant Discharge Elimination System construction stormwater permit requirements. If the dewatering water exceeds the City or state criteria, it can removed by a licensed commercial waste disposal facility for off-site treatment and disposal.

## 5.0 LIMITATIONS

This report has been prepared for the Fort Vancouver Regional Library District for their use in evaluating and documenting the soil and groundwater conditions at 210 North Main Avenue, Ridgefield, Washington. Environmental conditions may vary between the

locations sampled or with time. The conditions described in this evaluation represent the areas sampled at the time of the investigation.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted environmental science practices for soil and groundwater characterization at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

## 6.0 BIBLIOGRAPHY

BergerABAM. 17 April 2018. "Ridgefield Library – Phase I ESA."

# Figures


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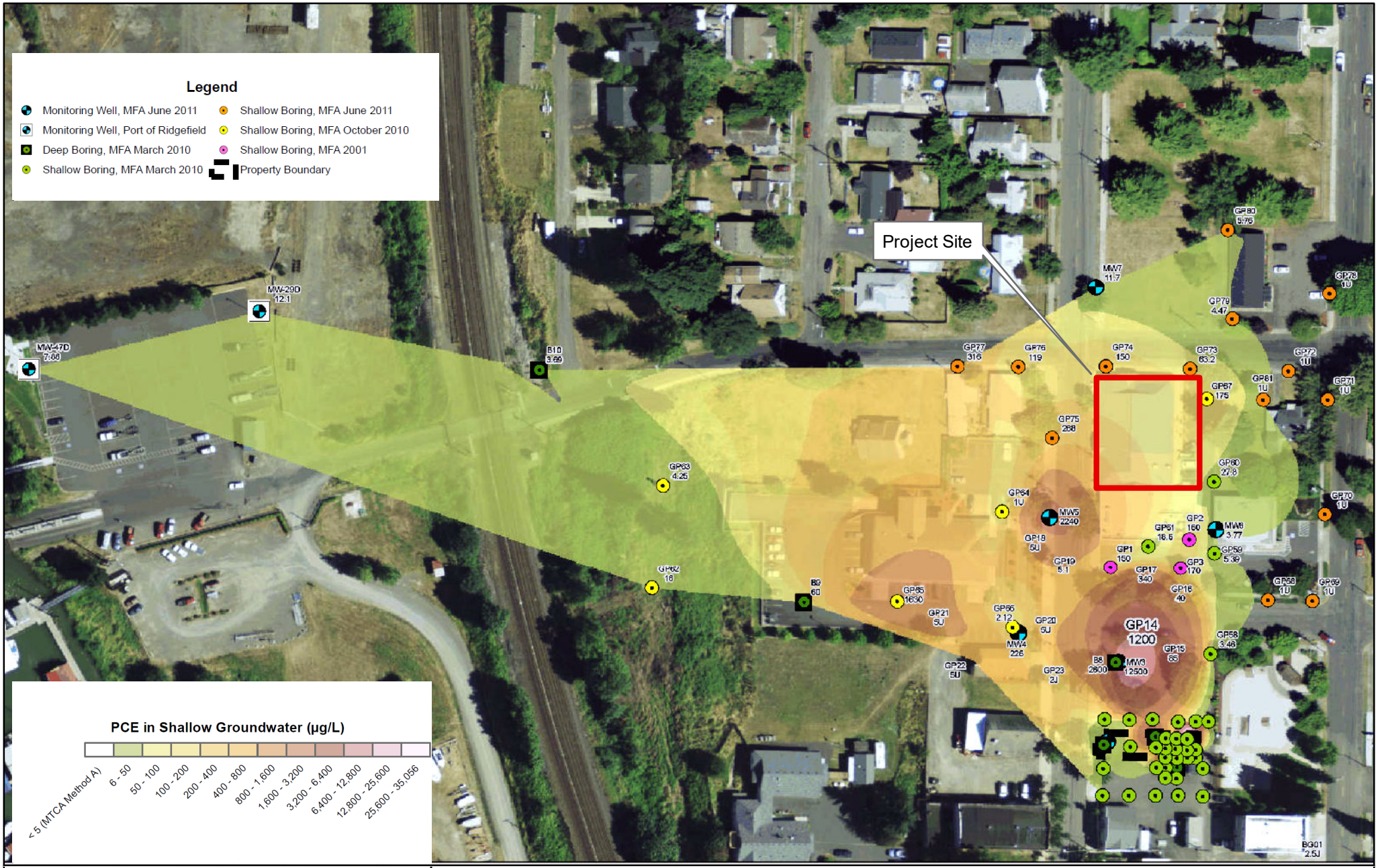
**FIGURE 1: Vicinity Map**

Fort Vancouver Regional Library
Site Investigation
Ridgefield, WA

0 125 250 500 Feet

Path: Q:\Vancouver\2018\A18.0133\01\GIS\02_MXD\Phase II ESA\Fig1_Vicinity.mxd




BergerABAM

**FIGURE 2: Tetrachloroethene Concentrations in Shallow Groundwater**

Fort Vancouver Regional Library

Site Investigation

Ridgefield, WA

Source: Maul Foster Alongi

Path: Q:\Vancouver\2018\A18.0133\01\GIS\02_MXD\Phase1ESA\Fig3.mxd

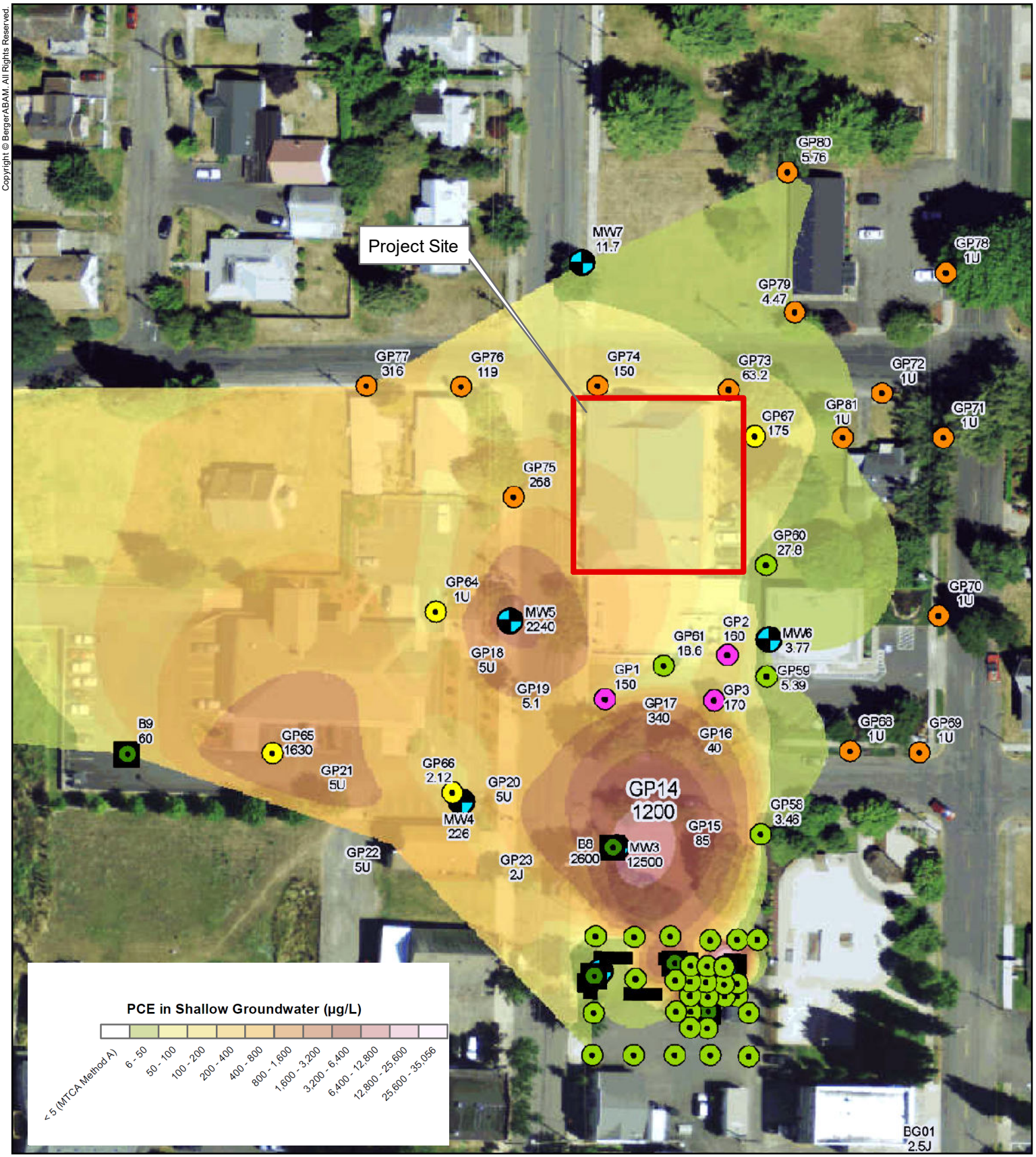



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**FIGURE 3: Tetrachlorothene Concentrations in Groundwater Detail**

Fort Vancouver Regional Library
Site Investigation
Ridgefield, WA

N

0 125 250
Feet

Path: Q:\Vancouver\2018\A18.0133\01\GIS\02_MXD\Phase I ESA\Fig3_Portrait.mxd




BergerABAM

**FIGURE 4: Sample Locations**

Fort Vancouver Regional Library
Site Investigation
Ridgefield, WA

1 inch = 60 feet
0 30 60
Feet

Path: Q:\Vancouver\2018\A18.0133\01\GIS\02_MXD\Phase II ESA\Fig1_GeoprobeLocationsActual.mxd

# Tables

# TABLE 1. VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER[1,2]

FORT VANCOUVER REGIONAL LIBRARY

RIDGEFIELD, WASHINGTON

| Sample/Boring Identification | Date | VOCs (µg/l) | | | | |
|---|---|---|---|---|---|---|
| | | Acetone | Tetrachloroethene | Toluene | Trichloroethene | Xylenes (Total) |
| DP-1 | 4/19/2018 | 2.27 J | 5.65 | 0.823 | 1.32 | 0.626 J |
| DP-2 | 4/19/2018 | 1.86 J | 2.10 | 0.813 | 0.163 J | 0.583 J |
| DP-3 | 4/19/2018 | 2.75 J | 1.77 | 0.857 | 0.167 | 0.544 J |
| DP-4 | 4/19/2018 | 2.16 J | 4.86 | 0.694 | 1.83 | 0.579 J |
| DP-5 | 4/19/2018 | 2.95 J | 3.45 | 0.743 | 0.725 | 0.324 J |
| DP-6 | 4/19/2018 | 2.10 J | 1.29 | 1.23 | <0.500 | 1.07 J |
| **MTCA Method A Cleanup Level[3]** | | NE | 5.00 | 1,000 | 5.00 | 1,000 |

Notes:

[1]Chemical analysis was performed by Environmental Science Corporation Laboratory, Mt. Juliet, Tennessee. Laboratory reports are presented in Appendix B.

[2]Volatile organic compounds (VOCs) were analyzed by EPA Method 8260B. Other VOCs were analyzed but not detected.

[3]Washington State Department of Ecology Model Toxics Control Act (MTCA) Cleanup Levels. Revised 2015.

µg/l =micrograms per liter

J = The identification of the analyte is acceptable; the reported value is an estimate.

NE = not established

Shading indicates the reported concentration exceeds the MTCA cleanup level (CUL)

<0.500 = The analyte was not detected. The associated numerical value is the sample quantitation limit.

# TABLE 2. PETROLEUM HYDROCARBONS AND PCBs IN SOIL[1]

FORT VANCOUVER REGIONAL LIBRARY

RIDGEFIELD, WASHINGTON

| Sample Identification | Date | Petroleum Hydrocarbons (mg/kg) | | | PCBs[2] (mg/kg) |
|---|---|---|---|---|---|
| | | Gasoline-Range | Diesel-Range | Motor Oil-Range | |
| Composite | 4/19/2018 | <0.128 | <5.14 | <12.9 | ND |
| **Method A Soil Cleanup Level[3]** | | 30/100[4] | 2,000 | 2,000 | 1 |

Notes:

[1]Chemical analysis for the BergerABAM samples was performed by Environmental Science Corporation Laboratory, Mt. Juliet, Tennessee. Laboratory reports are presented in Appendix B.

[2] sum of Aroclors 1016, 1242, 1248, 1254, 1260, 1221, and 1232

[3]Washington State Department of Ecology Model Toxics Control Act (MTCA) Cleanup Levels. Revised 2015.

[4]Gasoline mixture with benzene present/no detectable benzenes

mg/kg = milligrams per kilogram

-- = not analyzed

ND = not detected at concentrations greater than the mehtod detection limit.

PCBs = polychlorinated biphenyls

<0.0435 = The analyte was not detected. The associated numerical value is the sample quantitation limit.

# TABLE 3. VOLATILE ORGANIC COMPOUNDS IN SOIL[1,2]

FORT VANCOUVER REGIONAL LIBRARY

RIDGEFIELD, WASHINGTON

| Sample Identification | Date | mg/kg |
|---|---|---|
| | | Tetrachloroethene |
| DP-1 | 4/19/2018 | 0.000458 J |
| **MTCA Method A Soil Cleanup Level[3]** | | 0.05 |

Notes:

[1]Chemical analysis was performed by Environmental Science Corporation Laboratory, Mt. Juliet, Tennessee. Laboratory reports are presented in Appendix B

[2]Volatile organic compounds (VOCs) were analyzed by EPA Method 5035/8260B. The full list of VOCs were analyzed. Only detected VOCs are listed in this table.

[3]Washington State Department of Ecology Model Toxics Control Act (MTCA) Cleanup Levels. Revised 2015.

mg/kg= milligrams per kilogram

J = The identification of the analyte is acceptable; the reported value is an estimate.

# TABLE 4. PAHs IN SOIL[1]

FORT VANCOUVER REGIONAL LIBRARY

RIDGEFIELD, WASHINGTON

| Sample Identification | Composite | MTCA Method A Soil Cleanup Level[2] | MTCA Method B Soil Cleanup Level[2] |
|---|---|---|---|
| **PAHs (mg/kg)** | | | |
| Acenaphthene | <0.0000772 | NE | 4,800 |
| Acenaphthylene | <0.0000772 | NE | NE |
| Anthracene | 0.00106 J | NE | 24,000 |
| Benzo (ghi) perylene | 0.00187 J | NE | NE |
| Fluoranthene | <0.0000772 | NE | 3,200 |
| Fluorene | <0.0000772 | NE | 3,200 |
| 1-Methylnaphthalene | <0.00257 | NE | 5,600 |
| 2-Methylnaphthalene | <0.00257 | NE | 320 |
| Naphthalene | 0.00320 J | 5 | 1,600 |
| Phenanthrene | 0.000941 B J | NE | NE |
| Pyrene | <0.0000772 | NE | 2,400 |
| **cPAHs (mg/kg)** | | | |
| Benzo (a) anthracene (TEF 0.1) | 0.000993 | **MTCA Method A cPAH cleanup level for the TEQ sum** | |
| Benzo (a) pyrene (TEF 1.0) | 0.00170 | | |
| Benzo (b+k) fluoranthene (TEF 0.1) | 0.00424 | | |
| Chrysene (TEF 0.01) | <0.0000772 | | |
| Dibenz (a,h) anthracene (TEF 0.1) | <0.0000772 | | |
| Indeno (1,2,3-cd) pyrene (TEF 0.1) | 0.00184 | | |
| Total TEQ of cPAHs | 0.0024 | 0.1 | |

Notes:

[1]Chemical analysis was performed by Environmental Science Corporation Laboratory, Mt. Juliet, Tennessee. Laboratory reports are presented in Appendix B.

[2]Washington State Department of Ecology Model Toxics Control Act (MTCA) Cleanup Levels. Revised 2015.

PAHs = polycyclic aromatic hydrocarbons

cPAHs = carcinogenic polycyclic aromatic hydrocarbons.

N/A = not applicable

NE = not established

TEF = toxic equivalency factor

B = The same analyte is found in the associated blank.

J = The identification of the analyte is acceptable; the reported value is an estimate.

Toxic Equivalency Quotient or TEQ = the sum of the TEF-modified cPAH constituents concentrations

Bold indicates the analyte was detected at a concentration greater than the laboratory method reporting limits.

<0.00424 = The analyte was not detected. The associated numerical value is the sample quantitation limit.

# TABLE 5. TOTAL METALS IN SOIL[1]

FORT VANCOUVER REGIONAL LIBRARY

RIDGEFIELD, WASHINGTON

| Sample Identification | Total Metals (mg/kg) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Arsenic | Barium | Cadmium | Chromium | Lead | Mercury | Selenium | Silver |
| Composite | 2.89 | 125 | 0.157 | 12.6 | 6.73 | 0.00702 J | <2.57 | <1.29 |
| **MTCA Method A Soil Cleanup Level[2]** | 20 | NE | 2 | 19 | 250 | 2 | NE | NE |
| **MTCA Method B Soil Cleanup Level[2]** | 24 | 16,000 | 80 | 240 | NE | NE | 400 | 400 |

Notes:

[1]Chemical analysiss was performed by Environmental Science Corporation Laboratory, Mt. Juliet, Tennessee. Laboratory reports are presented in Appendix B.

[2]Washington State Department of Ecology Model Toxics Control Act (MTCA) Cleanup Levels. Revised 2015.

mg/kg = milligram per kilogram

J = The identification of the analyte is acceptable; the reported value is an estimate.

NE = not established

<0.2.57 = The analyte was not detected. The associated numerical value is the sample quantitation limit.

## TABLE 6. PESTICIDES IN SOIL[1]

FORT VANCOUVER REGIONAL LIBRARY

RIDGEFIELD, WASHINGTON

| Sample Identification | Pesticides (mg/kg) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Aldrin | Hexachlorobenzene | Chlordane | 4,4-DDD | 4,4-DDE | 4,4-DDT | Dieldrin | Endosulfan | Endrin | Heptachlor | Methoxychlor | Toxaphene | Lindane |
| Composite | <0.0257 | <0.0257 | <0.257 | <0.0257 | <0.0257 | <0.0257 | <0.0257 | <0.0257 | <0.0257 | <0.0257 | <0.0257 | <0.514 | <0.0257 |
| **MTCA Method A Soil Cleanup Level[2]** | NE | 6.4 | 40 | NE | NE | 3.00 | NE | NE | NE | NE | NE | NE | 0.001 |
| **MTCA Method B Soil Cleanup Level[2]** | 2.4 | 0.625 | 2.86 | 4.17 | 2.94 | 40 | 4.00 | 480 | 24 | 4.00 | 400 | 0.909 | 24 |

Notes:

[1]Chemical analysiss was performed by Environmental Science Corporation Laboratory, Mt. Juliet, Tennessee. Laboratory reports are presented in Appendix B.

[2]Washington State Department of Ecology Model Toxics Control Act (MTCA) Cleanup Levels. Method B non cancer values are reported. If there is not a non cancer value then the cancer value is shown. Revised 2015.

mg/kg = milligram per kilogram

J = The identification of the analyte is acceptable; the reported value is an estimate.

NE = not established

<0.0257 = The analyte was not detected. The associated numerical value is the sample quantitation limit.

# Appendix A
# Boring Logs

## SOIL CLASSIFICATION CHART

| MAJOR DIVISONS | | | SYMBOLS GRAPH | SYMBOLS LETTER | TYPICAL DESCRIPTIONS |
|---|---|---|---|---|---|
| COARSE GRAINED SOILS (MORE THAN 50% RETAINED ON NO. 200 SIEVE) | GRAVEL AND GRAVELY SOILS (MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE) | CLEAN GRAVELS (LITTLE OR NO FINES) | | GW | WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES |
| | | | | GP | POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES |
| | | GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES) | | GM | SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES |
| | | | | GC | CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES |
| | SAND AND SANDY SOILS (MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE) | CLEAN SANDS (LITTLE OR NO FINES) | | SW | WELL-GRADED SANDS, GRAVELLY SAND |
| | | | | SP | POORLY-GRADED SANDS, GRAVELLY SAND |
| | | SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES) | | SM | SILTY SANDS, SAND-SILT MIXTURES |
| | | | | SC | CLAYEY SANDS, SAND-CLAY MIXTURES |
| FINE GRAINED SOILS (MORE THAN 50% PASSING NO. 200 SIEVE) | SILTS AND CLAYS | LIQUID LIMIT LESS THAN 50 | | ML | INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY |
| | | | | CL | INORGANIC SILTS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS |
| | | | | OL | INORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY |
| | SILTS AND CLAYS | LIQUID LIMIT GREATER THAN 50 | | MH | INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS |
| | | | | CH | INORGANIC CLAYS OF HIGH PLASTICITY |
| | | | | OH | ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY |
| HIGHLY ORGANIC SOILS | | | | PT | PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS |

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications.

