ZipperGeo
Geoprofessional Consultants

February 13, 2019

Mill Creek Crossing LLC
22833 Bothell Everett Highway, Suite 207
Bothell, Washington 98021

Attn: Mr. Nicholas Echelbarger

Re: January 2019 Groundwater Monitoring Report – Former Prime Cleaners
18001 Bothell Everett Highway
Bothell, Snohomish County, Washington
ZGA Project No. 1001.25
VCP #NW2571

Dear Mr. Echelbarger:

Zipper Geo Associates, LLC (ZGA) is pleased to submit this Groundwater Monitoring Report for the above referenced site. This investigation was performed in general accordance with ZGA's Proposal No. P14297R, dated July 2, 2015 and includes results for sampling events completed in January 2019.

We appreciate the opportunity to perform these services for Mill Creek Crossing LLC. Please contact the undersigned at (425) 582-9928 if you have questions regarding the information provided in the report.

Sincerely,
**Zipper Geo Associates, LLC**

Kaelin Newman, GIT
Staff Geologist

State of Washington
Engineering Geologist
1221
Licensed Geologist
Jon Marion Einarsen

Jon Einarsen, LG
Principal

Attachments: Appendix A – Figures
Appendix B – Laboratory Reports

## Introduction

A dual-phase extraction (DPE) system has been installed at the Site to treat soil and groundwater that has been impacted by tetrachloroethylene (PCE) due to historical use of two adjoining tenant spaces for dry cleaning activities. The DPE system was first started on February 1, 2017. After troubleshooting several electrical and mechanical issues that were causing the system to automatically shut down, the system ran more or less continuously from June of 2017, with periodic shutdowns for maintenance and groundwater sampling, until February of 2018. At that time the system was shut down to accommodate tenant improvements to the former Prime Cleaners tenant space (being converted to a restaurant), which included improvements to the DPE groundwater effluent plumbing system. Upon completion of their inspection of tenant improvements, the Alderwood Water and Wastewater District informed ZGA that a permit with that entity was required. ZGA prepared the documentation, acquired the permit, and the system was restarted in October 2018. The system has run more or less continuously since that time.

This groundwater monitoring report presents a summary of a groundwater sampling event completed in January 2019, which is the fourth sampling event since system startup. The scope of the monitoring study is to sample 10 groundwater wells located proximal to the former dry cleaning facilities on the southwest part of the Mill Creek Crossing Retail Center. Results from the monitoring study are used to assess trends in concentrations of volatile organic compounds (VOC), particularly tetrachloroethylene (PCE), and its degradational products trichloroethylene (TCE), 1,1-dichlorethene, cis-1,2-dichloroethylene (cis-1,2-DCE), and trans-1,2-dichloroethylene (trans-1,2-DCE), and vinyl chloride. 1,1-dichlorethene and the end-member degradational product vinyl chloride have never been detected at the Site.

**Table 1. Project Information**

| | |
|---|---|
| **Site Name** | Former Prime Cleaners |
| **Site Location/Address** | 18001 Bothell-Everett Highway |
| **VCP #** | NW2571 |
| **Sampling Schedule** | Quarterly |
| **Sampling Dates (this report)** | January 14-15, 2019 |
| **Wells Sounded** | MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10 |
| **Wells Sampled** | MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10 |
| **Next Sampling Event** | April 2019 |

## Groundwater Flow

Ten dedicated groundwater monitoring wells are present on or adjoining the Site (MW-1 through MW-10). We measured depth to groundwater in each well on January 14, 2019. Depth to groundwater was measured in relation to the north side of the PVC casing of each well. Generally, we observed a southerly trend to groundwater flow, consistent with previous sampling events. Relative groundwater elevations measured during previous sampling events and the event discussed in this report are presented in Table 2. A groundwater contour map for the January 2019 sampling event is attached in as Figure 1.