## ADDITIONAL MATERIAL SYMBOLS

| SYMBOLS GRAPH | SYMBOLS LETTER | TYPICAL DESCRIPTIONS |
|---|---|---|
| | CC | CEMENT CONCRETE |
| | AC | ASPHALT CONCRETE |
| | CR | CRUSHED ROCK/QUARRY SPALLS |
| | TS | TOPSOILS/FOREST DUFF/SOD |

MEASURED GROUNDWATER LEVEL IN EXPLORATION, WELL, OR PIEZOMETER

GROUNDWATER OBSERVED AT TIME OF EXPLORATION

MEASURED FREE PRODUCT IN WELL OR PIEZOMETER

MEASURED FREE PRODUCT IN WELL OR PIEZOMETER

### STRATIGRAPHIC CONTACT

DISTINCT CONTACT BETWEEN SOIL STRATA OR GEOLOGIC UNITS

GRADUAL CHANGE BETWEEN SOIL STRATA OR GEOLOGIC UNITS

APPROXIMATE LOCATION OF SOIL STRATA CHANGE WITHIN A GEOLOGIC SOIL UNIT

### SHEEN CLASSIFICATION

| | |
|---|---|
| NS | NO VISIBLE SHEEN |
| SS | SLIGHT SHEEN |
| MS | MODERATE SHEEN |
| HS | HIGH SHEEN |
| NT | NOT TESTED |

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be represented of subsurface conditions at other locations or times.

| | | |
|---|---|---|
| BergerABAM | Project: Fort Vancouver Regional Library | bgs = below ground surface |
| | | ft = feet |
| | Project Location: Ridgefield, WA | |
| | Project Number: A18.0133.01 | |

| | | |
|---|---|---|
| Date Drilled: 4/13/18 | Logged By: AK | Checked By: AR |
| Drilling Contractor:ESN Northwest | Drilling Method: Direct-Push Drilling | Sampling Methods: Geoprobe - 5 ft. acrylic sleeve |
| Auger Data: N/A | Hammer Data: N/A | Groundwater Level (ft bgs): 8 |
| Total Depth (ft bgs): 15 | Surface Elevation (ft): N/A | Datum: N/A |

| Depth (ft) | Graphic Log | Standard Penetration Test (SPT) Blows/foot | Water Level (ft) | Group Symbol | Material Description | Sheen | Headspace Vapor PID (ppm) | Notes/Sample ID |
|---|---|---|---|---|---|---|---|---|
| | | | | AC | asphalt | | | |
| 0 | | | | ML | Brown silt (dry, no odor) | NS | 0.0 | |
| | | | | | | NS | 0.2 | |
| | | | | | | NS | 0.0 | |
| | | | | | | | | |
| 5 | | | | | | | | |
| | | | | | | NS | 0.0 | |
| | | | | SM | Fine to medium sand with silt | | | Soil Sample: DP-1(7-8) |
| | | | ▽ | | becomes wet | NS | 0.2 | GW sample: DP-1 |
| | | | | | | | | |
| 10 | | | | | | | | |
| | | | | | | | | |
| | | | | | | NS | 0.3 | |
| | | | | | | | | |
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| 15 | | | | | | | | |
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LOG OF BORING # DP-1

BergerABAM

Project: Fort Vancouver Regional Library

Project Location: Ridgefield, WA

Project Number: A18.0133.01

bgs = below ground surface

ft = feet

▽ = approximate water level

| | | |
|---|---|---|
| Date Drilled: 4/13/18 | Logged By: AK | Checked By: AR |
| Drilling Contractor:ESN Northwest | Drilling Method: Direct-Push Drilling | Sampling Methods: Geoprobe - 5 ft. acrylic sleeve |
| Auger Data: N/A | Hammer Data: N/A | Groundwater Level (ft bgs): 8 |
| Total Depth (ft bgs): 15 | Surface Elevation (ft): N/A | Datum: N/A |

| Depth (ft) | Graphic Log | Standard Penetration Test (SPT) Blows/foot | Water Level (ft) | Group Symbol | Material Description | Sheen | Headspace Vapor PID (ppm) | Notes/Sample ID |
|---|---|---|---|---|---|---|---|---|
| | | | | AC | asphalt | | | |
| 0 | | | | ML | Brown silt (dry, no odor) | NS | 0.3 | |
| | | | | | | NS | 0.3 | |
| | | | | | | NS | 0.3 | |
| | | | | | | | | |
| 5 | | | | | | | | |
| | | | | | | | 0.2 | |
| | | | | SM | Fine to medium sand with silt | | | Soil Sample: DP-2 (7-8) |
| | | | ▽ | | becomes wet | NS | 0.2 | GW sample: DP-2 |
| | | | | | | | | |
| 10 | | | | | | | | |
| | | | | | | | | |
| | | | | | | NS | 0.4 | |
| | | | | | | | | |
| | | | | | | | | |
| 15 | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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LOG OF BORING # DP-2

BergerABAM

Project: Fort Vancouver Regional Library

Project Location: Ridgefield, WA

Project Number: A18.0133.01

bgs = below ground surface

ft = feet

▽ = approximate water level

| | | |
|---|---|---|
| Date Drilled: 4/13/18 | Logged By: AK | Checked By: AR |
| Drilling Contractor:ESN Northwest | Drilling Method: Direct-Push Drilling | Sampling Methods: Geoprobe - 5 ft. acrylic sleeve |
| Auger Data: N/A | Hammer Data: N/A | Groundwater Level (ft bgs): 8 |
| Total Depth (ft bgs): 15 | Surface Elevation (ft): N/A | Datum: N/A |

| Depth (ft) | Graphic Log | Standard Penetration Test (SPT) Blows/foot | Water Level (ft) | Group Symbol | Material Description | Sheen | Headspace Vapor PID (ppm) | Notes/Sample ID |
|---|---|---|---|---|---|---|---|---|
| | | | | AC | asphalt | | | |
| 0 | | | | ML | Brown silt (dry, no odor) | NS | 0.3 | |
| | | | | | | | | |
| | | | | | | | 0.2 | |
| | | | | | | | | |
| 5 | | | | | | | | |
| | | | | | | | 0.3 | |
| | | | | SM | Fine to medium sand with silt | | | Soil Sample: DP-3 (7-8) |
| | | | ▽ | | becomes wet | NS | 0.2 | GW sample: DP-3 |
| | | | | | | | | |
| 10 | | | | | | | | |
| | | | | | | | | |
| | | | | | | NS | 0.3 | |
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| 15 | | | | | | | | |
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LOG OF BORING # DP-3

BergerABAM

Project: Fort Vancouver Regional Library

Project Location: Ridgefield, WA

Project Number: A18.0133.01

bgs = below ground surface

ft = feet

▽ = approximate water level

| | | |
|---|---|---|
| Date Drilled: 4/13/18 | Logged By: AK | Checked By: AR |
| Drilling Contractor:ESN Northwest | Drilling Method: Direct-Push Drilling | Sampling Methods: Geoprobe - 5 ft. acrylic sleeve |
| Auger Data: N/A | Hammer Data: N/A | Groundwater Level (ft bgs): 8 |
| Total Depth (ft bgs): 15 | Surface Elevation (ft): N/A | Datum: N/A |

| Depth (ft) | Graphic Log | Standard Penetration Test (SPT) Blows/foot | Water Level (ft) | Group Symbol | Material Description | Sheen | Headspace Vapor PID (ppm) | Notes/Sample ID |
|---|---|---|---|---|---|---|---|---|
| | | | | AC | asphalt | | | |
| 0 | | | | ML | Brown silt (dry, no odor) | | 0.3 | |
| | | | | | | | | |
| | | | | | | NS | 0.3 | |
| | | | | | | | | |
| 5 | | | | | | | | |
| | | | | | | NS | 0.3 | |
| | | | | SM | Fine to medium sand with silt | | | Soil Sample: DP-4 (7-8) |
| | | | ▽ | | becomes wet | NS | 0.3 | GW sample: DP-4 |
| | | | | | | | | |
| 10 | | | | | | | | |
| | | | | | | | | |
| | | | | | | NS | 0.3 | |
| | | | | | | | | |
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| 15 | | | | | | | | |
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LOG OF BORING # DP-4

BergerABAM

Project: Fort Vancouver Regional Library

Project Location: Ridgefield, WA

Project Number: A18.0133.01

bgs = below ground surface

ft = feet

▽ = approximate water level

| | | |
|---|---|---|
| Date Drilled: 4/13/18 | Logged By: AK | Checked By: AR |
| Drilling Contractor:ESN Northwest | Drilling Method: Direct-Push Drilling | Sampling Methods: Geoprobe - 5 ft. acrylic sleeve |
| Auger Data: N/A | Hammer Data: N/A | Groundwater Level (ft bgs): 8 |
| Total Depth (ft bgs): 15 | Surface Elevation (ft): N/A | Datum: N/A |

| Depth (ft) | Graphic Log | Standard Penetration Test (SPT) Blows/foot | Water Level (ft) | Group Symbol | Material Description | Sheen | Headspace Vapor PID (ppm) | Notes/Sample ID |
|---|---|---|---|---|---|---|---|---|
| | | | | AC | asphalt | | | |
| 0 | | | | ML | Brown silt (dry, no odor) | NS | 0.2 | |
| | | | | | | | 0.2 | |
| | | | | | | NS | 0.1 | |
| | | | | | | | | |
| 5 | | | | | | | | |
| | | | | | | NS | 0.2 | |
| | | | | SM | Fine to medium sand with silt | | | Soil Sample: DP-5 (7-8) |
| | | | ▽ | | becomes wet | NS | 0.2 | GW sample: DP-5 |
| | | | | | | | | |
| 10 | | | | | | | | |
| | | | | | | | | |
| | | | | | | NS | 0.2 | |
| | | | | | | | | |
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| 15 | | | | | | | | |
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LOG OF BORING # DP-5

BergerABAM

Project: Fort Vancouver Regional Library

Project Location: Ridgefield, WA

Project Number: A18.0133.01

bgs = below ground surface

ft = feet

▽ = approximate water level

| | | |
|---|---|---|
| Date Drilled: 4/13/18 | Logged By: AK | Checked By: AR |
| Drilling Contractor:ESN Northwest | Drilling Method: Direct-Push Drilling | Sampling Methods: Geoprobe - 5 ft. acrylic sleeve |
| Auger Data: N/A | Hammer Data: N/A | Groundwater Level (ft bgs): 8 |
| Total Depth (ft bgs): 15 | Surface Elevation (ft): N/A | Datum: N/A |

| Depth (ft) | Graphic Log | Standard Penetration Test (SPT) Blows/foot | Water Level (ft) | Group Symbol | Material Description | Sheen | Headspace Vapor PID (ppm) | Notes/Sample ID |
|---|---|---|---|---|---|---|---|---|
| | | | | AC | asphalt | | | |
| 0 | | | | ML | Brown silt (dry, no odor) | NS | 0.2 | |
| | | | | | | | 0.3 | |
| | | | | | | | | |
| | | | | | | | | |
| 5 | | | | | | | | Soil Sample: DP-6 (5-6) |
| | | | | SM | Fine to medium sand with silt | NS | 0..3 | GW sample: DP-6 |
| | | | | | becomes wet | | | |
| | | | ▽ | | | NS | 0.3 | |
| | | | | | | | | |
| 10 | | | | | | | | |
| | | | | | | | | |
| | | | | | | NS | 0.4 | |
| | | | | | | | | |
| | | | | | | | | |
| 15 | | | | | | | | |
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LOG OF BORING # DP-6

BergerABAM

Project: Fort Vancouver Regional Library

Project Location: Ridgefield, WA

Project Number: A18.0133.01

bgs = below ground surface

ft = feet

▽ = approximate water level

# Appendix B
## Laboratory Report

# ANALYTICAL REPORT

April 27, 2018

## Berger ABAM - WA

| | |
|---|---|
| Sample Delivery Group: | L987549 |
| Samples Received: | 04/20/2018 |
| Project Number: | A18.0133.01 |
| Description: | Fort Vancouver Regional Library |

Report To:

Ms. Amber Roesler
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231

Entire Report Reviewed By:

Brian Ford
Technical Service Representative



# TABLE OF CONTENTS

## DP-1 L987549-01 GW

Collected by: Allison Kinney | Collected date/time: 04/19/18 09:20 | Received date/time: 04/20/18 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1101352 | 1 | 04/21/18 15:44 | 04/21/18 15:44 | BMB |

## DP-2 L987549-02 GW

Collected by: Allison Kinney | Collected date/time: 04/19/18 10:05 | Received date/time: 04/20/18 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1101352 | 1 | 04/21/18 16:03 | 04/21/18 16:03 | BMB |

## DP-3 L987549-03 GW

Collected by: Allison Kinney | Collected date/time: 04/19/18 10:40 | Received date/time: 04/20/18 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1101352 | 1 | 04/21/18 16:21 | 04/21/18 16:21 | BMB |

## DP-4 L987549-04 GW

Collected by: Allison Kinney | Collected date/time: 04/19/18 11:10 | Received date/time: 04/20/18 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1101352 | 1 | 04/21/18 16:40 | 04/21/18 16:40 | BMB |

## DP-5 L987549-05 GW

Collected by: Allison Kinney | Collected date/time: 04/19/18 11:40 | Received date/time: 04/20/18 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1101352 | 1 | 04/21/18 16:59 | 04/21/18 16:59 | BMB |

## DP-6 L987549-06 GW

Collected by: Allison Kinney | Collected date/time: 04/19/18 12:10 | Received date/time: 04/20/18 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1101352 | 1 | 04/21/18 17:17 | 04/21/18 17:17 | BMB |

## DP-1 (7-8) L987549-07 Solid

Collected by: Allison Kinney | Collected date/time: 04/19/18 09:20 | Received date/time: 04/20/18 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Total Solids by Method 2540 G-2011 | WG1102163 | 1 | 04/24/18 09:54 | 04/24/18 10:05 | KDW |
| Volatile Organic Compounds (GC) by Method NWTPHGX | WG1102040 | 1 | 04/19/18 09:20 | 04/26/18 00:36 | LRL |
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1101837 | 1 | 04/19/18 09:20 | 04/23/18 12:50 | BMB |

## COMPOSITE L987549-13 Solid

Collected by: Allison Kinney | Collected date/time: 04/19/18 00:00 | Received date/time: 04/20/18 08:45

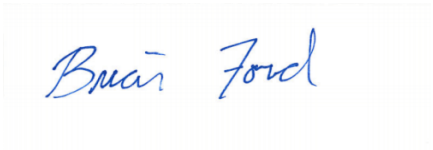
| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Total Solids by Method 2540 G-2011 | WG1102163 | 1 | 04/24/18 09:54 | 04/24/18 10:05 | KDW |
| Mercury by Method 7471B | WG1101793 | 1 | 04/22/18 21:26 | 04/23/18 16:59 | EL |
| Metals (ICP) by Method 6010C | WG1101658 | 1 | 04/23/18 08:46 | 04/26/18 10:27 | CCE |
| Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT | WG1102009 | 1 | 04/24/18 06:56 | 04/24/18 18:31 | TNG |
| Pesticides (GC) by Method 8081B | WG1101747 | 1 | 04/23/18 08:59 | 04/25/18 03:28 | VKS |

## COMPOSITE L987549-13 Solid

Collected by: Allison Kinney
Collected date/time: 04/19/18 00:00
Received date/time: 04/20/18 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Polychlorinated Biphenyls (GC) by Method 8082 A | WG1101747 | 1 | 04/23/18 08:59 | 04/24/18 12:21 | TD |
| Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM | WG1101922 | 1 | 04/23/18 13:31 | 04/24/18 17:41 | KM |

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Technical Service Representative

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result | Qualifier | MDL | RDL | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | | date / time | |
| Acetone | 2.27 | J | 1.05 | 25.0 | 1 | 04/21/2018 15:44 | WG1101352 |
| Acrylonitrile | U | J0 | 0.873 | 5.00 | 1 | 04/21/2018 15:44 | WG1101352 |
| Benzene | U | | 0.0896 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Bromobenzene | U | | 0.133 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Bromodichloromethane | U | | 0.0800 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Bromochloromethane | U | | 0.145 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Bromoform | U | | 0.186 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Bromomethane | U | | 0.157 | 2.50 | 1 | 04/21/2018 15:44 | WG1101352 |
| n-Butylbenzene | U | | 0.143 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| sec-Butylbenzene | U | | 0.134 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| tert-Butylbenzene | U | | 0.183 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Carbon disulfide | U | J0 | 0.101 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Carbon tetrachloride | U | | 0.159 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Chlorobenzene | U | | 0.140 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Chlorodibromomethane | U | | 0.128 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Chloroethane | U | | 0.141 | 2.50 | 1 | 04/21/2018 15:44 | WG1101352 |
| Chloroform | U | | 0.0860 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Chloromethane | U | | 0.153 | 1.25 | 1 | 04/21/2018 15:44 | WG1101352 |
| 2-Chlorotoluene | U | | 0.111 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 4-Chlorotoluene | U | | 0.0972 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,2-Dibromo-3-Chloropropane | U | | 0.325 | 2.50 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,2-Dibromoethane | U | | 0.193 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Dibromomethane | U | | 0.117 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,2-Dichlorobenzene | U | | 0.101 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,3-Dichlorobenzene | U | | 0.130 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,4-Dichlorobenzene | U | | 0.121 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Dichlorodifluoromethane | U | | 0.127 | 2.50 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,1-Dichloroethane | U | | 0.114 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,2-Dichloroethane | U | | 0.108 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,1-Dichloroethene | U | | 0.188 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| cis-1,2-Dichloroethene | U | | 0.0933 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| trans-1,2-Dichloroethene | U | | 0.152 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,2-Dichloropropane | U | | 0.190 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,1-Dichloropropene | U | | 0.128 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,3-Dichloropropane | U | | 0.147 | 1.00 | 1 | 04/21/2018 15:44 | WG1101352 |
| cis-1,3-Dichloropropene | U | | 0.0976 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| trans-1,3-Dichloropropene | U | | 0.222 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| trans-1,4-Dichloro-2-butene | U | | 0.257 | 5.00 | 1 | 04/21/2018 15:44 | WG1101352 |
| 2,2-Dichloropropane | U | J0 J3 | 0.0929 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Di-isopropyl ether | U | | 0.0924 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Ethylbenzene | U | | 0.158 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Hexachloro-1,3-butadiene | U | | 0.157 | 1.00 | 1 | 04/21/2018 15:44 | WG1101352 |
| 2-Hexanone | U | | 0.757 | 5.00 | 1 | 04/21/2018 15:44 | WG1101352 |
| n-Hexane | U | | 0.305 | 5.00 | 1 | 04/21/2018 15:44 | WG1101352 |
| Iodomethane | U | | 0.377 | 10.0 | 1 | 04/21/2018 15:44 | WG1101352 |
| Isopropylbenzene | U | | 0.126 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| p-Isopropyltoluene | U | | 0.138 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 2-Butanone (MEK) | U | | 1.28 | 5.00 | 1 | 04/21/2018 15:44 | WG1101352 |
| Methylene Chloride | U | | 1.07 | 2.50 | 1 | 04/21/2018 15:44 | WG1101352 |
| 4-Methyl-2-pentanone (MIBK) | U | | 0.823 | 5.00 | 1 | 04/21/2018 15:44 | WG1101352 |
| Methyl tert-butyl ether | U | | 0.102 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Naphthalene | U | | 0.174 | 2.50 | 1 | 04/21/2018 15:44 | WG1101352 |
| n-Propylbenzene | U | | 0.162 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Styrene | U | | 0.117 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,1,1,2-Tetrachloroethane | U | | 0.120 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,1,2,2-Tetrachloroethane | U | | 0.130 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result | Qualifier | MDL | RDL | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | | date / time | |
| 1,1,2-Trichlorotrifluoroethane | U | | 0.164 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Tetrachloroethene | 5.65 | | 0.199 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Toluene | 0.823 | | 0.412 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,2,3-Trichlorobenzene | U | | 0.164 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,2,4-Trichlorobenzene | U | | 0.355 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,1,1-Trichloroethane | U | | 0.0940 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,1,2-Trichloroethane | U | | 0.186 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Trichloroethene | 1.32 | | 0.153 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Trichlorofluoromethane | U | | 0.130 | 2.50 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,2,3-Trichloropropane | U | | 0.247 | 2.50 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,2,4-Trimethylbenzene | U | | 0.123 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,2,3-Trimethylbenzene | U | | 0.0739 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| 1,3,5-Trimethylbenzene | U | | 0.124 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Vinyl acetate | U | | 0.645 | 5.00 | 1 | 04/21/2018 15:44 | WG1101352 |
| Vinyl chloride | U | | 0.118 | 0.500 | 1 | 04/21/2018 15:44 | WG1101352 |
| Xylenes, Total | 0.626 | J | 0.316 | 1.50 | 1 | 04/21/2018 15:44 | WG1101352 |
| *(S) Toluene-d8* | *103* | | | *80.0-120* | | *04/21/2018 15:44* | WG1101352 |
| *(S) Dibromofluoromethane* | *101* | | | *76.0-123* | | *04/21/2018 15:44* | WG1101352 |
| *(S) 4-Bromofluorobenzene* | *91.6* | | | *80.0-120* | | *04/21/2018 15:44* | WG1101352 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result | Qualifier | MDL | RDL | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | | date / time | |
| Acetone | 1.86 | J | 1.05 | 25.0 | 1 | 04/21/2018 16:03 | WG1101352 |
| Acrylonitrile | U | J0 | 0.873 | 5.00 | 1 | 04/21/2018 16:03 | WG1101352 |
| Benzene | U | | 0.0896 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Bromobenzene | U | | 0.133 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Bromodichloromethane | U | | 0.0800 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Bromochloromethane | U | | 0.145 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Bromoform | U | | 0.186 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Bromomethane | U | | 0.157 | 2.50 | 1 | 04/21/2018 16:03 | WG1101352 |
| n-Butylbenzene | U | | 0.143 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| sec-Butylbenzene | U | | 0.134 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| tert-Butylbenzene | U | | 0.183 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Carbon disulfide | U | J0 | 0.101 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Carbon tetrachloride | U | | 0.159 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Chlorobenzene | U | | 0.140 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Chlorodibromomethane | U | | 0.128 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Chloroethane | U | | 0.141 | 2.50 | 1 | 04/21/2018 16:03 | WG1101352 |
| Chloroform | U | | 0.0860 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Chloromethane | U | | 0.153 | 1.25 | 1 | 04/21/2018 16:03 | WG1101352 |
| 2-Chlorotoluene | U | | 0.111 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 4-Chlorotoluene | U | | 0.0972 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,2-Dibromo-3-Chloropropane | U | | 0.325 | 2.50 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,2-Dibromoethane | U | | 0.193 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Dibromomethane | U | | 0.117 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,2-Dichlorobenzene | U | | 0.101 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,3-Dichlorobenzene | U | | 0.130 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,4-Dichlorobenzene | U | | 0.121 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Dichlorodifluoromethane | U | | 0.127 | 2.50 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,1-Dichloroethane | U | | 0.114 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,2-Dichloroethane | U | | 0.108 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,1-Dichloroethene | U | | 0.188 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| cis-1,2-Dichloroethene | U | | 0.0933 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| trans-1,2-Dichloroethene | U | | 0.152 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,2-Dichloropropane | U | | 0.190 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,1-Dichloropropene | U | | 0.128 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,3-Dichloropropane | U | | 0.147 | 1.00 | 1 | 04/21/2018 16:03 | WG1101352 |
| cis-1,3-Dichloropropene | U | | 0.0976 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| trans-1,3-Dichloropropene | U | | 0.222 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| trans-1,4-Dichloro-2-butene | U | | 0.257 | 5.00 | 1 | 04/21/2018 16:03 | WG1101352 |
| 2,2-Dichloropropane | U | J0 J3 | 0.0929 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Di-isopropyl ether | U | | 0.0924 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Ethylbenzene | U | | 0.158 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Hexachloro-1,3-butadiene | U | | 0.157 | 1.00 | 1 | 04/21/2018 16:03 | WG1101352 |
| 2-Hexanone | U | | 0.757 | 5.00 | 1 | 04/21/2018 16:03 | WG1101352 |
| n-Hexane | U | | 0.305 | 5.00 | 1 | 04/21/2018 16:03 | WG1101352 |
| Iodomethane | U | | 0.377 | 10.0 | 1 | 04/21/2018 16:03 | WG1101352 |
| Isopropylbenzene | U | | 0.126 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| p-Isopropyltoluene | U | | 0.138 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 2-Butanone (MEK) | U | | 1.28 | 5.00 | 1 | 04/21/2018 16:03 | WG1101352 |
| Methylene Chloride | U | | 1.07 | 2.50 | 1 | 04/21/2018 16:03 | WG1101352 |
| 4-Methyl-2-pentanone (MIBK) | U | | 0.823 | 5.00 | 1 | 04/21/2018 16:03 | WG1101352 |
| Methyl tert-butyl ether | U | | 0.102 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Naphthalene | U | | 0.174 | 2.50 | 1 | 04/21/2018 16:03 | WG1101352 |
| n-Propylbenzene | U | | 0.162 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Styrene | U | | 0.117 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,1,1,2-Tetrachloroethane | U | | 0.120 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,1,2,2-Tetrachloroethane | U | | 0.130 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result | Qualifier | MDL | RDL | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | | date / time | |
| 1,1,2-Trichlorotrifluoroethane | U | | 0.164 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Tetrachloroethene | 2.10 | | 0.199 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Toluene | 0.813 | | 0.412 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,2,3-Trichlorobenzene | U | | 0.164 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,2,4-Trichlorobenzene | U | | 0.355 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,1,1-Trichloroethane | U | | 0.0940 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,1,2-Trichloroethane | U | | 0.186 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Trichloroethene | 0.163 | J | 0.153 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Trichlorofluoromethane | U | | 0.130 | 2.50 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,2,3-Trichloropropane | U | | 0.247 | 2.50 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,2,4-Trimethylbenzene | U | | 0.123 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,2,3-Trimethylbenzene | U | | 0.0739 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| 1,3,5-Trimethylbenzene | U | | 0.124 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Vinyl acetate | U | | 0.645 | 5.00 | 1 | 04/21/2018 16:03 | WG1101352 |
| Vinyl chloride | U | | 0.118 | 0.500 | 1 | 04/21/2018 16:03 | WG1101352 |
| Xylenes, Total | 0.583 | J | 0.316 | 1.50 | 1 | 04/21/2018 16:03 | WG1101352 |
| *(S) Toluene-d8* | *102* | | | *80.0-120* | | *04/21/2018 16:03* | WG1101352 |
| *(S) Dibromofluoromethane* | *100* | | | *76.0-123* | | *04/21/2018 16:03* | WG1101352 |
| *(S) 4-Bromofluorobenzene* | *91.8* | | | *80.0-120* | | *04/21/2018 16:03* | WG1101352 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result | Qualifier | MDL | RDL | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | | date / time | |
| Acetone | 2.75 | J | 1.05 | 25.0 | 1 | 04/21/2018 16:21 | WG1101352 |
| Acrylonitrile | U | J0 | 0.873 | 5.00 | 1 | 04/21/2018 16:21 | WG1101352 |
| Benzene | U | | 0.0896 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Bromobenzene | U | | 0.133 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Bromodichloromethane | U | | 0.0800 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Bromochloromethane | U | | 0.145 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Bromoform | U | | 0.186 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Bromomethane | U | | 0.157 | 2.50 | 1 | 04/21/2018 16:21 | WG1101352 |
| n-Butylbenzene | U | | 0.143 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| sec-Butylbenzene | U | | 0.134 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| tert-Butylbenzene | U | | 0.183 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Carbon disulfide | U | J0 | 0.101 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Carbon tetrachloride | U | | 0.159 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Chlorobenzene | U | | 0.140 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Chlorodibromomethane | U | | 0.128 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Chloroethane | U | | 0.141 | 2.50 | 1 | 04/21/2018 16:21 | WG1101352 |
| Chloroform | U | | 0.0860 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Chloromethane | U | | 0.153 | 1.25 | 1 | 04/21/2018 16:21 | WG1101352 |
| 2-Chlorotoluene | U | | 0.111 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 4-Chlorotoluene | U | | 0.0972 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,2-Dibromo-3-Chloropropane | U | | 0.325 | 2.50 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,2-Dibromoethane | U | | 0.193 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Dibromomethane | U | | 0.117 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,2-Dichlorobenzene | U | | 0.101 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,3-Dichlorobenzene | U | | 0.130 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,4-Dichlorobenzene | U | | 0.121 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Dichlorodifluoromethane | U | | 0.127 | 2.50 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,1-Dichloroethane | U | | 0.114 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,2-Dichloroethane | U | | 0.108 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,1-Dichloroethene | U | | 0.188 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| cis-1,2-Dichloroethene | U | | 0.0933 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| trans-1,2-Dichloroethene | U | | 0.152 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,2-Dichloropropane | U | | 0.190 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,1-Dichloropropene | U | | 0.128 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,3-Dichloropropane | U | | 0.147 | 1.00 | 1 | 04/21/2018 16:21 | WG1101352 |
| cis-1,3-Dichloropropene | U | | 0.0976 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| trans-1,3-Dichloropropene | U | | 0.222 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| trans-1,4-Dichloro-2-butene | U | | 0.257 | 5.00 | 1 | 04/21/2018 16:21 | WG1101352 |
| 2,2-Dichloropropane | U | J0 J3 | 0.0929 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Di-isopropyl ether | U | | 0.0924 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Ethylbenzene | U | | 0.158 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Hexachloro-1,3-butadiene | U | | 0.157 | 1.00 | 1 | 04/21/2018 16:21 | WG1101352 |
| 2-Hexanone | U | | 0.757 | 5.00 | 1 | 04/21/2018 16:21 | WG1101352 |
| n-Hexane | U | | 0.305 | 5.00 | 1 | 04/21/2018 16:21 | WG1101352 |
| Iodomethane | U | | 0.377 | 10.0 | 1 | 04/21/2018 16:21 | WG1101352 |
| Isopropylbenzene | U | | 0.126 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| p-Isopropyltoluene | U | | 0.138 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 2-Butanone (MEK) | U | | 1.28 | 5.00 | 1 | 04/21/2018 16:21 | WG1101352 |
| Methylene Chloride | U | | 1.07 | 2.50 | 1 | 04/21/2018 16:21 | WG1101352 |
| 4-Methyl-2-pentanone (MIBK) | U | | 0.823 | 5.00 | 1 | 04/21/2018 16:21 | WG1101352 |
| Methyl tert-butyl ether | U | | 0.102 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Naphthalene | U | | 0.174 | 2.50 | 1 | 04/21/2018 16:21 | WG1101352 |
| n-Propylbenzene | U | | 0.162 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Styrene | U | | 0.117 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,1,1,2-Tetrachloroethane | U | | 0.120 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,1,2,2-Tetrachloroethane | U | | 0.130 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result | Qualifier | MDL | RDL | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | | date / time | |
| 1,1,2-Trichlorotrifluoroethane | U | | 0.164 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Tetrachloroethene | 1.77 | | 0.199 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Toluene | 0.857 | | 0.412 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,2,3-Trichlorobenzene | U | | 0.164 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,2,4-Trichlorobenzene | U | | 0.355 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,1,1-Trichloroethane | U | | 0.0940 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,1,2-Trichloroethane | U | | 0.186 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Trichloroethene | 0.167 | J | 0.153 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Trichlorofluoromethane | U | | 0.130 | 2.50 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,2,3-Trichloropropane | U | | 0.247 | 2.50 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,2,4-Trimethylbenzene | U | | 0.123 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,2,3-Trimethylbenzene | U | | 0.0739 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| 1,3,5-Trimethylbenzene | U | | 0.124 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Vinyl acetate | U | | 0.645 | 5.00 | 1 | 04/21/2018 16:21 | WG1101352 |
| Vinyl chloride | U | | 0.118 | 0.500 | 1 | 04/21/2018 16:21 | WG1101352 |
| Xylenes, Total | 0.544 | J | 0.316 | 1.50 | 1 | 04/21/2018 16:21 | WG1101352 |
| *(S) Toluene-d8* | *102* | | | *80.0-120* | | *04/21/2018 16:21* | WG1101352 |
| *(S) Dibromofluoromethane* | *101* | | | *76.0-123* | | *04/21/2018 16:21* | WG1101352 |
| *(S) 4-Bromofluorobenzene* | *93.6* | | | *80.0-120* | | *04/21/2018 16:21* | WG1101352 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result | Qualifier | MDL | RDL | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | | date / time | |
| Acetone | 2.16 | J | 1.05 | 25.0 | 1 | 04/21/2018 16:40 | WG1101352 |
| Acrylonitrile | U | J0 | 0.873 | 5.00 | 1 | 04/21/2018 16:40 | WG1101352 |
| Benzene | U | | 0.0896 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Bromobenzene | U | | 0.133 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Bromodichloromethane | U | | 0.0800 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Bromochloromethane | U | | 0.145 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Bromoform | U | | 0.186 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Bromomethane | U | | 0.157 | 2.50 | 1 | 04/21/2018 16:40 | WG1101352 |
| n-Butylbenzene | U | | 0.143 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| sec-Butylbenzene | U | | 0.134 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| tert-Butylbenzene | U | | 0.183 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Carbon disulfide | U | J0 | 0.101 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Carbon tetrachloride | U | | 0.159 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Chlorobenzene | U | | 0.140 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Chlorodibromomethane | U | | 0.128 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Chloroethane | U | | 0.141 | 2.50 | 1 | 04/21/2018 16:40 | WG1101352 |
| Chloroform | U | | 0.0860 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Chloromethane | U | | 0.153 | 1.25 | 1 | 04/21/2018 16:40 | WG1101352 |
| 2-Chlorotoluene | U | | 0.111 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 4-Chlorotoluene | U | | 0.0972 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,2-Dibromo-3-Chloropropane | U | | 0.325 | 2.50 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,2-Dibromoethane | U | | 0.193 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Dibromomethane | U | | 0.117 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,2-Dichlorobenzene | U | | 0.101 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,3-Dichlorobenzene | U | | 0.130 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,4-Dichlorobenzene | U | | 0.121 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Dichlorodifluoromethane | U | | 0.127 | 2.50 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,1-Dichloroethane | U | | 0.114 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,2-Dichloroethane | U | | 0.108 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,1-Dichloroethene | U | | 0.188 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| cis-1,2-Dichloroethene | U | | 0.0933 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| trans-1,2-Dichloroethene | U | | 0.152 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,2-Dichloropropane | U | | 0.190 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,1-Dichloropropene | U | | 0.128 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,3-Dichloropropane | U | | 0.147 | 1.00 | 1 | 04/21/2018 16:40 | WG1101352 |
| cis-1,3-Dichloropropene | U | | 0.0976 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| trans-1,3-Dichloropropene | U | | 0.222 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| trans-1,4-Dichloro-2-butene | U | | 0.257 | 5.00 | 1 | 04/21/2018 16:40 | WG1101352 |
| 2,2-Dichloropropane | U | J0 J3 | 0.0929 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Di-isopropyl ether | U | | 0.0924 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Ethylbenzene | U | | 0.158 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Hexachloro-1,3-butadiene | U | | 0.157 | 1.00 | 1 | 04/21/2018 16:40 | WG1101352 |
| 2-Hexanone | U | | 0.757 | 5.00 | 1 | 04/21/2018 16:40 | WG1101352 |
| n-Hexane | U | | 0.305 | 5.00 | 1 | 04/21/2018 16:40 | WG1101352 |
| Iodomethane | U | | 0.377 | 10.0 | 1 | 04/21/2018 16:40 | WG1101352 |
| Isopropylbenzene | U | | 0.126 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| p-Isopropyltoluene | U | | 0.138 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 2-Butanone (MEK) | U | | 1.28 | 5.00 | 1 | 04/21/2018 16:40 | WG1101352 |
| Methylene Chloride | U | | 1.07 | 2.50 | 1 | 04/21/2018 16:40 | WG1101352 |
| 4-Methyl-2-pentanone (MIBK) | U | | 0.823 | 5.00 | 1 | 04/21/2018 16:40 | WG1101352 |
| Methyl tert-butyl ether | U | | 0.102 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Naphthalene | U | | 0.174 | 2.50 | 1 | 04/21/2018 16:40 | WG1101352 |
| n-Propylbenzene | U | | 0.162 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Styrene | U | | 0.117 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,1,1,2-Tetrachloroethane | U | | 0.120 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,1,2,2-Tetrachloroethane | U | | 0.130 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result | Qualifier | MDL | RDL | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | | date / time | |
| 1,1,2-Trichlorotrifluoroethane | U | | 0.164 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Tetrachloroethene | 4.86 | | 0.199 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Toluene | 0.694 | | 0.412 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,2,3-Trichlorobenzene | U | | 0.164 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,2,4-Trichlorobenzene | U | | 0.355 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,1,1-Trichloroethane | U | | 0.0940 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,1,2-Trichloroethane | U | | 0.186 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Trichloroethene | 1.83 | | 0.153 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Trichlorofluoromethane | U | | 0.130 | 2.50 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,2,3-Trichloropropane | U | | 0.247 | 2.50 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,2,4-Trimethylbenzene | U | | 0.123 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,2,3-Trimethylbenzene | U | | 0.0739 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| 1,3,5-Trimethylbenzene | U | | 0.124 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Vinyl acetate | U | | 0.645 | 5.00 | 1 | 04/21/2018 16:40 | WG1101352 |
| Vinyl chloride | U | | 0.118 | 0.500 | 1 | 04/21/2018 16:40 | WG1101352 |
| Xylenes, Total | 0.579 | J | 0.316 | 1.50 | 1 | 04/21/2018 16:40 | WG1101352 |
| *(S) Toluene-d8* | *102* | | | *80.0-120* | | *04/21/2018 16:40* | WG1101352 |
| *(S) Dibromofluoromethane* | *101* | | | *76.0-123* | | *04/21/2018 16:40* | WG1101352 |
| *(S) 4-Bromofluorobenzene* | *91.7* | | | *80.0-120* | | *04/21/2018 16:40* | WG1101352 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result | Qualifier | MDL | RDL | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | | date / time | |
| Acetone | 2.95 | J | 1.05 | 25.0 | 1 | 04/21/2018 16:59 | WG1101352 |
| Acrylonitrile | U | J0 | 0.873 | 5.00 | 1 | 04/21/2018 16:59 | WG1101352 |
| Benzene | U | | 0.0896 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Bromobenzene | U | | 0.133 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Bromodichloromethane | U | | 0.0800 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Bromochloromethane | U | | 0.145 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Bromoform | U | | 0.186 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Bromomethane | U | | 0.157 | 2.50 | 1 | 04/21/2018 16:59 | WG1101352 |
| n-Butylbenzene | U | | 0.143 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| sec-Butylbenzene | U | | 0.134 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| tert-Butylbenzene | U | | 0.183 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Carbon disulfide | U | J0 | 0.101 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Carbon tetrachloride | U | | 0.159 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Chlorobenzene | U | | 0.140 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Chlorodibromomethane | U | | 0.128 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Chloroethane | U | | 0.141 | 2.50 | 1 | 04/21/2018 16:59 | WG1101352 |
| Chloroform | U | | 0.0860 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Chloromethane | U | | 0.153 | 1.25 | 1 | 04/21/2018 16:59 | WG1101352 |
| 2-Chlorotoluene | U | | 0.111 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 4-Chlorotoluene | U | | 0.0972 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,2-Dibromo-3-Chloropropane | U | | 0.325 | 2.50 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,2-Dibromoethane | U | | 0.193 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Dibromomethane | U | | 0.117 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,2-Dichlorobenzene | U | | 0.101 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,3-Dichlorobenzene | U | | 0.130 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,4-Dichlorobenzene | U | | 0.121 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Dichlorodifluoromethane | U | | 0.127 | 2.50 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,1-Dichloroethane | U | | 0.114 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,2-Dichloroethane | U | | 0.108 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,1-Dichloroethene | U | | 0.188 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| cis-1,2-Dichloroethene | U | | 0.0933 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| trans-1,2-Dichloroethene | U | | 0.152 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,2-Dichloropropane | U | | 0.190 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,1-Dichloropropene | U | | 0.128 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,3-Dichloropropane | U | | 0.147 | 1.00 | 1 | 04/21/2018 16:59 | WG1101352 |
| cis-1,3-Dichloropropene | U | | 0.0976 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| trans-1,3-Dichloropropene | U | | 0.222 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| trans-1,4-Dichloro-2-butene | U | | 0.257 | 5.00 | 1 | 04/21/2018 16:59 | WG1101352 |
| 2,2-Dichloropropane | U | J0 J3 | 0.0929 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Di-isopropyl ether | U | | 0.0924 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Ethylbenzene | U | | 0.158 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Hexachloro-1,3-butadiene | U | | 0.157 | 1.00 | 1 | 04/21/2018 16:59 | WG1101352 |
| 2-Hexanone | U | | 0.757 | 5.00 | 1 | 04/21/2018 16:59 | WG1101352 |
| n-Hexane | U | | 0.305 | 5.00 | 1 | 04/21/2018 16:59 | WG1101352 |
| Iodomethane | U | | 0.377 | 10.0 | 1 | 04/21/2018 16:59 | WG1101352 |
| Isopropylbenzene | U | | 0.126 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| p-Isopropyltoluene | U | | 0.138 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 2-Butanone (MEK) | U | | 1.28 | 5.00 | 1 | 04/21/2018 16:59 | WG1101352 |
| Methylene Chloride | U | | 1.07 | 2.50 | 1 | 04/21/2018 16:59 | WG1101352 |
| 4-Methyl-2-pentanone (MIBK) | U | | 0.823 | 5.00 | 1 | 04/21/2018 16:59 | WG1101352 |
| Methyl tert-butyl ether | U | | 0.102 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Naphthalene | U | | 0.174 | 2.50 | 1 | 04/21/2018 16:59 | WG1101352 |
| n-Propylbenzene | U | | 0.162 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Styrene | U | | 0.117 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,1,1,2-Tetrachloroethane | U | | 0.120 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,1,2,2-Tetrachloroethane | U | | 0.130 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result | Qualifier | MDL | RDL | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | | date / time | |
| 1,1,2-Trichlorotrifluoroethane | U | | 0.164 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Tetrachloroethene | 3.45 | | 0.199 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Toluene | 0.743 | | 0.412 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,2,3-Trichlorobenzene | U | | 0.164 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,2,4-Trichlorobenzene | U | | 0.355 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,1,1-Trichloroethane | U | | 0.0940 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,1,2-Trichloroethane | U | | 0.186 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Trichloroethene | 0.725 | | 0.153 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Trichlorofluoromethane | U | | 0.130 | 2.50 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,2,3-Trichloropropane | U | | 0.247 | 2.50 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,2,4-Trimethylbenzene | U | | 0.123 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,2,3-Trimethylbenzene | U | | 0.0739 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| 1,3,5-Trimethylbenzene | U | | 0.124 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Vinyl acetate | U | | 0.645 | 5.00 | 1 | 04/21/2018 16:59 | WG1101352 |
| Vinyl chloride | U | | 0.118 | 0.500 | 1 | 04/21/2018 16:59 | WG1101352 |
| Xylenes, Total | 0.324 | J | 0.316 | 1.50 | 1 | 04/21/2018 16:59 | WG1101352 |
| *(S) Toluene-d8* | *102* | | | *80.0-120* | | *04/21/2018 16:59* | WG1101352 |
| *(S) Dibromofluoromethane* | *102* | | | *76.0-123* | | *04/21/2018 16:59* | WG1101352 |
| *(S) 4-Bromofluorobenzene* | *91.8* | | | *80.0-120* | | *04/21/2018 16:59* | WG1101352 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result | Qualifier | MDL | RDL | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | | date / time | |
| Acetone | 2.10 | J | 1.05 | 25.0 | 1 | 04/21/2018 17:17 | WG1101352 |
| Acrylonitrile | U | J0 | 0.873 | 5.00 | 1 | 04/21/2018 17:17 | WG1101352 |
| Benzene | U | | 0.0896 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Bromobenzene | U | | 0.133 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Bromodichloromethane | U | | 0.0800 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Bromochloromethane | U | | 0.145 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Bromoform | U | | 0.186 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Bromomethane | U | | 0.157 | 2.50 | 1 | 04/21/2018 17:17 | WG1101352 |
| n-Butylbenzene | U | | 0.143 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| sec-Butylbenzene | U | | 0.134 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| tert-Butylbenzene | U | | 0.183 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Carbon disulfide | U | J0 | 0.101 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Carbon tetrachloride | U | | 0.159 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Chlorobenzene | U | | 0.140 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Chlorodibromomethane | U | | 0.128 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Chloroethane | U | | 0.141 | 2.50 | 1 | 04/21/2018 17:17 | WG1101352 |
| Chloroform | U | | 0.0860 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Chloromethane | U | | 0.153 | 1.25 | 1 | 04/21/2018 17:17 | WG1101352 |
| 2-Chlorotoluene | U | | 0.111 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 4-Chlorotoluene | U | | 0.0972 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,2-Dibromo-3-Chloropropane | U | | 0.325 | 2.50 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,2-Dibromoethane | U | | 0.193 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Dibromomethane | U | | 0.117 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,2-Dichlorobenzene | U | | 0.101 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,3-Dichlorobenzene | U | | 0.130 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,4-Dichlorobenzene | U | | 0.121 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Dichlorodifluoromethane | U | | 0.127 | 2.50 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,1-Dichloroethane | U | | 0.114 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,2-Dichloroethane | U | | 0.108 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,1-Dichloroethene | U | | 0.188 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| cis-1,2-Dichloroethene | U | | 0.0933 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| trans-1,2-Dichloroethene | U | | 0.152 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,2-Dichloropropane | U | | 0.190 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,1-Dichloropropene | U | | 0.128 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,3-Dichloropropane | U | | 0.147 | 1.00 | 1 | 04/21/2018 17:17 | WG1101352 |
| cis-1,3-Dichloropropene | U | | 0.0976 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| trans-1,3-Dichloropropene | U | | 0.222 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| trans-1,4-Dichloro-2-butene | U | | 0.257 | 5.00 | 1 | 04/21/2018 17:17 | WG1101352 |
| 2,2-Dichloropropane | U | J0 J3 | 0.0929 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Di-isopropyl ether | U | | 0.0924 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Ethylbenzene | U | | 0.158 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Hexachloro-1,3-butadiene | U | | 0.157 | 1.00 | 1 | 04/21/2018 17:17 | WG1101352 |
| 2-Hexanone | U | | 0.757 | 5.00 | 1 | 04/21/2018 17:17 | WG1101352 |
| n-Hexane | U | | 0.305 | 5.00 | 1 | 04/21/2018 17:17 | WG1101352 |
| Iodomethane | U | | 0.377 | 10.0 | 1 | 04/21/2018 17:17 | WG1101352 |
| Isopropylbenzene | U | | 0.126 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| p-Isopropyltoluene | U | | 0.138 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 2-Butanone (MEK) | U | | 1.28 | 5.00 | 1 | 04/21/2018 17:17 | WG1101352 |
| Methylene Chloride | U | | 1.07 | 2.50 | 1 | 04/21/2018 17:17 | WG1101352 |
| 4-Methyl-2-pentanone (MIBK) | U | | 0.823 | 5.00 | 1 | 04/21/2018 17:17 | WG1101352 |
| Methyl tert-butyl ether | U | | 0.102 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Naphthalene | U | | 0.174 | 2.50 | 1 | 04/21/2018 17:17 | WG1101352 |
| n-Propylbenzene | U | | 0.162 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Styrene | U | | 0.117 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,1,1,2-Tetrachloroethane | U | | 0.120 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,1,2,2-Tetrachloroethane | U | | 0.130 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result | Qualifier | MDL | RDL | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | | date / time | |
| 1,1,2-Trichlorotrifluoroethane | U | | 0.164 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Tetrachloroethene | 1.29 | | 0.199 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Toluene | 1.23 | | 0.412 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,2,3-Trichlorobenzene | U | | 0.164 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,2,4-Trichlorobenzene | U | | 0.355 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,1,1-Trichloroethane | U | | 0.0940 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,1,2-Trichloroethane | U | | 0.186 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Trichloroethene | U | | 0.153 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Trichlorofluoromethane | U | | 0.130 | 2.50 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,2,3-Trichloropropane | U | | 0.247 | 2.50 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,2,4-Trimethylbenzene | U | | 0.123 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,2,3-Trimethylbenzene | U | | 0.0739 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| 1,3,5-Trimethylbenzene | U | | 0.124 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Vinyl acetate | U | | 0.645 | 5.00 | 1 | 04/21/2018 17:17 | WG1101352 |
| Vinyl chloride | U | | 0.118 | 0.500 | 1 | 04/21/2018 17:17 | WG1101352 |
| Xylenes, Total | 1.07 | J | 0.316 | 1.50 | 1 | 04/21/2018 17:17 | WG1101352 |
| *(S) Toluene-d8* | *103* | | | *80.0-120* | | *04/21/2018 17:17* | WG1101352 |
| *(S) Dibromofluoromethane* | *102* | | | *76.0-123* | | *04/21/2018 17:17* | WG1101352 |
| *(S) 4-Bromofluorobenzene* | *89.7* | | | *80.0-120* | | *04/21/2018 17:17* | WG1101352 |

## Total Solids by Method 2540 G-2011

| Analyte | Result | Qualifier | Dilution | Analysis | Batch |
|---|---|---|---|---|---|
| | % | | | date / time | |
| Total Solids | 78.0 | | 1 | 04/24/2018 10:05 | WG1102163 |

## Volatile Organic Compounds (GC) by Method NWTPHGX

| Analyte | Result (dry) | Qualifier | MDL (dry) | RDL (dry) | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | mg/kg | | mg/kg | mg/kg | | date / time | |
| Gasoline Range Organics-NWTPH | U | | 0.0435 | 0.128 | 1 | 04/26/2018 00:36 | WG1102040 |
| *(S) a,a,a-Trifluorotoluene(FID)* | *102* | | | *77.0-120* | | *04/26/2018 00:36* | WG1102040 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result (dry) | Qualifier | MDL (dry) | RDL (dry) | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | mg/kg | | mg/kg | mg/kg | | date / time | |
| Acetone | U | J0 | 0.0128 | 0.0641 | 1 | 04/23/2018 12:50 | WG1101837 |
| Acrylonitrile | U | | 0.00230 | 0.0128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Benzene | U | | 0.000346 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Bromobenzene | U | | 0.000364 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Bromodichloromethane | U | | 0.000326 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Bromoform | U | | 0.000544 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Bromomethane | U | J0 | 0.00172 | 0.00641 | 1 | 04/23/2018 12:50 | WG1101837 |
| n-Butylbenzene | U | | 0.000331 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| sec-Butylbenzene | U | | 0.000258 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| tert-Butylbenzene | U | | 0.000264 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Carbon tetrachloride | U | | 0.000421 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Chlorobenzene | U | | 0.000272 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Chlorodibromomethane | U | | 0.000478 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Chloroethane | U | J0 | 0.00121 | 0.00641 | 1 | 04/23/2018 12:50 | WG1101837 |
| Chloroform | U | | 0.000294 | 0.00641 | 1 | 04/23/2018 12:50 | WG1101837 |
| Chloromethane | U | J0 | 0.000481 | 0.00321 | 1 | 04/23/2018 12:50 | WG1101837 |
| 2-Chlorotoluene | U | | 0.000386 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 4-Chlorotoluene | U | | 0.000308 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,2-Dibromo-3-Chloropropane | U | | 0.00135 | 0.00641 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,2-Dibromoethane | U | | 0.000440 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Dibromomethane | U | | 0.000490 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,2-Dichlorobenzene | U | | 0.000391 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,3-Dichlorobenzene | U | | 0.000307 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,4-Dichlorobenzene | U | | 0.000290 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Dichlorodifluoromethane | U | J0 | 0.000914 | 0.00641 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,1-Dichloroethane | U | | 0.000255 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,2-Dichloroethane | U | | 0.000340 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,1-Dichloroethene | U | | 0.000389 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| cis-1,2-Dichloroethene | U | | 0.000301 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| trans-1,2-Dichloroethene | U | | 0.000339 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,2-Dichloropropane | U | | 0.000459 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,1-Dichloropropene | U | | 0.000407 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,3-Dichloropropane | U | | 0.000265 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| cis-1,3-Dichloropropene | U | | 0.000336 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| trans-1,3-Dichloropropene | U | | 0.000342 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 2,2-Dichloropropane | U | | 0.000358 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Di-isopropyl ether | U | | 0.000318 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Ethylbenzene | U | | 0.000381 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Hexachloro-1,3-butadiene | U | J4 | 0.000439 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Isopropylbenzene | U | | 0.000312 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| p-Isopropyltoluene | U | | 0.000262 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 2-Butanone (MEK) | U | | 0.00600 | 0.0128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Methylene Chloride | U | | 0.00128 | 0.00641 | 1 | 04/23/2018 12:50 | WG1101837 |
| 4-Methyl-2-pentanone (MIBK) | U | | 0.00241 | 0.0128 | 1 | 04/23/2018 12:50 | WG1101837 |

## Volatile Organic Compounds (GC/MS) by Method 8260C

| Analyte | Result (dry) mg/kg | Qualifier | MDL (dry) mg/kg | RDL (dry) mg/kg | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|---|
| Methyl tert-butyl ether | U | | 0.000272 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Naphthalene | U | | 0.00128 | 0.00641 | 1 | 04/23/2018 12:50 | WG1101837 |
| n-Propylbenzene | U | | 0.000264 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Styrene | U | | 0.000300 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,1,1,2-Tetrachloroethane | U | | 0.000339 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,1,2,2-Tetrachloroethane | U | | 0.000468 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,1,2-Trichlorotrifluoroethane | U | | 0.000468 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Tetrachloroethene | 0.000458 | J | 0.000354 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Toluene | U | | 0.000557 | 0.00641 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,2,3-Trichlorobenzene | U | | 0.000392 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,2,4-Trichlorobenzene | U | | 0.000498 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,1,1-Trichloroethane | U | | 0.000367 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,1,2-Trichloroethane | U | | 0.000355 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Trichloroethene | U | | 0.000358 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Trichlorofluoromethane | U | | 0.000490 | 0.00641 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,2,3-Trichloropropane | U | | 0.000950 | 0.00321 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,2,4-Trimethylbenzene | U | | 0.000271 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,2,3-Trimethylbenzene | U | | 0.000368 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Vinyl chloride | U | | 0.000373 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| 1,3,5-Trimethylbenzene | U | | 0.000341 | 0.00128 | 1 | 04/23/2018 12:50 | WG1101837 |
| Xylenes, Total | U | | 0.000895 | 0.00385 | 1 | 04/23/2018 12:50 | WG1101837 |
| *(S) Toluene-d8* | *103* | | | *80.0-120* | | *04/23/2018 12:50* | WG1101837 |
| *(S) Dibromofluoromethane* | *92.4* | | | *74.0-131* | | *04/23/2018 12:50* | WG1101837 |
| *(S) 4-Bromofluorobenzene* | *91.5* | | | *64.0-132* | | *04/23/2018 12:50* | WG1101837 |

## Total Solids by Method 2540 G-2011

| Analyte | Result | Qualifier | Dilution | Analysis | Batch |
|---|---|---|---|---|---|
| | % | | | date / time | |
| Total Solids | 77.8 | | 1 | 04/24/2018 10:05 | WG1102163 |

## Mercury by Method 7471B

| Analyte | Result (dry) | Qualifier | MDL (dry) | RDL (dry) | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | mg/kg | | mg/kg | mg/kg | | date / time | |
| Mercury | 0.00702 | J | 0.00360 | 0.0257 | 1 | 04/23/2018 16:59 | WG1101793 |

## Metals (ICP) by Method 6010C

| Analyte | Result (dry) | Qualifier | MDL (dry) | RDL (dry) | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | mg/kg | | mg/kg | mg/kg | | date / time | |
| Arsenic | 2.89 | | 0.836 | 2.57 | 1 | 04/26/2018 10:27 | WG1101658 |
| Barium | 125 | | 0.219 | 0.643 | 1 | 04/26/2018 10:27 | WG1101658 |
| Cadmium | 0.157 | J | 0.0900 | 0.643 | 1 | 04/26/2018 10:27 | WG1101658 |
| Chromium | 12.6 | | 0.180 | 1.29 | 1 | 04/26/2018 10:27 | WG1101658 |
| Lead | 6.73 | | 0.244 | 0.643 | 1 | 04/26/2018 10:27 | WG1101658 |
| Selenium | U | | 0.952 | 2.57 | 1 | 04/26/2018 10:27 | WG1101658 |
| Silver | U | | 0.360 | 1.29 | 1 | 04/26/2018 10:27 | WG1101658 |

## Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

| Analyte | Result (dry) | Qualifier | MDL (dry) | RDL (dry) | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | mg/kg | | mg/kg | mg/kg | | date / time | |
| Diesel Range Organics (DRO) | U | | 1.70 | 5.14 | 1 | 04/24/2018 18:31 | WG1102009 |
| Residual Range Organics (RRO) | U | | 4.24 | 12.9 | 1 | 04/24/2018 18:31 | WG1102009 |
| *(S) o-Terphenyl* | *33.5* | | | *18.0-148* | | *04/24/2018 18:31* | WG1102009 |

## Pesticides (GC) by Method 8081B

| Analyte | Result (dry) | Qualifier | MDL (dry) | RDL (dry) | Dilution | Analysis | Batch |
|---|---|---|---|---|---|---|---|
| | mg/kg | | mg/kg | mg/kg | | date / time | |
| Aldrin | U | | 0.00174 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Alpha BHC | U | | 0.00175 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Beta BHC | U | | 0.00206 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Delta BHC | U | | 0.00184 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Gamma BHC | U | | 0.00186 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Chlordane | U | | 0.0502 | 0.257 | 1 | 04/25/2018 03:28 | WG1101747 |
| 4,4-DDD | U | | 0.00201 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| 4,4-DDE | U | | 0.00198 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| 4,4-DDT | U | | 0.00257 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Dieldrin | U | | 0.00195 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Endosulfan I | U | | 0.00192 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Endosulfan II | U | | 0.00206 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Endosulfan sulfate | U | | 0.00194 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Endrin | U | | 0.00202 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Endrin aldehyde | U | | 0.00166 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Endrin ketone | U | | 0.00212 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Heptachlor | U | | 0.00198 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Heptachlor epoxide | U | | 0.00207 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Hexachlorobenzene | U | | 0.00159 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Methoxychlor | U | | 0.00229 | 0.0257 | 1 | 04/25/2018 03:28 | WG1101747 |
| Toxaphene | U | | 0.0463 | 0.514 | 1 | 04/25/2018 03:28 | WG1101747 |
| *(S) Decachlorobiphenyl* | *113* | | | *10.0-148* | | *04/25/2018 03:28* | WG1101747 |
| *(S) Tetrachloro-m-xylene* | *89.2* | | | *21.0-146* | | *04/25/2018 03:28* | WG1101747 |

## Polychlorinated Biphenyls (GC) by Method 8082 A

| Analyte | Result (dry) mg/kg | Qualifier | MDL (dry) mg/kg | RDL (dry) mg/kg | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|---|
| PCB 1016 | U | | 0.00450 | 0.0219 | 1 | 04/24/2018 12:21 | WG1101747 |
| PCB 1221 | U | | 0.00691 | 0.0219 | 1 | 04/24/2018 12:21 | WG1101747 |
| PCB 1232 | U | | 0.00536 | 0.0219 | 1 | 04/24/2018 12:21 | WG1101747 |
| PCB 1242 | U | | 0.00409 | 0.0219 | 1 | 04/24/2018 12:21 | WG1101747 |
| PCB 1248 | U | | 0.00405 | 0.0219 | 1 | 04/24/2018 12:21 | WG1101747 |
| PCB 1254 | U | | 0.00607 | 0.0219 | 1 | 04/24/2018 12:21 | WG1101747 |
| PCB 1260 | U | | 0.00635 | 0.0219 | 1 | 04/24/2018 12:21 | WG1101747 |
| *(S) Decachlorobiphenyl* | *68.0* | | | *10.0-148* | | *04/24/2018 12:21* | WG1101747 |
| *(S) Tetrachloro-m-xylene* | *71.6* | | | *21.0-146* | | *04/24/2018 12:21* | WG1101747 |

## Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

| Analyte | Result (dry) mg/kg | Qualifier | MDL (dry) mg/kg | RDL (dry) mg/kg | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|---|
| Anthracene | 0.00106 | J | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Acenaphthene | U | | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Acenaphthylene | U | | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Benzo(a)anthracene | 0.000933 | J | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Benzo(a)pyrene | 0.00170 | J | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Benzo(b)fluoranthene | 0.00254 | J | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Benzo(g,h,i)perylene | 0.00187 | J | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Benzo(k)fluoranthene | 0.000993 | J | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Chrysene | U | | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Dibenz(a,h)anthracene | U | | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Fluoranthene | U | | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Fluorene | U | | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Indeno(1,2,3-cd)pyrene | 0.00184 | J | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Naphthalene | 0.00320 | J | 0.00257 | 0.0257 | 1 | 04/24/2018 17:41 | WG1101922 |
| Phenanthrene | 0.000941 | B J | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| Pyrene | U | | 0.000772 | 0.00772 | 1 | 04/24/2018 17:41 | WG1101922 |
| 1-Methylnaphthalene | U | | 0.00257 | 0.0257 | 1 | 04/24/2018 17:41 | WG1101922 |
| 2-Methylnaphthalene | U | | 0.00257 | 0.0257 | 1 | 04/24/2018 17:41 | WG1101922 |
| 2-Chloronaphthalene | U | | 0.00257 | 0.0257 | 1 | 04/24/2018 17:41 | WG1101922 |
| *(S) Nitrobenzene-d5* | *68.5* | | | *14.0-149* | | *04/24/2018 17:41* | WG1101922 |
| *(S) 2-Fluorobiphenyl* | *67.9* | | | *34.0-125* | | *04/24/2018 17:41* | WG1101922 |
| *(S) p-Terphenyl-d14* | *55.7* | | | *23.0-120* | | *04/24/2018 17:41* | WG1101922 |

## Method Blank (MB)

(MB) R3304448-1 04/24/18 10:05

| Analyte | MB Result % | MB Qualifier | MB MDL % | MB RDL % |
|---|---|---|---|---|
| Total Solids | 0.00100 | | | |

## L987549-07 Original Sample (OS) • Duplicate (DUP)

(OS) L987549-07 04/24/18 10:05 • (DUP) R3304448-3 04/24/18 10:05

| Analyte | Original Result % | DUP Result % | Dilution | DUP RPD % | DUP Qualifier | DUP RPD Limits % |
|---|---|---|---|---|---|---|
| Total Solids | 78.0 | 78.5 | 1 | 0.677 | | 5 |

## Laboratory Control Sample (LCS)

(LCS) R3304448-2 04/24/18 10:05

| Analyte | Spike Amount % | LCS Result % | LCS Rec. % | Rec. Limits % | LCS Qualifier |
|---|---|---|---|---|---|
| Total Solids | 50.0 | 50.0 | 100 | 85.0-115 | |

## Method Blank (MB)

(MB) R3304018-1 04/23/18 16:03

| Analyte | MB Result mg/kg | MB Qualifier | MB MDL mg/kg | MB RDL mg/kg |
|---|---|---|---|---|
| Mercury | U | | 0.00280 | 0.0200 |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3304018-2 04/23/18 16:05 • (LCSD) R3304018-3 04/23/18 16:13

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.300 | 0.336 | 0.333 | 112 | 111 | 80.0-120 | | | 1.05 | 20 |

## L987223-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L987223-07 04/23/18 16:15 • (MS) R3304018-4 04/23/18 16:18 • (MSD) R3304018-5 04/23/18 16:20

| Analyte | Spike Amount (dry) mg/kg | Original Result (dry) mg/kg | MS Result (dry) mg/kg | MSD Result (dry) mg/kg | MS Rec. % | MSD Rec. % | Dilution | Rec. Limits % | MS Qualifier | MSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.349 | 0.356 | 0.667 | 0.588 | 89.0 | 66.4 | 1 | 75.0-125 | | J6 | 12.6 | 20 |

## Method Blank (MB)

(MB) R3304985-1 04/26/18 09:34

| Analyte | MB Result mg/kg | MB Qualifier | MB MDL mg/kg | MB RDL mg/kg |
|---|---|---|---|---|
| Arsenic | U | | 0.650 | 2.00 |
| Barium | U | | 0.170 | 0.500 |
| Cadmium | U | | 0.0700 | 0.500 |
| Chromium | U | | 0.140 | 1.00 |
| Lead | U | | 0.190 | 0.500 |
| Selenium | U | | 0.740 | 2.00 |
| Silver | U | | 0.280 | 1.00 |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3304985-2 04/26/18 09:37 • (LCSD) R3304985-3 04/26/18 09:40

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 100 | 102 | 103 | 102 | 103 | 80.0-120 | | | 0.162 | 20 |
| Barium | 100 | 109 | 109 | 109 | 109 | 80.0-120 | | | 0.270 | 20 |
| Cadmium | 100 | 103 | 103 | 103 | 103 | 80.0-120 | | | 0.564 | 20 |
| Chromium | 100 | 105 | 103 | 105 | 103 | 80.0-120 | | | 1.45 | 20 |
| Lead | 100 | 104 | 104 | 104 | 104 | 80.0-120 | | | 0.435 | 20 |
| Selenium | 100 | 107 | 107 | 107 | 107 | 80.0-120 | | | 0.519 | 20 |
| Silver | 20.0 | 19.7 | 19.4 | 98.5 | 97.2 | 80.0-120 | | | 1.35 | 20 |

## L987488-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L987488-01 04/26/18 09:44 • (MS) R3304985-6 04/26/18 09:54 • (MSD) R3304985-7 04/26/18 09:57

| Analyte | Spike Amount (dry) mg/kg | Original Result (dry) mg/kg | MS Result (dry) mg/kg | MSD Result (dry) mg/kg | MS Rec. % | MSD Rec. % | Dilution | Rec. Limits % | MS Qualifier | MSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 138 | 46.6 | 183 | 179 | 99.0 | 95.5 | 1 | 75.0-125 | | | 2.69 | 20 |
| Barium | 138 | 636 | 810 | 1110 | 126 | 344 | 1 | 75.0-125 | V | J3 V | 31.3 | 20 |
| Cadmium | 138 | 9.11 | 155 | 157 | 106 | 107 | 1 | 75.0-125 | | | 1.38 | 20 |
| Chromium | 138 | 108 | 270 | 234 | 117 | 91.0 | 1 | 75.0-125 | | | 14.2 | 20 |
| Lead | 138 | 5860 | 7170 | 7340 | 950 | 1070 | 1 | 75.0-125 | V | V | 2.27 | 20 |
| Selenium | 138 | U | 145 | 147 | 105 | 107 | 1 | 75.0-125 | | | 1.77 | 20 |
| Silver | 27.7 | 1.19 | 28.5 | 29.2 | 98.8 | 101 | 1 | 75.0-125 | | | 2.57 | 20 |

## Method Blank (MB)

(MB) R3304666-3 04/23/18 22:56

| Analyte | MB Result mg/kg | MB Qualifier | MB MDL mg/kg | MB RDL mg/kg |
|---|---|---|---|---|
| Gasoline Range Organics-NWTPH | U | | 0.0339 | 0.100 |
| *(S) a,a,a-Trifluorotoluene(FID)* | *105* | | | *77.0-120* |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3304666-1 04/23/18 21:47 • (LCSD) R3304666-2 04/23/18 22:10

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics-NWTPH | 5.50 | 5.13 | 5.16 | 93.3 | 93.9 | 70.0-133 | | | 0.632 | 20 |
| *(S) a,a,a-Trifluorotoluene(FID)* | | | | *98.9* | *99.2* | *77.0-120* | | | | |

## L987543-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L987543-01 04/24/18 15:38 • (MS) R3304666-4 04/24/18 16:01 • (MSD) R3304666-5 04/24/18 16:24

| Analyte | Spike Amount mg/kg | Original Result mg/kg | MS Result mg/kg | MSD Result mg/kg | MS Rec. % | MSD Rec. % | Dilution | Rec. Limits % | MS Qualifier | MSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics-NWTPH | 5.50 | 931 | 1140 | 1160 | 38.7 | 42.6 | 100 | 10.0-146 | E | E | 1.85 | 30 |
| *(S) a,a,a-Trifluorotoluene(FID)* | | | | | *99.4* | *99.3* | | *77.0-120* | | | | |

## Method Blank (MB)

(MB) R3303975-3 04/21/18 11:17

| Analyte | MB Result ug/l | MB Qualifier | MB MDL ug/l | MB RDL ug/l |
|---|---|---|---|---|
| Acetone | U | | 1.05 | 25.0 |
| Acrylonitrile | U | | 0.873 | 5.00 |
| Benzene | U | | 0.0896 | 0.500 |
| Bromobenzene | U | | 0.133 | 0.500 |
| Bromochloromethane | U | | 0.145 | 0.500 |
| Bromodichloromethane | U | | 0.0800 | 0.500 |
| Bromoform | U | | 0.186 | 0.500 |
| Bromomethane | U | | 0.157 | 2.50 |
| n-Butylbenzene | U | | 0.143 | 0.500 |
| sec-Butylbenzene | U | | 0.134 | 0.500 |
| tert-Butylbenzene | U | | 0.183 | 0.500 |
| Carbon disulfide | U | | 0.101 | 0.500 |
| Carbon tetrachloride | U | | 0.159 | 0.500 |
| Chlorobenzene | U | | 0.140 | 0.500 |
| Chlorodibromomethane | U | | 0.128 | 0.500 |
| Chloroethane | U | | 0.141 | 2.50 |
| Chloroform | U | | 0.0860 | 0.500 |
| Chloromethane | U | | 0.153 | 1.25 |
| 2-Chlorotoluene | U | | 0.111 | 0.500 |
| 4-Chlorotoluene | U | | 0.0972 | 0.500 |
| 1,2-Dibromo-3-Chloropropane | U | | 0.325 | 2.50 |
| 1,2-Dibromoethane | U | | 0.193 | 0.500 |
| Dibromomethane | U | | 0.117 | 0.500 |
| 1,2-Dichlorobenzene | U | | 0.101 | 0.500 |
| 1,3-Dichlorobenzene | U | | 0.130 | 0.500 |
| 1,4-Dichlorobenzene | U | | 0.121 | 0.500 |
| Dichlorodifluoromethane | U | | 0.127 | 2.50 |
| 1,1-Dichloroethane | U | | 0.114 | 0.500 |
| 1,2-Dichloroethane | U | | 0.108 | 0.500 |
| 1,1-Dichloroethene | U | | 0.188 | 0.500 |
| cis-1,2-Dichloroethene | U | | 0.0933 | 0.500 |
| trans-1,2-Dichloroethene | U | | 0.152 | 0.500 |
| 1,2-Dichloropropane | U | | 0.190 | 0.500 |
| trans-1,4-Dichloro-2-butene | U | | 0.257 | 5.00 |
| 1,1-Dichloropropene | U | | 0.128 | 0.500 |
| 1,3-Dichloropropane | U | | 0.147 | 1.00 |
| cis-1,3-Dichloropropene | U | | 0.0976 | 0.500 |
| trans-1,3-Dichloropropene | U | | 0.222 | 0.500 |
| 2,2-Dichloropropane | U | | 0.0929 | 0.500 |
| 2-Hexanone | U | | 0.757 | 5.00 |

## Method Blank (MB)

(MB) R3303975-3 04/21/18 11:17

| Analyte | MB Result ug/l | MB Qualifier | MB MDL ug/l | MB RDL ug/l |
|---|---|---|---|---|
| n-Hexane | U | | 0.305 | 5.00 |
| Di-isopropyl ether | U | | 0.0924 | 0.500 |
| Iodomethane | U | | 0.377 | 10.0 |
| Ethylbenzene | U | | 0.158 | 0.500 |
| Hexachloro-1,3-butadiene | U | | 0.157 | 1.00 |
| Isopropylbenzene | U | | 0.126 | 0.500 |
| p-Isopropyltoluene | U | | 0.138 | 0.500 |
| 2-Butanone (MEK) | U | | 1.28 | 5.00 |
| Methylene Chloride | U | | 1.07 | 2.50 |
| 4-Methyl-2-pentanone (MIBK) | U | | 0.823 | 5.00 |
| Methyl tert-butyl ether | U | | 0.102 | 0.500 |
| Naphthalene | U | | 0.174 | 2.50 |
| n-Propylbenzene | U | | 0.162 | 0.500 |
| Vinyl acetate | U | | 0.645 | 5.00 |
| Styrene | U | | 0.117 | 0.500 |
| 1,1,1,2-Tetrachloroethane | U | | 0.120 | 0.500 |
| 1,1,2,2-Tetrachloroethane | U | | 0.130 | 0.500 |
| Tetrachloroethene | U | | 0.199 | 0.500 |
| Toluene | U | | 0.412 | 0.500 |
| 1,1,2-Trichlorotrifluoroethane | U | | 0.164 | 0.500 |
| 1,2,3-Trichlorobenzene | U | | 0.164 | 0.500 |
| 1,2,4-Trichlorobenzene | U | | 0.355 | 0.500 |
| 1,1,1-Trichloroethane | U | | 0.0940 | 0.500 |
| 1,1,2-Trichloroethane | U | | 0.186 | 0.500 |
| Trichloroethene | U | | 0.153 | 0.500 |
| Trichlorofluoromethane | U | | 0.130 | 2.50 |
| 1,2,3-Trichloropropane | U | | 0.247 | 2.50 |
| 1,2,3-Trimethylbenzene | U | | 0.0739 | 0.500 |
| 1,2,4-Trimethylbenzene | U | | 0.123 | 0.500 |
| 1,3,5-Trimethylbenzene | U | | 0.124 | 0.500 |
| Vinyl chloride | U | | 0.118 | 0.500 |
| Xylenes, Total | U | | 0.316 | 1.50 |
| *(S) Toluene-d8* | *103* | | | *80.0-120* |
| *(S) Dibromofluoromethane* | *101* | | | *76.0-123* |
| *(S) 4-Bromofluorobenzene* | *96.3* | | | *80.0-120* |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3303975-1 04/21/18 10:21 • (LCSD) R3303975-2 04/21/18 10:39

| Analyte | Spike Amount ug/l | LCS Result ug/l | LCSD Result ug/l | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| Bromochloromethane | 25.0 | 21.9 | 23.0 | 87.4 | 91.9 | 76.0-122 | | | 4.95 | 20 |
| Acetone | 125 | 121 | 117 | 96.6 | 93.4 | 10.0-160 | | | 3.44 | 23 |
| Acrylonitrile | 125 | 99.5 | 112 | 79.6 | 89.7 | 60.0-142 | | | 12.0 | 20 |
| trans-1,4-Dichloro-2-butene | 25.0 | 22.8 | 22.4 | 91.3 | 89.7 | 55.0-134 | | | 1.79 | 20 |
| Benzene | 25.0 | 21.4 | 21.7 | 85.4 | 86.6 | 69.0-123 | | | 1.42 | 20 |
| Bromobenzene | 25.0 | 21.0 | 20.6 | 83.9 | 82.5 | 79.0-120 | | | 1.70 | 20 |
| Bromodichloromethane | 25.0 | 22.9 | 22.9 | 91.5 | 91.7 | 76.0-120 | | | 0.242 | 20 |
| 2-Hexanone | 125 | 123 | 119 | 98.6 | 95.4 | 58.0-147 | | | 3.28 | 20 |
| Bromoform | 25.0 | 22.5 | 22.3 | 90.1 | 89.3 | 67.0-132 | | | 0.960 | 20 |
| Bromomethane | 25.0 | 21.0 | 22.5 | 84.1 | 89.9 | 18.0-160 | | | 6.57 | 20 |
| n-Hexane | 25.0 | 20.8 | 21.3 | 83.2 | 85.2 | 56.0-124 | | | 2.45 | 20 |
| Iodomethane | 125 | 104 | 107 | 82.9 | 85.7 | 57.0-140 | | | 3.37 | 20 |
| n-Butylbenzene | 25.0 | 21.9 | 22.0 | 87.7 | 88.2 | 72.0-126 | | | 0.480 | 20 |
| sec-Butylbenzene | 25.0 | 21.3 | 21.6 | 85.3 | 86.4 | 74.0-121 | | | 1.24 | 20 |
| tert-Butylbenzene | 25.0 | 21.1 | 21.1 | 84.4 | 84.2 | 75.0-122 | | | 0.249 | 20 |
| Carbon disulfide | 25.0 | 19.3 | 20.0 | 77.3 | 79.8 | 55.0-127 | | | 3.16 | 20 |
| Carbon tetrachloride | 25.0 | 20.4 | 21.0 | 81.5 | 84.1 | 63.0-122 | | | 3.13 | 20 |
| Chlorobenzene | 25.0 | 22.6 | 22.9 | 90.3 | 91.5 | 79.0-121 | | | 1.34 | 20 |
| Chlorodibromomethane | 25.0 | 23.1 | 23.2 | 92.2 | 93.0 | 75.0-125 | | | 0.810 | 20 |
| Chloroethane | 25.0 | 20.9 | 22.2 | 83.7 | 88.8 | 47.0-152 | | | 5.89 | 20 |
| Chloroform | 25.0 | 21.7 | 22.4 | 86.9 | 89.5 | 72.0-121 | | | 2.92 | 20 |
| Chloromethane | 25.0 | 21.1 | 21.7 | 84.5 | 86.8 | 48.0-139 | | | 2.66 | 20 |
| 2-Chlorotoluene | 25.0 | 20.9 | 21.2 | 83.5 | 84.6 | 74.0-122 | | | 1.31 | 20 |
| 4-Chlorotoluene | 25.0 | 21.5 | 21.2 | 85.9 | 85.0 | 79.0-120 | | | 1.10 | 20 |
| 1,2-Dibromo-3-Chloropropane | 25.0 | 23.6 | 23.4 | 94.6 | 93.6 | 64.0-127 | | | 1.07 | 20 |
| 1,2-Dibromoethane | 25.0 | 23.1 | 23.4 | 92.5 | 93.4 | 77.0-123 | | | 1.00 | 20 |
| Dibromomethane | 25.0 | 23.4 | 23.4 | 93.8 | 93.4 | 78.0-120 | | | 0.371 | 20 |
| 1,2-Dichlorobenzene | 25.0 | 22.2 | 22.8 | 88.7 | 91.3 | 80.0-120 | | | 2.82 | 20 |
| 1,3-Dichlorobenzene | 25.0 | 21.9 | 22.1 | 87.7 | 88.4 | 72.0-123 | | | 0.899 | 20 |
| 1,4-Dichlorobenzene | 25.0 | 22.4 | 22.5 | 89.5 | 89.8 | 77.0-120 | | | 0.407 | 20 |
| Dichlorodifluoromethane | 25.0 | 21.5 | 22.3 | 85.8 | 89.2 | 49.0-155 | | | 3.81 | 20 |
| 1,1-Dichloroethane | 25.0 | 21.9 | 22.3 | 87.5 | 89.2 | 70.0-126 | | | 1.90 | 20 |
| 1,2-Dichloroethane | 25.0 | 22.9 | 23.4 | 91.7 | 93.4 | 67.0-126 | | | 1.87 | 20 |
| 1,1-Dichloroethene | 25.0 | 20.6 | 21.4 | 82.6 | 85.7 | 64.0-129 | | | 3.72 | 20 |
| Vinyl acetate | 125 | 120 | 124 | 95.8 | 99.3 | 46.0-160 | | | 3.51 | 20 |
| cis-1,2-Dichloroethene | 25.0 | 21.0 | 21.9 | 84.0 | 87.7 | 73.0-120 | | | 4.28 | 20 |
| trans-1,2-Dichloroethene | 25.0 | 20.5 | 21.2 | 82.2 | 84.9 | 71.0-121 | | | 3.19 | 20 |
| 1,2-Dichloropropane | 25.0 | 22.8 | 22.8 | 91.1 | 91.2 | 75.0-125 | | | 0.0919 | 20 |
| 1,1-Dichloropropene | 25.0 | 21.8 | 22.0 | 87.0 | 88.1 | 71.0-129 | | | 1.21 | 20 |
| 1,3-Dichloropropane | 25.0 | 23.4 | 23.3 | 93.5 | 93.3 | 80.0-121 | | | 0.166 | 20 |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3303975-1 04/21/18 10:21 • (LCSD) R3303975-2 04/21/18 10:39

| Analyte | Spike Amount ug/l | LCS Result ug/l | LCSD Result ug/l | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | 25.0 | 23.2 | 23.4 | 92.7 | 93.5 | 79.0-123 | | | 0.909 | 20 |
| trans-1,3-Dichloropropene | 25.0 | 23.4 | 23.6 | 93.7 | 94.4 | 74.0-127 | | | 0.687 | 20 |
| 2,2-Dichloropropane | 25.0 | 17.8 | 22.3 | 71.0 | 89.1 | 60.0-125 | | J3 | 22.6 | 20 |
| Di-isopropyl ether | 25.0 | 22.2 | 22.7 | 88.7 | 91.0 | 59.0-133 | | | 2.50 | 20 |
| Ethylbenzene | 25.0 | 22.1 | 22.5 | 88.3 | 90.0 | 77.0-120 | | | 1.89 | 20 |
| Hexachloro-1,3-butadiene | 25.0 | 20.3 | 21.0 | 81.3 | 84.1 | 64.0-131 | | | 3.32 | 20 |
| Isopropylbenzene | 25.0 | 20.8 | 21.1 | 83.0 | 84.6 | 75.0-120 | | | 1.82 | 20 |
| p-Isopropyltoluene | 25.0 | 21.4 | 21.8 | 85.5 | 87.1 | 74.0-126 | | | 1.85 | 20 |
| 2-Butanone (MEK) | 125 | 120 | 115 | 95.7 | 92.4 | 37.0-158 | | | 3.54 | 20 |
| Methylene Chloride | 25.0 | 21.4 | 22.0 | 85.6 | 87.9 | 66.0-121 | | | 2.71 | 20 |
| 4-Methyl-2-pentanone (MIBK) | 125 | 120 | 117 | 96.2 | 93.2 | 59.0-143 | | | 3.08 | 20 |
| Methyl tert-butyl ether | 25.0 | 21.8 | 23.4 | 87.3 | 93.5 | 64.0-123 | | | 6.80 | 20 |
| Naphthalene | 25.0 | 21.9 | 24.1 | 87.7 | 96.5 | 62.0-128 | | | 9.48 | 20 |
| n-Propylbenzene | 25.0 | 21.0 | 20.9 | 84.0 | 83.7 | 79.0-120 | | | 0.339 | 20 |
| Styrene | 25.0 | 22.0 | 21.4 | 87.9 | 85.6 | 78.0-124 | | | 2.74 | 20 |
| 1,1,1,2-Tetrachloroethane | 25.0 | 22.2 | 22.9 | 88.8 | 91.7 | 75.0-122 | | | 3.23 | 20 |
| 1,1,2,2-Tetrachloroethane | 25.0 | 22.4 | 22.2 | 89.5 | 89.0 | 71.0-122 | | | 0.596 | 20 |
| Tetrachloroethene | 25.0 | 21.5 | 21.6 | 85.9 | 86.3 | 70.0-127 | | | 0.563 | 20 |
| Toluene | 25.0 | 21.3 | 21.5 | 85.2 | 86.2 | 77.0-120 | | | 1.09 | 20 |
| 1,1,2-Trichlorotrifluoroethane | 25.0 | 21.9 | 22.4 | 87.7 | 89.6 | 61.0-136 | | | 2.19 | 20 |
| 1,2,3-Trichlorobenzene | 25.0 | 20.2 | 22.5 | 80.7 | 90.1 | 61.0-133 | | | 10.9 | 20 |
| 1,2,4-Trichlorobenzene | 25.0 | 20.9 | 22.4 | 83.8 | 89.7 | 69.0-129 | | | 6.88 | 20 |
| 1,1,1-Trichloroethane | 25.0 | 21.6 | 22.1 | 86.5 | 88.6 | 68.0-122 | | | 2.40 | 20 |
| 1,1,2-Trichloroethane | 25.0 | 22.7 | 22.9 | 90.6 | 91.6 | 78.0-120 | | | 1.03 | 20 |
| Trichloroethene | 25.0 | 21.9 | 21.8 | 87.6 | 87.1 | 78.0-120 | | | 0.574 | 20 |
| Trichlorofluoromethane | 25.0 | 22.4 | 22.8 | 89.7 | 91.2 | 56.0-137 | | | 1.74 | 20 |
| 1,2,3-Trichloropropane | 25.0 | 22.6 | 22.0 | 90.6 | 88.0 | 72.0-124 | | | 2.90 | 20 |
| 1,2,3-Trimethylbenzene | 25.0 | 21.8 | 22.4 | 87.3 | 89.7 | 75.0-120 | | | 2.73 | 20 |
| 1,2,4-Trimethylbenzene | 25.0 | 20.9 | 21.6 | 83.4 | 86.3 | 75.0-120 | | | 3.31 | 20 |
| 1,3,5-Trimethylbenzene | 25.0 | 20.8 | 21.2 | 83.2 | 84.8 | 75.0-120 | | | 1.87 | 20 |
| Vinyl chloride | 25.0 | 21.7 | 22.6 | 86.8 | 90.4 | 64.0-133 | | | 4.04 | 20 |
| Xylenes, Total | 75.0 | 65.6 | 66.9 | 87.5 | 89.2 | 77.0-120 | | | 1.96 | 20 |
| *(S) Toluene-d8* | | | | *101* | *102* | *80.0-120* | | | | |
| *(S) Dibromofluoromethane* | | | | *98.8* | *99.9* | *76.0-123* | | | | |
| *(S) 4-Bromofluorobenzene* | | | | *95.6* | *95.1* | *80.0-120* | | | | |

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

## Method Blank (MB)

(MB) R3304710-4 04/23/18 12:00

| Analyte | MB Result mg/kg | MB Qualifier | MB MDL mg/kg | MB RDL mg/kg |
|---|---|---|---|---|
| Acetone | U | | 0.0100 | 0.0500 |
| Acrylonitrile | U | | 0.00179 | 0.0100 |
| Benzene | U | | 0.000270 | 0.00100 |
| Bromobenzene | U | | 0.000284 | 0.00100 |
| Bromodichloromethane | U | | 0.000254 | 0.00100 |
| Bromoform | U | | 0.000424 | 0.00100 |
| Bromomethane | U | | 0.00134 | 0.00500 |
| n-Butylbenzene | U | | 0.000258 | 0.00100 |
| sec-Butylbenzene | U | | 0.000201 | 0.00100 |
| tert-Butylbenzene | U | | 0.000206 | 0.00100 |
| Carbon tetrachloride | U | | 0.000328 | 0.00100 |
| Chlorobenzene | U | | 0.000212 | 0.00100 |
| Chlorodibromomethane | U | | 0.000373 | 0.00100 |
| Chloroethane | U | | 0.000946 | 0.00500 |
| Chloroform | U | | 0.000229 | 0.00500 |
| Chloromethane | U | | 0.000375 | 0.00250 |
| 2-Chlorotoluene | U | | 0.000301 | 0.00100 |
| 4-Chlorotoluene | U | | 0.000240 | 0.00100 |
| 1,2-Dibromo-3-Chloropropane | U | | 0.00105 | 0.00500 |
| 1,2-Dibromoethane | U | | 0.000343 | 0.00100 |
| Dibromomethane | U | | 0.000382 | 0.00100 |
| 1,2-Dichlorobenzene | U | | 0.000305 | 0.00100 |
| 1,3-Dichlorobenzene | U | | 0.000239 | 0.00100 |
| 1,4-Dichlorobenzene | U | | 0.000226 | 0.00100 |
| Dichlorodifluoromethane | U | | 0.000713 | 0.00500 |
| 1,1-Dichloroethane | U | | 0.000199 | 0.00100 |
| 1,2-Dichloroethane | U | | 0.000265 | 0.00100 |
| 1,1-Dichloroethene | U | | 0.000303 | 0.00100 |
| cis-1,2-Dichloroethene | U | | 0.000235 | 0.00100 |
| trans-1,2-Dichloroethene | U | | 0.000264 | 0.00100 |
| 1,2-Dichloropropane | U | | 0.000358 | 0.00100 |
| 1,1-Dichloropropene | U | | 0.000317 | 0.00100 |
| 1,3-Dichloropropane | U | | 0.000207 | 0.00100 |
| cis-1,3-Dichloropropene | U | | 0.000262 | 0.00100 |
| trans-1,3-Dichloropropene | U | | 0.000267 | 0.00100 |
| 2,2-Dichloropropane | U | | 0.000279 | 0.00100 |
| Di-isopropyl ether | U | | 0.000248 | 0.00100 |
| Ethylbenzene | U | | 0.000297 | 0.00100 |
| Hexachloro-1,3-butadiene | U | | 0.000342 | 0.00100 |
| Isopropylbenzene | U | | 0.000243 | 0.00100 |

## Method Blank (MB)

(MB) R3304710-4 04/23/18 12:00

| Analyte | MB Result mg/kg | MB Qualifier | MB MDL mg/kg | MB RDL mg/kg |
|---|---|---|---|---|
| p-Isopropyltoluene | U | | 0.000204 | 0.00100 |
| 2-Butanone (MEK) | U | | 0.00468 | 0.0100 |
| Methylene Chloride | U | | 0.00100 | 0.00500 |
| 4-Methyl-2-pentanone (MIBK) | U | | 0.00188 | 0.0100 |
| Methyl tert-butyl ether | U | | 0.000212 | 0.00100 |
| Naphthalene | U | | 0.00100 | 0.00500 |
| n-Propylbenzene | U | | 0.000206 | 0.00100 |
| Styrene | U | | 0.000234 | 0.00100 |
| 1,1,1,2-Tetrachloroethane | U | | 0.000264 | 0.00100 |
| 1,1,2,2-Tetrachloroethane | U | | 0.000365 | 0.00100 |
| Tetrachloroethene | U | | 0.000276 | 0.00100 |
| Toluene | U | | 0.000434 | 0.00500 |
| 1,1,2-Trichlorotrifluoroethane | U | | 0.000365 | 0.00100 |
| 1,2,3-Trichlorobenzene | U | | 0.000306 | 0.00100 |
| 1,2,4-Trichlorobenzene | U | | 0.000388 | 0.00100 |
| 1,1,1-Trichloroethane | U | | 0.000286 | 0.00100 |
| 1,1,2-Trichloroethane | U | | 0.000277 | 0.00100 |
| Trichloroethene | U | | 0.000279 | 0.00100 |
| Trichlorofluoromethane | U | | 0.000382 | 0.00500 |
| 1,2,3-Trichloropropane | U | | 0.000741 | 0.00250 |
| 1,2,3-Trimethylbenzene | U | | 0.000287 | 0.00100 |
| 1,2,4-Trimethylbenzene | U | | 0.000211 | 0.00100 |
| 1,3,5-Trimethylbenzene | U | | 0.000266 | 0.00100 |
| Vinyl chloride | U | | 0.000291 | 0.00100 |
| Xylenes, Total | U | | 0.000698 | 0.00300 |
| *(S) Toluene-d8* | *113* | | | *80.0-120* |
| *(S) Dibromofluoromethane* | *86.9* | | | *74.0-131* |
| *(S) 4-Bromofluorobenzene* | *93.1* | | | *64.0-132* |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3304710-1 04/23/18 09:53 • (LCSD) R3304710-2 04/23/18 10:14

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | 0.125 | 0.0987 | 0.103 | 78.9 | 82.0 | 11.0-160 | | | 3.85 | 23 |
| Acrylonitrile | 0.125 | 0.117 | 0.117 | 93.4 | 93.7 | 61.0-143 | | | 0.346 | 20 |
| Benzene | 0.0250 | 0.0227 | 0.0227 | 90.6 | 90.8 | 71.0-124 | | | 0.230 | 20 |
| Bromobenzene | 0.0250 | 0.0244 | 0.0241 | 97.5 | 96.4 | 78.0-120 | | | 1.09 | 20 |
| Bromodichloromethane | 0.0250 | 0.0245 | 0.0250 | 97.9 | 100 | 75.0-120 | | | 2.10 | 20 |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3304710-1 04/23/18 09:53 • (LCSD) R3304710-2 04/23/18 10:14

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| Bromoform | 0.0250 | 0.0259 | 0.0259 | 103 | 103 | 65.0-133 | | | 0.0520 | 20 |
| Bromomethane | 0.0250 | 0.0194 | 0.0190 | 77.7 | 76.2 | 26.0-160 | | | 1.93 | 20 |
| n-Butylbenzene | 0.0250 | 0.0259 | 0.0257 | 103 | 103 | 73.0-126 | | | 0.682 | 20 |
| sec-Butylbenzene | 0.0250 | 0.0257 | 0.0252 | 103 | 101 | 75.0-121 | | | 1.95 | 20 |
| tert-Butylbenzene | 0.0250 | 0.0264 | 0.0258 | 106 | 103 | 74.0-122 | | | 2.23 | 20 |
| Carbon tetrachloride | 0.0250 | 0.0221 | 0.0225 | 88.3 | 89.8 | 66.0-123 | | | 1.74 | 20 |
| Chlorobenzene | 0.0250 | 0.0280 | 0.0269 | 112 | 108 | 79.0-121 | | | 4.07 | 20 |
| Chlorodibromomethane | 0.0250 | 0.0278 | 0.0267 | 111 | 107 | 74.0-128 | | | 3.98 | 20 |
| Chloroethane | 0.0250 | 0.0194 | 0.0190 | 77.5 | 75.9 | 51.0-147 | | | 2.08 | 20 |
| Chloroform | 0.0250 | 0.0232 | 0.0231 | 93.0 | 92.6 | 73.0-123 | | | 0.429 | 20 |
| Chloromethane | 0.0250 | 0.0196 | 0.0195 | 78.4 | 77.9 | 51.0-138 | | | 0.653 | 20 |
| 2-Chlorotoluene | 0.0250 | 0.0258 | 0.0251 | 103 | 100 | 72.0-124 | | | 2.84 | 20 |
| 4-Chlorotoluene | 0.0250 | 0.0247 | 0.0244 | 98.9 | 97.7 | 78.0-120 | | | 1.17 | 20 |
| 1,2-Dibromo-3-Chloropropane | 0.0250 | 0.0251 | 0.0251 | 100 | 100 | 65.0-126 | | | 0.248 | 20 |
| 1,2-Dibromoethane | 0.0250 | 0.0274 | 0.0264 | 109 | 105 | 78.0-122 | | | 3.68 | 20 |
| Dibromomethane | 0.0250 | 0.0248 | 0.0242 | 99.4 | 96.7 | 79.0-120 | | | 2.68 | 20 |
| 1,2-Dichlorobenzene | 0.0250 | 0.0265 | 0.0263 | 106 | 105 | 80.0-120 | | | 0.788 | 20 |
| 1,3-Dichlorobenzene | 0.0250 | 0.0262 | 0.0258 | 105 | 103 | 72.0-123 | | | 1.63 | 20 |
| 1,4-Dichlorobenzene | 0.0250 | 0.0251 | 0.0247 | 100 | 98.7 | 77.0-120 | | | 1.60 | 20 |
| Dichlorodifluoromethane | 0.0250 | 0.0166 | 0.0163 | 66.4 | 65.1 | 49.0-155 | | | 1.95 | 20 |
| 1,1-Dichloroethane | 0.0250 | 0.0238 | 0.0238 | 95.2 | 95.2 | 70.0-128 | | | 0.0587 | 20 |
| 1,2-Dichloroethane | 0.0250 | 0.0230 | 0.0231 | 92.2 | 92.4 | 69.0-128 | | | 0.204 | 20 |
| 1,1-Dichloroethene | 0.0250 | 0.0217 | 0.0222 | 86.7 | 88.6 | 63.0-131 | | | 2.16 | 20 |
| cis-1,2-Dichloroethene | 0.0250 | 0.0232 | 0.0232 | 92.7 | 93.0 | 74.0-123 | | | 0.264 | 20 |
| trans-1,2-Dichloroethene | 0.0250 | 0.0229 | 0.0228 | 91.8 | 91.2 | 72.0-122 | | | 0.611 | 20 |
| 1,2-Dichloropropane | 0.0250 | 0.0253 | 0.0257 | 101 | 103 | 75.0-126 | | | 1.29 | 20 |
| 1,1-Dichloropropene | 0.0250 | 0.0229 | 0.0227 | 91.6 | 90.8 | 72.0-130 | | | 0.856 | 20 |
| 1,3-Dichloropropane | 0.0250 | 0.0266 | 0.0257 | 106 | 103 | 80.0-121 | | | 3.11 | 20 |
| cis-1,3-Dichloropropene | 0.0250 | 0.0274 | 0.0263 | 110 | 105 | 80.0-125 | | | 3.97 | 20 |
| trans-1,3-Dichloropropene | 0.0250 | 0.0276 | 0.0267 | 110 | 107 | 75.0-129 | | | 3.46 | 20 |
| 2,2-Dichloropropane | 0.0250 | 0.0232 | 0.0228 | 92.8 | 91.2 | 60.0-129 | | | 1.77 | 20 |
| Di-isopropyl ether | 0.0250 | 0.0238 | 0.0239 | 95.3 | 95.4 | 62.0-133 | | | 0.135 | 20 |
| Ethylbenzene | 0.0250 | 0.0277 | 0.0268 | 111 | 107 | 77.0-120 | | | 3.29 | 20 |
| Hexachloro-1,3-butadiene | 0.0250 | 0.0325 | 0.0316 | 130 | 126 | 68.0-128 | J4 | | 3.00 | 20 |
| Isopropylbenzene | 0.0250 | 0.0254 | 0.0250 | 101 | 100 | 75.0-120 | | | 1.32 | 20 |
| p-Isopropyltoluene | 0.0250 | 0.0271 | 0.0266 | 109 | 107 | 74.0-125 | | | 1.90 | 20 |
| 2-Butanone (MEK) | 0.125 | 0.111 | 0.112 | 88.4 | 89.4 | 37.0-159 | | | 1.12 | 20 |
| Methylene Chloride | 0.0250 | 0.0222 | 0.0221 | 89.0 | 88.3 | 67.0-123 | | | 0.799 | 20 |
| 4-Methyl-2-pentanone (MIBK) | 0.125 | 0.138 | 0.133 | 110 | 106 | 60.0-144 | | | 3.86 | 20 |
| Methyl tert-butyl ether | 0.0250 | 0.0233 | 0.0234 | 93.4 | 93.7 | 66.0-125 | | | 0.380 | 20 |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3304710-1 04/23/18 09:53 • (LCSD) R3304710-2 04/23/18 10:14

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 0.0250 | 0.0263 | 0.0257 | 105 | 103 | 64.0-125 | | | 2.32 | 20 |
| n-Propylbenzene | 0.0250 | 0.0254 | 0.0251 | 102 | 101 | 78.0-120 | | | 1.17 | 20 |
| Styrene | 0.0250 | 0.0250 | 0.0245 | 100 | 98.1 | 78.0-124 | | | 2.00 | 20 |
| 1,1,1,2-Tetrachloroethane | 0.0250 | 0.0288 | 0.0281 | 115 | 112 | 74.0-124 | | | 2.62 | 20 |
| 1,1,2,2-Tetrachloroethane | 0.0250 | 0.0243 | 0.0240 | 97.0 | 95.8 | 73.0-120 | | | 1.25 | 20 |
| Tetrachloroethene | 0.0250 | 0.0294 | 0.0289 | 118 | 116 | 70.0-127 | | | 1.73 | 20 |
| Toluene | 0.0250 | 0.0263 | 0.0253 | 105 | 101 | 77.0-120 | | | 3.54 | 20 |
| 1,1,2-Trichlorotrifluoroethane | 0.0250 | 0.0220 | 0.0218 | 88.1 | 87.4 | 64.0-135 | | | 0.869 | 20 |
| 1,2,3-Trichlorobenzene | 0.0250 | 0.0289 | 0.0284 | 116 | 113 | 68.0-126 | | | 1.98 | 20 |
| 1,2,4-Trichlorobenzene | 0.0250 | 0.0282 | 0.0280 | 113 | 112 | 70.0-127 | | | 0.457 | 20 |
| 1,1,1-Trichloroethane | 0.0250 | 0.0234 | 0.0238 | 93.6 | 95.2 | 69.0-125 | | | 1.69 | 20 |
| 1,1,2-Trichloroethane | 0.0250 | 0.0266 | 0.0257 | 106 | 103 | 78.0-120 | | | 3.60 | 20 |
| Trichloroethene | 0.0250 | 0.0268 | 0.0268 | 107 | 107 | 79.0-120 | | | 0.162 | 20 |
| Trichlorofluoromethane | 0.0250 | 0.0214 | 0.0216 | 85.6 | 86.6 | 59.0-136 | | | 1.09 | 20 |
| 1,2,3-Trichloropropane | 0.0250 | 0.0238 | 0.0245 | 95.2 | 97.8 | 73.0-124 | | | 2.75 | 20 |
| 1,2,3-Trimethylbenzene | 0.0250 | 0.0253 | 0.0249 | 101 | 99.6 | 76.0-120 | | | 1.51 | 20 |
| 1,2,4-Trimethylbenzene | 0.0250 | 0.0253 | 0.0254 | 101 | 101 | 75.0-120 | | | 0.116 | 20 |
| 1,3,5-Trimethylbenzene | 0.0250 | 0.0258 | 0.0254 | 103 | 102 | 75.0-120 | | | 1.65 | 20 |
| Vinyl chloride | 0.0250 | 0.0203 | 0.0203 | 81.3 | 81.1 | 63.0-134 | | | 0.215 | 20 |
| Xylenes, Total | 0.0750 | 0.0830 | 0.0816 | 111 | 109 | 77.0-120 | | | 1.70 | 20 |
| *(S) Toluene-d8* | | | | *112* | *109* | *80.0-120* | | | | |
| *(S) Dibromofluoromethane* | | | | *87.4* | *87.9* | *74.0-131* | | | | |
| *(S) 4-Bromofluorobenzene* | | | | *89.6* | *91.0* | *64.0-132* | | | | |

## L987850-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L987850-05 04/23/18 13:32 • (MS) R3304710-5 04/23/18 18:28 • (MSD) R3304710-6 04/23/18 18:49

| Analyte | Spike Amount (dry) mg/kg | Original Result (dry) mg/kg | MS Result (dry) mg/kg | MSD Result (dry) mg/kg | MS Rec. % | MSD Rec. % | Dilution | Rec. Limits % | MS Qualifier | MSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | 0.154 | ND | 0.105 | 0.101 | 53.6 | 50.9 | 1 | 10.0-160 | | | 4.01 | 36 |
| Acrylonitrile | 0.154 | ND | 0.116 | 0.111 | 75.3 | 72.0 | 1 | 14.0-160 | | | 4.50 | 33 |
| Benzene | 0.0309 | ND | 0.0159 | 0.0126 | 51.6 | 40.8 | 1 | 13.0-146 | | | 23.3 | 27 |
| Bromobenzene | 0.0309 | ND | 0.0188 | 0.0146 | 60.8 | 47.2 | 1 | 10.0-149 | | | 25.3 | 33 |
| Bromodichloromethane | 0.0309 | ND | 0.0209 | 0.0173 | 67.5 | 56.2 | 1 | 15.0-142 | | | 18.4 | 28 |
| Bromoform | 0.0309 | ND | 0.0238 | 0.0213 | 77.2 | 69.1 | 1 | 10.0-147 | | | 11.1 | 31 |
| Bromomethane | 0.0309 | ND | 0.00851 | 0.00659 | 27.6 | 21.3 | 1 | 10.0-160 | | | 25.5 | 32 |
| n-Butylbenzene | 0.0309 | ND | 0.0209 | 0.0156 | 64.4 | 47.3 | 1 | 10.0-154 | | | 29.0 | 37 |
| sec-Butylbenzene | 0.0309 | ND | 0.0210 | 0.0155 | 68.2 | 50.4 | 1 | 10.0-151 | | | 30.1 | 36 |
| tert-Butylbenzene | 0.0309 | ND | 0.0216 | 0.0161 | 69.9 | 52.1 | 1 | 10.0-152 | | | 29.3 | 35 |

## L987850-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L987850-05 04/23/18 13:32 • (MS) R3304710-5 04/23/18 18:28 • (MSD) R3304710-6 04/23/18 18:49

| Analyte | Spike Amount (dry) mg/kg | Original Result (dry) mg/kg | MS Result (dry) mg/kg | MSD Result (dry) mg/kg | MS Rec. % | MSD Rec. % | Dilution | Rec. Limits % | MS Qualifier | MSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon tetrachloride | 0.0309 | ND | 0.0155 | 0.0114 | 50.1 | 36.9 | 1 | 13.0-140 | | J3 | 30.3 | 30 |
| Chlorobenzene | 0.0309 | ND | 0.0196 | 0.0156 | 63.5 | 50.5 | 1 | 10.0-149 | | | 22.9 | 31 |
| Chlorodibromomethane | 0.0309 | ND | 0.0228 | 0.0198 | 73.9 | 64.2 | 1 | 12.0-147 | | | 14.1 | 29 |
| Chloroethane | 0.0309 | ND | 0.00969 | 0.00728 | 31.4 | 23.6 | 1 | 10.0-159 | | | 28.4 | 33 |
| Chloroform | 0.0309 | ND | 0.0188 | 0.0149 | 60.7 | 48.3 | 1 | 18.0-148 | | | 22.9 | 28 |
| Chloromethane | 0.0309 | ND | 0.00840 | 0.00621 | 27.2 | 20.1 | 1 | 10.0-146 | | J3 | 30.0 | 29 |
| 2-Chlorotoluene | 0.0309 | ND | 0.0197 | 0.0147 | 63.8 | 47.7 | 1 | 10.0-151 | | | 28.9 | 35 |
| 4-Chlorotoluene | 0.0309 | ND | 0.0180 | 0.0141 | 58.2 | 45.7 | 1 | 10.0-150 | | | 24.0 | 35 |
| 1,2-Dibromo-3-Chloropropane | 0.0309 | ND | 0.0275 | 0.0269 | 89.1 | 87.1 | 1 | 10.0-149 | | | 2.18 | 34 |
| 1,2-Dibromoethane | 0.0309 | ND | 0.0217 | 0.0192 | 70.2 | 62.3 | 1 | 14.0-145 | | | 12.0 | 28 |
| Dibromomethane | 0.0309 | ND | 0.0194 | 0.0175 | 63.0 | 56.7 | 1 | 18.0-144 | | | 10.4 | 27 |
| 1,2-Dichlorobenzene | 0.0309 | ND | 0.0200 | 0.0162 | 64.8 | 52.6 | 1 | 10.0-153 | | | 20.8 | 34 |
| 1,3-Dichlorobenzene | 0.0309 | ND | 0.0194 | 0.0152 | 63.0 | 49.2 | 1 | 10.0-150 | | | 24.5 | 35 |
| 1,4-Dichlorobenzene | 0.0309 | ND | 0.0188 | 0.0149 | 60.8 | 48.2 | 1 | 10.0-148 | | | 23.1 | 34 |
| Dichlorodifluoromethane | 0.0309 | ND | 0.0121 | 0.00869 | 39.2 | 28.1 | 1 | 10.0-160 | | J3 | 33.0 | 30 |
| 1,1-Dichloroethane | 0.0309 | ND | 0.0179 | 0.0139 | 58.0 | 45.1 | 1 | 19.0-148 | | | 25.0 | 28 |
| 1,2-Dichloroethane | 0.0309 | ND | 0.0183 | 0.0159 | 59.1 | 51.4 | 1 | 17.0-147 | | | 14.0 | 27 |
| 1,1-Dichloroethene | 0.0309 | ND | 0.0118 | 0.00894 | 38.2 | 29.0 | 1 | 10.0-150 | | | 27.5 | 31 |
| cis-1,2-Dichloroethene | 0.0309 | ND | 0.0175 | 0.0134 | 56.7 | 43.3 | 1 | 16.0-145 | | | 26.8 | 28 |
| trans-1,2-Dichloroethene | 0.0309 | ND | 0.0109 | 0.00882 | 35.5 | 28.6 | 1 | 11.0-142 | | | 21.6 | 29 |
| 1,2-Dichloropropane | 0.0309 | ND | 0.0207 | 0.0173 | 67.1 | 56.0 | 1 | 17.0-148 | | | 18.1 | 28 |
| 1,1-Dichloropropene | 0.0309 | ND | 0.0128 | 0.00933 | 41.4 | 30.2 | 1 | 10.0-150 | | J3 | 31.3 | 30 |
| 1,3-Dichloropropane | 0.0309 | ND | 0.0214 | 0.0183 | 69.4 | 59.3 | 1 | 16.0-148 | | | 15.8 | 27 |
| cis-1,3-Dichloropropene | 0.0309 | ND | 0.0190 | 0.0155 | 61.7 | 50.3 | 1 | 13.0-150 | | | 20.4 | 28 |
| trans-1,3-Dichloropropene | 0.0309 | ND | 0.0205 | 0.0176 | 66.5 | 57.1 | 1 | 10.0-152 | | | 15.3 | 29 |
| 2,2-Dichloropropane | 0.0309 | ND | 0.0173 | 0.0137 | 56.0 | 44.3 | 1 | 16.0-143 | | | 23.3 | 30 |
| Di-isopropyl ether | 0.0309 | ND | 0.0211 | 0.0168 | 68.3 | 54.5 | 1 | 16.0-149 | | | 22.4 | 28 |
| Ethylbenzene | 0.0309 | ND | 0.0207 | 0.0158 | 67.2 | 51.2 | 1 | 10.0-147 | | | 27.0 | 31 |
| Hexachloro-1,3-butadiene | 0.0309 | ND | 0.0261 | 0.0203 | 84.6 | 65.8 | 1 | 10.0-154 | | | 25.1 | 40 |
| Isopropylbenzene | 0.0309 | ND | 0.0200 | 0.0147 | 64.8 | 47.7 | 1 | 10.0-147 | | | 30.3 | 33 |
| p-Isopropyltoluene | 0.0309 | ND | 0.0217 | 0.0162 | 70.1 | 52.4 | 1 | 10.0-156 | | | 29.0 | 37 |
| 2-Butanone (MEK) | 0.154 | ND | 0.132 | 0.127 | 85.8 | 82.2 | 1 | 10.0-160 | | | 4.20 | 33 |
| Methylene Chloride | 0.0309 | ND | 0.0145 | 0.0124 | 47.1 | 40.2 | 1 | 16.0-139 | | | 15.9 | 29 |
| 4-Methyl-2-pentanone (MIBK) | 0.154 | ND | 0.158 | 0.154 | 103 | 99.5 | 1 | 12.0-160 | | | 3.05 | 32 |
| Methyl tert-butyl ether | 0.0309 | ND | 0.0230 | 0.0198 | 74.5 | 64.2 | 1 | 21.0-145 | | | 14.8 | 29 |
| Naphthalene | 0.0309 | 0.0124 | 0.0174 | 0.0160 | 16.1 | 11.6 | 1 | 10.0-153 | | | 8.21 | 36 |
| n-Propylbenzene | 0.0309 | ND | 0.0197 | 0.0146 | 63.7 | 47.4 | 1 | 10.0-151 | | | 29.4 | 34 |
| Styrene | 0.0309 | ND | 0.00416 | 0.00395 | 13.5 | 12.8 | 1 | 10.0-155 | | | 5.12 | 34 |
| 1,1,1,2-Tetrachloroethane | 0.0309 | ND | 0.0230 | 0.0191 | 74.4 | 62.0 | 1 | 10.0-147 | | | 18.1 | 30 |

## L987850-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L987850-05 04/23/18 13:32 • (MS) R3304710-5 04/23/18 18:28 • (MSD) R3304710-6 04/23/18 18:49

| Analyte | Spike Amount (dry) mg/kg | Original Result (dry) mg/kg | MS Result (dry) mg/kg | MSD Result (dry) mg/kg | MS Rec. % | MSD Rec. % | Dilution | Rec. Limits % | MS Qualifier | MSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | 0.0309 | ND | 0.0259 | 0.0236 | 83.8 | 76.5 | 1 | 10.0-155 | | | 9.05 | 31 |
| Tetrachloroethene | 0.0309 | ND | 0.0169 | 0.0122 | 54.6 | 39.6 | 1 | 10.0-144 | | | 31.9 | 32 |
| Toluene | 0.0309 | ND | 0.0202 | 0.0160 | 65.3 | 52.0 | 1 | 10.0-144 | | | 22.7 | 28 |
| 1,1,2-Trichlorotrifluoroethane | 0.0309 | ND | 0.0163 | 0.0125 | 52.6 | 40.5 | 1 | 10.0-153 | | | 26.2 | 33 |
| 1,2,3-Trichlorobenzene | 0.0309 | ND | 0.0167 | 0.0147 | 54.1 | 47.7 | 1 | 10.0-153 | | | 12.5 | 40 |
| 1,2,4-Trichlorobenzene | 0.0309 | ND | 0.0164 | 0.0136 | 53.0 | 44.2 | 1 | 10.0-156 | | | 18.1 | 40 |
| 1,1,1-Trichloroethane | 0.0309 | ND | 0.0178 | 0.0132 | 57.7 | 42.8 | 1 | 18.0-145 | | J3 | 29.7 | 29 |
| 1,1,2-Trichloroethane | 0.0309 | ND | 0.0237 | 0.0208 | 76.8 | 67.3 | 1 | 12.0-151 | | | 13.3 | 28 |
| Trichloroethene | 0.0309 | ND | 0.0180 | 0.0134 | 58.2 | 43.6 | 1 | 11.0-148 | | | 28.8 | 29 |
| Trichlorofluoromethane | 0.0309 | ND | 0.0131 | 0.00986 | 42.5 | 31.9 | 1 | 10.0-157 | | | 28.4 | 34 |
| 1,2,3-Trichloropropane | 0.0309 | ND | 0.0246 | 0.0234 | 79.8 | 75.9 | 1 | 10.0-154 | | | 4.98 | 32 |
| 1,2,3-Trimethylbenzene | 0.0309 | 0.00148 | 0.0203 | 0.0159 | 60.9 | 46.5 | 1 | 10.0-150 | | | 24.6 | 33 |
| 1,2,4-Trimethylbenzene | 0.0309 | ND | 0.0203 | 0.0157 | 62.5 | 47.6 | 1 | 10.0-151 | | | 25.4 | 34 |
| 1,3,5-Trimethylbenzene | 0.0309 | ND | 0.0201 | 0.0151 | 65.1 | 49.0 | 1 | 10.0-150 | | | 28.1 | 33 |
| Vinyl chloride | 0.0309 | ND | 0.00889 | 0.00703 | 28.8 | 22.8 | 1 | 10.0-150 | | | 23.3 | 29 |
| Xylenes, Total | 0.0926 | ND | 0.0611 | 0.0475 | 66.0 | 51.3 | 1 | 10.0-150 | | | 25.0 | 31 |
| *(S) Toluene-d8* | | | | | *103* | *103* | | *80.0-120* | | | | |
| *(S) Dibromofluoromethane* | | | | | *94.0* | *95.0* | | *74.0-131* | | | | |
| *(S) 4-Bromofluorobenzene* | | | | | *89.8* | *89.0* | | *64.0-132* | | | | |

## Method Blank (MB)

(MB) R3304502-1 04/24/18 17:41

| Analyte | MB Result mg/kg | MB Qualifier | MB MDL mg/kg | MB RDL mg/kg |
|---|---|---|---|---|
| Diesel Range Organics (DRO) | U | | 1.33 | 4.00 |
| Residual Range Organics (RRO) | U | | 3.33 | 10.0 |
| *(S) o-Terphenyl* | *76.8* | | | *18.0-148* |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3304502-2 04/24/18 17:58 • (LCSD) R3304502-3 04/24/18 18:14

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 25.0 | 18.5 | 18.4 | 74.1 | 73.6 | 50.0-150 | | | 0.801 | 20 |
| Residual Range Organics (RRO) | 25.0 | 19.3 | 19.4 | 77.3 | 77.5 | 50.0-150 | | | 0.163 | 20 |
| *(S) o-Terphenyl* | | | | *64.7* | *63.6* | *18.0-148* | | | | |

## Method Blank (MB)

(MB) R3304601-1 04/24/18 23:32

| Analyte | MB Result mg/kg | MB Qualifier | MB MDL mg/kg | MB RDL mg/kg |
|---|---|---|---|---|
| Aldrin | U | | 0.00135 | 0.0200 |
| Alpha BHC | U | | 0.00136 | 0.0200 |
| Beta BHC | U | | 0.00160 | 0.0200 |
| Delta BHC | U | | 0.00143 | 0.0200 |
| Gamma BHC | U | | 0.00145 | 0.0200 |
| 4,4-DDD | U | | 0.00156 | 0.0200 |
| 4,4-DDE | U | | 0.00154 | 0.0200 |
| 4,4-DDT | U | | 0.00200 | 0.0200 |
| Dieldrin | U | | 0.00152 | 0.0200 |
| Endosulfan I | U | | 0.00149 | 0.0200 |
| Endosulfan II | U | | 0.00160 | 0.0200 |
| Endosulfan sulfate | U | | 0.00151 | 0.0200 |
| Endrin | U | | 0.00157 | 0.0200 |
| Endrin aldehyde | U | | 0.00129 | 0.0200 |
| Endrin ketone | U | | 0.00165 | 0.0200 |
| Heptachlor | U | | 0.00154 | 0.0200 |
| Heptachlor epoxide | U | | 0.00161 | 0.0200 |
| Hexachlorobenzene | U | | 0.00124 | 0.0200 |
| Methoxychlor | U | | 0.00178 | 0.0200 |
| Chlordane | U | | 0.0390 | 0.200 |
| Toxaphene | U | | 0.0360 | 0.400 |
| *(S) Decachlorobiphenyl* | *67.6* | | | *10.0-148* |
| *(S) Tetrachloro-m-xylene* | *69.0* | | | *21.0-146* |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3304601-2 04/24/18 23:45 • (LCSD) R3304601-3 04/24/18 23:57

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| Aldrin | 0.0667 | 0.0423 | 0.0504 | 63.4 | 75.5 | 55.0-137 | | | 17.4 | 29 |
| Alpha BHC | 0.0667 | 0.0435 | 0.0520 | 65.2 | 78.0 | 55.0-136 | | | 17.9 | 28 |
| Beta BHC | 0.0667 | 0.0436 | 0.0521 | 65.4 | 78.1 | 53.0-133 | | | 17.8 | 28 |
| Delta BHC | 0.0667 | 0.0431 | 0.0518 | 64.6 | 77.6 | 53.0-139 | | | 18.4 | 29 |
| Gamma BHC | 0.0667 | 0.0423 | 0.0506 | 63.4 | 75.9 | 54.0-136 | | | 18.0 | 29 |
| 4,4-DDD | 0.0667 | 0.0431 | 0.0526 | 64.6 | 78.8 | 51.0-141 | | | 19.8 | 29 |
| 4,4-DDE | 0.0667 | 0.0423 | 0.0512 | 63.5 | 76.8 | 53.0-142 | | | 19.0 | 30 |
| 4,4-DDT | 0.0667 | 0.0430 | 0.0524 | 64.4 | 78.6 | 47.0-143 | | | 19.8 | 30 |
| Dieldrin | 0.0667 | 0.0426 | 0.0513 | 63.8 | 76.9 | 54.0-141 | | | 18.6 | 29 |
| Endosulfan I | 0.0667 | 0.0436 | 0.0521 | 65.3 | 78.1 | 54.0-141 | | | 17.8 | 29 |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3304601-2 04/24/18 23:45 • (LCSD) R3304601-3 04/24/18 23:57

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| Endosulfan II | 0.0667 | 0.0439 | 0.0533 | 65.9 | 79.9 | 53.0-140 | | | 19.2 | 28 |
| Endosulfan sulfate | 0.0667 | 0.0446 | 0.0546 | 66.8 | 81.8 | 52.0-141 | | | 20.2 | 29 |
| Endrin | 0.0667 | 0.0438 | 0.0526 | 65.7 | 78.9 | 52.0-137 | | | 18.2 | 29 |
| Endrin aldehyde | 0.0667 | 0.0432 | 0.0526 | 64.7 | 78.8 | 30.0-127 | | | 19.7 | 31 |
| Endrin ketone | 0.0667 | 0.0468 | 0.0570 | 70.1 | 85.4 | 51.0-139 | | | 19.7 | 28 |
| Heptachlor | 0.0667 | 0.0445 | 0.0528 | 66.7 | 79.2 | 53.0-144 | | | 17.1 | 29 |
| Heptachlor epoxide | 0.0667 | 0.0444 | 0.0532 | 66.5 | 79.7 | 54.0-137 | | | 18.0 | 28 |
| Hexachlorobenzene | 0.0667 | 0.0447 | 0.0525 | 67.0 | 78.7 | 50.0-135 | | | 16.1 | 28 |
| Methoxychlor | 0.0667 | 0.0473 | 0.0576 | 70.9 | 86.3 | 49.0-145 | | | 19.7 | 29 |
| *(S) Decachlorobiphenyl* | | | | *65.9* | *81.1* | *10.0-148* | | | | |
| *(S) Tetrachloro-m-xylene* | | | | *67.0* | *79.6* | *21.0-146* | | | | |

## L987203-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L987203-01 04/25/18 01:49 • (MS) R3304601-4 04/25/18 02:01 • (MSD) R3304601-5 04/25/18 02:13

| Analyte | Spike Amount (dry) mg/kg | Original Result (dry) mg/kg | MS Result (dry) mg/kg | MSD Result (dry) mg/kg | MS Rec. % | MSD Rec. % | Dilution | Rec. Limits % | MS Qualifier | MSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aldrin | 0.0739 | ND | 0.0644 | 0.0561 | 87.2 | 75.9 | 1 | 19.0-152 | | | 13.8 | 24 |
| Alpha BHC | 0.0739 | ND | 0.0645 | 0.0607 | 87.3 | 82.2 | 1 | 39.0-152 | | | 6.03 | 21 |
| Beta BHC | 0.0739 | ND | 0.0640 | 0.0597 | 86.7 | 80.8 | 1 | 38.0-150 | | | 6.95 | 20 |
| Delta BHC | 0.0739 | ND | 0.0630 | 0.0584 | 85.2 | 79.1 | 1 | 34.0-155 | | | 7.49 | 21 |
| Gamma BHC | 0.0739 | ND | 0.0624 | 0.0590 | 84.4 | 79.9 | 1 | 38.0-153 | | | 5.46 | 21 |
| 4,4-DDD | 0.0739 | ND | 0.0660 | 0.0577 | 89.3 | 78.1 | 1 | 22.0-160 | | | 13.4 | 25 |
| 4,4-DDE | 0.0739 | ND | 0.0644 | 0.0554 | 87.1 | 75.0 | 1 | 10.0-160 | | | 15.0 | 27 |
| 4,4-DDT | 0.0739 | ND | 0.0644 | 0.0554 | 87.2 | 74.9 | 1 | 10.0-160 | | | 15.1 | 28 |
| Dieldrin | 0.0739 | ND | 0.0632 | 0.0566 | 85.6 | 76.7 | 1 | 30.0-158 | | | 11.0 | 25 |
| Endosulfan I | 0.0739 | ND | 0.0643 | 0.0576 | 87.1 | 78.0 | 1 | 31.0-155 | | | 10.9 | 25 |
| Endosulfan II | 0.0739 | ND | 0.0649 | 0.0588 | 87.8 | 79.6 | 1 | 32.0-156 | | | 9.86 | 25 |
| Endosulfan sulfate | 0.0739 | ND | 0.0662 | 0.0602 | 89.5 | 81.5 | 1 | 31.0-158 | | | 9.40 | 24 |
| Endrin | 0.0739 | ND | 0.0660 | 0.0583 | 89.3 | 78.9 | 1 | 30.0-149 | | | 12.3 | 25 |
| Endrin aldehyde | 0.0739 | ND | 0.0655 | 0.0617 | 88.7 | 83.5 | 1 | 20.0-157 | | | 5.97 | 26 |
| Endrin ketone | 0.0739 | ND | 0.0692 | 0.0630 | 93.6 | 85.3 | 1 | 32.0-154 | | | 9.32 | 23 |
| Heptachlor | 0.0739 | ND | 0.0669 | 0.0585 | 90.6 | 79.1 | 1 | 18.0-160 | | | 13.5 | 23 |
| Heptachlor epoxide | 0.0739 | ND | 0.0673 | 0.0610 | 91.1 | 82.6 | 1 | 31.0-154 | | | 9.78 | 25 |
| Hexachlorobenzene | 0.0739 | ND | 0.0671 | 0.0610 | 90.8 | 82.5 | 1 | 26.0-146 | | | 9.53 | 21 |
| Methoxychlor | 0.0739 | ND | 0.0679 | 0.0615 | 91.8 | 83.2 | 1 | 10.0-160 | | | 9.90 | 27 |
| *(S) Decachlorobiphenyl* | | | | | *85.3* | *85.1* | | *10.0-148* | | | | |
| *(S) Tetrachloro-m-xylene* | | | | | *88.9* | *86.7* | | *21.0-146* | | | | |

## Method Blank (MB)

(MB) R3304309-1 04/24/18 07:52

| Analyte | MB Result mg/kg | MB Qualifier | MB MDL mg/kg | MB RDL mg/kg |
|---|---|---|---|---|
| PCB 1016 | U | | 0.00350 | 0.0170 |
| PCB 1221 | U | | 0.00537 | 0.0170 |
| PCB 1232 | U | | 0.00417 | 0.0170 |
| PCB 1242 | U | | 0.00318 | 0.0170 |
| PCB 1248 | U | | 0.00315 | 0.0170 |
| PCB 1254 | U | | 0.00472 | 0.0170 |
| PCB 1260 | U | | 0.00494 | 0.0170 |
| *(S) Decachlorobiphenyl* | *85.2* | | | *10.0-148* |
| *(S) Tetrachloro-m-xylene* | *78.9* | | | *21.0-146* |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3304309-2 04/24/18 08:07 • (LCSD) R3304309-3 04/24/18 08:21

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| PCB 1260 | 0.167 | 0.0881 | 0.100 | 52.8 | 60.0 | 37.0-145 | | | 12.7 | 37 |
| PCB 1016 | 0.167 | 0.0923 | 0.108 | 55.4 | 64.6 | 36.0-141 | | | 15.3 | 35 |
| *(S) Decachlorobiphenyl* | | | | *47.6* | *56.8* | *10.0-148* | | | | |
| *(S) Tetrachloro-m-xylene* | | | | *55.0* | *69.7* | *21.0-146* | | | | |

## L987203-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L987203-01 04/24/18 10:28 • (MS) R3304309-4 04/24/18 10:42 • (MSD) R3304309-5 04/24/18 10:56

| Analyte | Spike Amount (dry) mg/kg | Original Result (dry) mg/kg | MS Result (dry) mg/kg | MSD Result (dry) mg/kg | MS Rec. % | MSD Rec. % | Dilution | Rec. Limits % | MS Qualifier | MSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB 1260 | 0.185 | ND | 0.123 | 0.126 | 66.4 | 68.0 | 1 | 10.0-160 | P | | 2.46 | 31 |
| PCB 1016 | 0.185 | ND | 0.144 | 0.147 | 78.1 | 79.4 | 1 | 17.0-160 | | | 1.67 | 30 |
| *(S) Decachlorobiphenyl* | | | | | *64.2* | *67.5* | | *10.0-148* | | | | |
| *(S) Tetrachloro-m-xylene* | | | | | *82.7* | *85.6* | | *21.0-146* | | | | |

## Method Blank (MB)

(MB) R3304169-3 04/24/18 09:38

| Analyte | MB Result mg/kg | MB Qualifier | MB MDL mg/kg | MB RDL mg/kg |
|---|---|---|---|---|
| Anthracene | U | | 0.000600 | 0.00600 |
| Acenaphthene | U | | 0.000600 | 0.00600 |
| Acenaphthylene | U | | 0.000600 | 0.00600 |
| Benzo(a)anthracene | U | | 0.000600 | 0.00600 |
| Benzo(a)pyrene | U | | 0.000600 | 0.00600 |
| Benzo(b)fluoranthene | U | | 0.000600 | 0.00600 |
| Benzo(g,h,i)perylene | U | | 0.000600 | 0.00600 |
| Benzo(k)fluoranthene | U | | 0.000600 | 0.00600 |
| Chrysene | U | | 0.000600 | 0.00600 |
| Dibenz(a,h)anthracene | U | | 0.000600 | 0.00600 |
| Fluoranthene | U | | 0.000600 | 0.00600 |
| Fluorene | U | | 0.000600 | 0.00600 |
| Indeno(1,2,3-cd)pyrene | U | | 0.000600 | 0.00600 |
| Naphthalene | U | | 0.00200 | 0.0200 |
| Phenanthrene | 0.00103 | J | 0.000600 | 0.00600 |
| Pyrene | U | | 0.000600 | 0.00600 |
| 1-Methylnaphthalene | U | | 0.00200 | 0.0200 |
| 2-Methylnaphthalene | U | | 0.00200 | 0.0200 |
| 2-Chloronaphthalene | U | | 0.00200 | 0.0200 |
| *(S) Nitrobenzene-d5* | *84.7* | | | *14.0-149* |
| *(S) 2-Fluorobiphenyl* | *88.6* | | | *34.0-125* |
| *(S) p-Terphenyl-d14* | *90.9* | | | *23.0-120* |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3304169-1 04/24/18 08:55 • (LCSD) R3304169-2 04/24/18 09:17

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| Anthracene | 0.0800 | 0.0675 | 0.0725 | 84.4 | 90.6 | 50.0-125 | | | 7.13 | 20 |
| Acenaphthene | 0.0800 | 0.0581 | 0.0623 | 72.7 | 77.9 | 52.0-120 | | | 6.98 | 20 |
| Acenaphthylene | 0.0800 | 0.0609 | 0.0653 | 76.1 | 81.7 | 51.0-120 | | | 7.07 | 20 |
| Benzo(a)anthracene | 0.0800 | 0.0550 | 0.0581 | 68.7 | 72.6 | 46.0-121 | | | 5.47 | 20 |
| Benzo(a)pyrene | 0.0800 | 0.0607 | 0.0644 | 75.9 | 80.5 | 42.0-121 | | | 5.97 | 20 |
| Benzo(b)fluoranthene | 0.0800 | 0.0512 | 0.0530 | 64.0 | 66.3 | 42.0-123 | | | 3.52 | 20 |
| Benzo(g,h,i)perylene | 0.0800 | 0.0550 | 0.0610 | 68.8 | 76.2 | 43.0-128 | | | 10.2 | 20 |
| Benzo(k)fluoranthene | 0.0800 | 0.0670 | 0.0726 | 83.7 | 90.7 | 45.0-128 | | | 8.04 | 20 |
| Chrysene | 0.0800 | 0.0617 | 0.0656 | 77.1 | 82.1 | 48.0-127 | | | 6.26 | 20 |
| Dibenz(a,h)anthracene | 0.0800 | 0.0568 | 0.0633 | 71.0 | 79.1 | 43.0-132 | | | 10.9 | 20 |
| Fluoranthene | 0.0800 | 0.0615 | 0.0635 | 76.9 | 79.3 | 49.0-129 | | | 3.14 | 20 |

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3304169-1 04/24/18 08:55 • (LCSD) R3304169-2 04/24/18 09:17

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCSD Result mg/kg | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|
| Fluorene | 0.0800 | 0.0562 | 0.0596 | 70.3 | 74.5 | 50.0-120 | | | 5.76 | 20 |
| Indeno(1,2,3-cd)pyrene | 0.0800 | 0.0564 | 0.0630 | 70.5 | 78.8 | 44.0-131 | | | 11.1 | 20 |
| Naphthalene | 0.0800 | 0.0545 | 0.0581 | 68.1 | 72.6 | 50.0-120 | | | 6.42 | 20 |
| Phenanthrene | 0.0800 | 0.0525 | 0.0564 | 65.7 | 70.5 | 48.0-120 | | | 7.14 | 20 |
| Pyrene | 0.0800 | 0.0510 | 0.0556 | 63.7 | 69.6 | 48.0-135 | | | 8.77 | 20 |
| 1-Methylnaphthalene | 0.0800 | 0.0535 | 0.0587 | 66.9 | 73.4 | 52.0-122 | | | 9.27 | 20 |
| 2-Methylnaphthalene | 0.0800 | 0.0517 | 0.0566 | 64.7 | 70.7 | 52.0-120 | | | 8.95 | 20 |
| 2-Chloronaphthalene | 0.0800 | 0.0622 | 0.0667 | 77.8 | 83.4 | 50.0-120 | | | 6.94 | 20 |
| *(S) Nitrobenzene-d5* | | | | *92.7* | *97.6* | *14.0-149* | | | | |
| *(S) 2-Fluorobiphenyl* | | | | *79.4* | *82.7* | *34.0-125* | | | | |
| *(S) p-Terphenyl-d14* | | | | *69.2* | *73.0* | *23.0-120* | | | | |

## L987540-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L987540-01 04/24/18 10:44 • (MS) R3304169-4 04/24/18 11:06 • (MSD) R3304169-5 04/24/18 11:28

| Analyte | Spike Amount mg/kg | Original Result mg/kg | MS Result mg/kg | MSD Result mg/kg | MS Rec. % | MSD Rec. % | Dilution | Rec. Limits % | MS Qualifier | MSD Qualifier | RPD % | RPD Limits % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Anthracene | 0.0800 | 0.0164 | 0.102 | 0.144 | 107 | 160 | 1 | 20.0-136 | | J3 J5 | 34.3 | 24 |
| Acenaphthene | 0.0800 | 0.00809 | 0.0770 | 0.114 | 86.2 | 132 | 1 | 29.0-124 | | J3 J5 | 38.7 | 20 |
| Acenaphthylene | 0.0800 | ND | 0.0591 | 0.0653 | 70.7 | 78.5 | 1 | 35.0-120 | | | 9.98 | 20 |
| Benzo(a)anthracene | 0.0800 | 0.0158 | 0.0769 | 0.0947 | 76.5 | 98.7 | 1 | 13.0-132 | | | 20.7 | 27 |
| Benzo(a)pyrene | 0.0800 | 0.00886 | 0.0594 | 0.0648 | 63.2 | 69.9 | 1 | 14.0-138 | | | 8.63 | 27 |
| Benzo(b)fluoranthene | 0.0800 | 0.0606 | 0.0991 | 0.102 | 48.1 | 52.1 | 1 | 10.0-129 | | | 3.17 | 31 |
| Benzo(g,h,i)perylene | 0.0800 | 0.0115 | 0.0549 | 0.0545 | 54.2 | 53.7 | 1 | 10.0-133 | | | 0.700 | 30 |
| Benzo(k)fluoranthene | 0.0800 | 0.0143 | 0.0632 | 0.0605 | 61.1 | 57.7 | 1 | 15.0-131 | | | 4.39 | 27 |
| Chrysene | 0.0800 | 0.0688 | 0.103 | 0.126 | 42.6 | 71.9 | 1 | 15.0-137 | | | 20.5 | 25 |
| Dibenz(a,h)anthracene | 0.0800 | ND | 0.0504 | 0.0530 | 58.1 | 61.4 | 1 | 15.0-132 | | | 5.03 | 27 |
| Fluoranthene | 0.0800 | 0.0832 | 0.133 | 0.182 | 62.5 | 124 | 1 | 13.0-139 | | J3 | 31.0 | 28 |
| Fluorene | 0.0800 | 0.0161 | 0.108 | 0.182 | 115 | 207 | 1 | 27.0-122 | | J3 J5 | 50.6 | 22 |
| Indeno(1,2,3-cd)pyrene | 0.0800 | 0.00981 | 0.0550 | 0.0561 | 56.4 | 57.9 | 1 | 11.0-133 | | | 2.10 | 29 |
| Naphthalene | 0.0800 | 0.147 | 0.284 | 0.486 | 170 | 423 | 1 | 18.0-136 | J5 | J3 J5 | 52.6 | 21 |
| Phenanthrene | 0.0800 | 0.0525 | 0.222 | 0.409 | 211 | 446 | 1 | 15.0-133 | J5 | J3 J5 | 59.6 | 25 |
| Pyrene | 0.0800 | 0.0504 | 0.112 | 0.159 | 77.0 | 135 | 1 | 11.0-146 | | J3 | 34.5 | 29 |
| 1-Methylnaphthalene | 0.0800 | 0.0810 | 0.236 | 0.463 | 193 | 478 | 1 | 24.0-137 | J5 | J3 J5 | 65.1 | 22 |
| 2-Methylnaphthalene | 0.0800 | 0.0911 | 0.263 | 0.517 | 215 | 532 | 1 | 23.0-136 | J5 | J3 J5 | 65.0 | 22 |
| 2-Chloronaphthalene | 0.0800 | ND | 0.0630 | 0.0769 | 78.8 | 96.2 | 1 | 36.0-120 | | | 19.9 | 20 |
| *(S) Nitrobenzene-d5* | | | | | *76.1* | *77.3* | | *14.0-149* | | | | |
| *(S) 2-Fluorobiphenyl* | | | | | *66.8* | *67.6* | | *34.0-125* | | | | |
| *(S) p-Terphenyl-d14* | | | | | *66.4* | *74.2* | | *23.0-120* | | | | |

## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

## Abbreviations and Definitions

| | |
|---|---|
| (dry) | Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils]. |
| MDL | Method Detection Limit. |
| MDL (dry) | Method Detection Limit. |
| RDL | Reported Detection Limit. |
| RDL (dry) | Reported Detection Limit. |
| Rec. | Recovery. |
| RPD | Relative Percent Difference. |
| SDG | Sample Delivery Group. |
| (S) | Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media. |
| U | Not detected at the Reporting Limit (or MDL where applicable). |
| Analyte | The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported. |
| Dilution | If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor. |
| Limits | These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges. |
| Original Sample | The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG. |
| Qualifier | This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable. |
| Result | The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte. |
| Case Narrative (Cn) | A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report. |
| Quality Control Summary (Qc) | This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material. |
| Sample Chain of Custody (Sc) | This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis. |
| Sample Results (Sr) | This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported. |
| Sample Summary (Ss) | This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis. |

| Qualifier | Description |
|---|---|
| B | The same analyte is found in the associated blank. |
| E | The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL). |
| J | The identification of the analyte is acceptable; the reported value is an estimate. |
| J0 | J0: Calibration verification outside of acceptance limits. Result is estimated. |
| J3 | The associated batch QC was outside the established quality control range for precision. |
| J4 | The associated batch QC was outside the established quality control range for accuracy. |
| J5 | The sample matrix interfered with the ability to make any accurate determination; spike value is high. |
| J6 | The sample matrix interfered with the ability to make any accurate determination; spike value is low. |
| P | RPD between the primary and confirmatory analysis exceeded 40%. |
| V | The sample concentration is too high to evaluate accurate spike recoveries. |

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

## State Accreditations

| | | | |
|---|---|---|---|
| Alabama | 40660 | Nebraska | NE-OS-15-05 |
| Alaska | 17-026 | Nevada | TN-03-2002-34 |
| Arizona | AZ0612 | New Hampshire | 2975 |
| Arkansas | 88-0469 | New Jersey–NELAP | TN002 |
| California | 2932 | New Mexico [1] | n/a |
| Colorado | TN00003 | New York | 11742 |
| Connecticut | PH-0197 | North Carolina | Env375 |
| Florida | E87487 | North Carolina [1] | DW21704 |
| Georgia | NELAP | North Carolina [3] | 41 |
| Georgia [1] | 923 | North Dakota | R-140 |
| Idaho | TN00003 | Ohio–VAP | CL0069 |
| Illinois | 200008 | Oklahoma | 9915 |
| Indiana | C-TN-01 | Oregon | TN200002 |
| Iowa | 364 | Pennsylvania | 68-02979 |
| Kansas | E-10277 | Rhode Island | LAO00356 |
| Kentucky [1 6] | 90010 | South Carolina | 84004 |
| Kentucky [2] | 16 | South Dakota | n/a |
| Louisiana | AI30792 | Tennessee [1 4] | 2006 |
| Louisiana [1] | LA180010 | Texas | T 104704245-17-14 |
| Maine | TN0002 | Texas [5] | LAB0152 |
| Maryland | 324 | Utah | TN00003 |
| Massachusetts | M-TN003 | Vermont | VT2006 |
| Michigan | 9958 | Virginia | 460132 |
| Minnesota | 047-999-395 | Washington | C847 |
| Mississippi | TN00003 | West Virginia | 233 |
| Missouri | 340 | Wisconsin | 9980939910 |
| Montana | CERT0086 | Wyoming | A2LA |

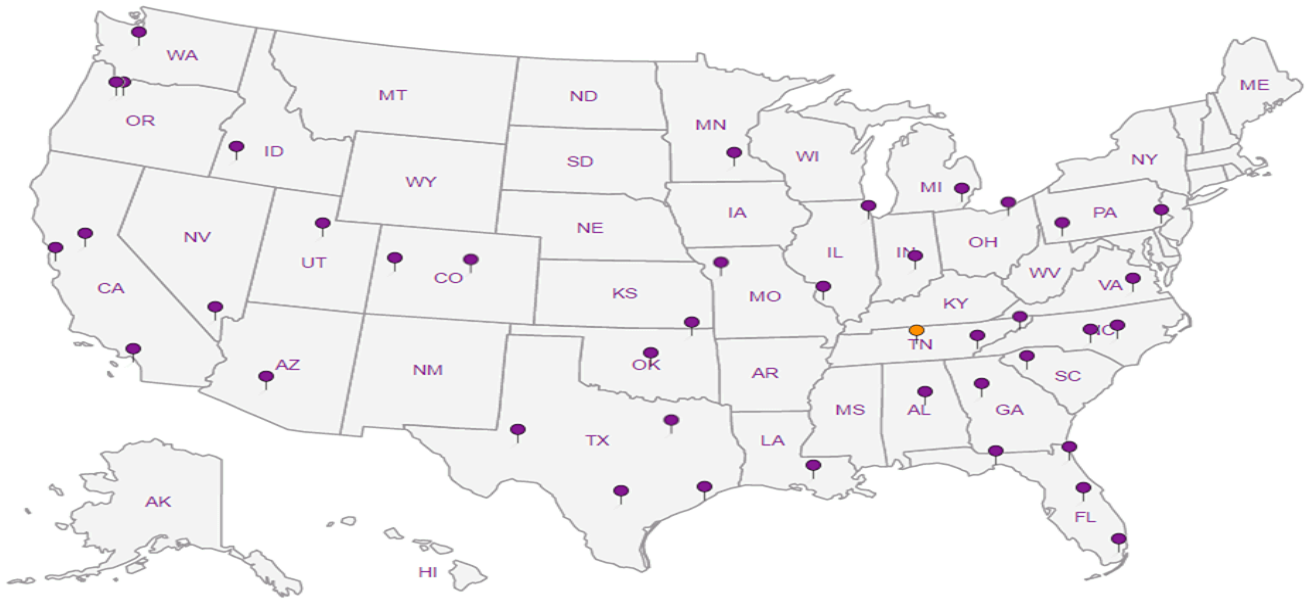
## Third Party Federal Accreditations

| | | | |
|---|---|---|---|
| A2LA – ISO 17025 | 1461.01 | AIHA-LAP,LLC EMLAP | 100789 |
| A2LA – ISO 17025 [5] | 1461.02 | DOD | 1461.01 |
| Canada | 1461.01 | USDA | P330-15-00234 |
| EPA–Crypto | TN00003 | | |

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

## Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



**BergerABAM** 210 E 13th St. Suite 300
~~1111 Main Street. Suite 300~~
**Vancouver, WA. 98660**

Billing Information: 210 E 13th St. Suite 300
**BergerABAM**
~~1111 Main Street. Suite 300~~
**Vancouver, WA. 98660**

Pres Chk

Report to: **Amber Roesler**

Email To: **amber.roesler@abam.com**

Project Description: **Fort Vancouver Regional Library**

City/State Collected: **Ridgefield, WA**

Phone: **503-679-3656**
Fax:

Client Project # **A18.0133.01**

Lab Project # **BERABAMVWA**

Collected by (print): **AllisonKinney**

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

**Rush?** (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day X 10 Day (Rad Only)
___ Three Day

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

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E185
Acctnum: **BERABAMVWA**
Template:
Prelogin:
TSR:
PB:
Shipped Via:

| Sample ID | Comp/Grab | Matrix * | Depth | Date | Time | No. of Cntrs | VOCs by EPA Method 5035 | VOCs by EPA Method 8260 | Remarks | Sample # (lab only) |
|---|---|---|---|---|---|---|---|---|---|---|
| DP-1 | grab | GW | - | 4.19.18 | 0920 | 3 | | X | | -01 |
| DP-2 | grab | GW | | 4.19.18 | 1005 | 3 | | X | | -02 |
| DP-3 | grab | GW | | 4.19.18 | 1040 | 3 | | X | | -03 |
| DP-4 | grab | GW | | 4.19.18 | 1110 | 3 | | X | | -04 |
| DP-5 | grab | GW | | 4.19.18 | 1140 | 3 | | X | | -05 |
| DP-6 | grab | GW | | 4.19.18 | 1210 | 3 | | X | | -06 |
| DP-1 (7-8) | grab | S | 7.5' | 4.19.18 | 0920 | 5 | X | | | -07 |
| DP-2 (7-8) | grab | S | 7.5 | 4.1918 | 1005 | 5 | X | | | -08 |
| DP-3 (7-8) | grab | S | 7.5' | 4.19.18 | 1040 | 5 | X | | | -09 |
| DP-4 (7-8) | grab | S | 7.5' | 4.19.18 | 1110 | 5 | X | | | -10 |

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

**Remarks:**

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier __ _____

Tracking # 4196 3258 9417

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

| Relinquished by : (Signature) | Date: | Time: | Received by: (Signature) | Trip Blank Received: (Yes) / No HCL / MeoH TBR | |
|---|---|---|---|---|---|
| | 4.19.18 | 1450 | | | |
| Relinquished by : (Signature) | Date: | Time: | Received by: (Signature) | Temp: 1.3 °C | Bottles Received: 48HTD |
| | | | | | If preservation required by Login: Date/Time |
| Relinquished by : (Signature) | Date: | Time: | Received for lab by: (Signature) | Date: 4/20/18 | Time: 845 |
| | | | | Hold: | Condition: NCF / OK |

BergerABAM
210 E 13th Street Suite 300
VAncouver WA 98660

Alternate billing information:
BergerABAM
210 E 13th Street Suite 300
VAncouver WA 98660

Report to: Amber Roesler
Email to: amber.roesler@abam.com

Project Description: Fort Vancouver Regional Library
City/State Collected: Ridgefield, WA
Phone: 503-679-3656
FAX:
Client Project #: A18.0133.01
ESC Key: BERABAMVWA
Collected by: Allison Kinney
Site/Facility ID#:
P.O.#:
Collected by (signature):
Packed on Ice N Y X

Rush? ( Lab MUST Be Notified )
___ Same Day.....200%
___ Next Day.....100%
___ ~~Two Day~~.....50%
10 DAY (RADON)

Date Results Needed:
Email? __No ✓Yes
FAX? __No __Yes

Analysis/Container/Preservative

| Sample ID | Comp/Grab | Matrix* | Depth | Date | Time | No. of Cntrs | VOCs by EPA Method 5035 | VOCs by EPA Method 8260 | Remarks/Contaminant | Sample # (lab only) |
|---|---|---|---|---|---|---|---|---|---|---|
| DP-5 (7-8) | grab | S | 7.5' | 4.19.18 | 1140 | 5 | X | | | -11 |
| DP 6 (6-7) | grab | S | 7' | 4-19-18 | 1210 | 5 | X | | | -12 |

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Chain of Custody Page ___ of ___

Prepared by:

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Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)
Template/Prelogin
Shipped Via: L987549

| Relinquished by: (Signature) | Date: | Time: | Received by: (Signature) |
|---|---|---|---|
| | 4.19.18 | 1450 | |
| Relinquished by: (Signature) | Date: | Time: | Received by: (Signature) |
| | | | |
| Relinquished by: (Signature) | Date: | Time: | Received for lab by: (Signature) |
| | | | |

Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ _____
Temp: 1.3 @ 50
Bottles Received: 4987179
Condition: (lab use only) OK
Date: 4/20/18
Time: 845
pH Checked:
NCF:

**Matt Shacklock**

**From:** Brian Ford
**Sent:** Friday, April 20, 2018 6:58 PM
**To:** Login; Brian Ford
**Subject:** L987549 *BERABAMVWA* update analyses

(-07) add NWTPHGX
(-08 to -12) delete all analyses.
(-07 to -12) Composite all soil samples and analyze for NWTPHDXNOSGT, SV8270PAHSIMD, MRCRA8, SV8081/8082.

Add this email to the COC

Thanks,

Brian Ford
*Technical Service Representative*
**ESC Lab Sciences**-a subsidiary of Pace Analytical
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615.773.9772
bford@esclabsciences.com | www.esclabsciences.com