**Table 2. Groundwater Elevations**

| Well ID | Relative Casing Elevation (ft.) | Date of Measurement | Depth to Groundwater (ft.) | Relative Groundwater Elevation (ft.) |
|---|---|---|---|---|
| MW-1 | 296.31 | 08-25-2010 | 25.22 | 271.09 |
| | | 05-09-2011 | 21.18 | 275.13 |
| | | 05-23-2012 | 22.73 | 273.58 |
| | | 03-05-2014 | 23.95 | 272.36 |
| | | 01-09-2017 | 22.85 | 273.46 |
| | | 08-17-2017 | 24.87 | 271.44 |
| | | 11-14-2017 | 24.66 | 271.65 |
| | | 02-13-2018 | 21.65 | 274.66 |
| | | 01-14-2019 | 23.78 | 272.53 |
| MW-2 | 296.47 | 08-25-2010 | 25.58 | 270.89 |
| | | 05-09-2011 | 21.61 | 274.86 |
| | | 05-23-2012 | 22.97 | 273.50 |
| | | 03-05-2014 | 24.28 | 272.19 |
| | | 01-09-2017 | 23.14 | 273.33 |
| | | 08-17-2017 | 25.57 | 270.90 |
| | | 11-14-2017 | 25.15 | 271.32 |
| | | 02-13-2018 | 22.00 | 274.47 |
| | | 01-14-2019 | 24.05 | 272.42 |
| MW-3 | 296.96 | 08-25-2010 | 26.17 | 270.79 |
| | | 05-09-2011 | 22.21 | 274.75 |
| | | 05-23-2012 | 23.49 | 273.47 |
| | | 03-05-2014 | 24.88 | 272.08 |
| | | 01-09-2017 | 23.66 | 273.30 |
| | | 08-17-2017 | 26.10 | 270.86 |
| | | 11-14-2017 | 25.69 | 271.27 |
| | | 02-13-2018 | 22.45 | 274.51 |
| | | 01-14-2019 | 24.53 | 272.43 |
| MW-4 | 296.56 | 08-25-2010 | 25.76 | 270.80 |
| | | 05-09-2011 | 21.77 | 274.79 |
| | | 05-23-2012 | 23.10 | 273.46 |
| | | 03-05-2014 | 24.47 | 272.09 |
| | | 01-09-2017 | 23.21 | 273.35 |
| | | 08-17-2017 | 25.67 | 270.89 |
| | | 11-14-2017 | 25.32 | 271.24 |
| | | 02-13-2018 | 22.10 | 274.46 |
| | | 01-14-2019 | 24.16 | 272.40 |
| MW-5 | 289.85 | 08-25-2010 | 18.71 | 271.14 |
| | | 05-09-2011 | 14.96 | 274.89 |
| | | 05-23-2012 | 16.18 | 273.67 |
| | | 03-05-2014 | 17.49 | 272.36 |
| | | 01-09-2017 | 17.36 | 272.49 |
| | | 08-17-2017 | 18.71 | 271.14 |
| | | 11-14-2017 | 18.51 | 271.34 |
| | | 02-13-2018 | 15.52 | 274.33 |
| | | 01-14-2019 | 17.59 | 272.26 |

| Well ID | Relative Casing Elevation (ft.) | Date of Measurement | Depth to Groundwater (ft.) | Relative Groundwater Elevation (ft.) |
|---|---|---|---|---|
| MW-6 | 289.94 | 08-25-2010 | 18.91 | 271.03 |
| | | 05-09-2011 | 15.06 | 274.88 |
| | | 05-23-2012 | 16.30 | 273.64 |
| | | 03-05-2014 | 17.54 | 272.40 |
| | | 01-09-2017 | 16.44 | 273.50 |
| | | 08-17-2017 | 18.81 | 271.13 |
| | | 11-14-2017 | 18.71 | 271.23 |
| | | 02-13-2018 | 15.53 | 274.41 |
| | | 01-14-2019 | 17.64 | 272.30 |
| MW-7 | 289.72 | 08-25-2010 | 19.14 | 270.58 |
| | | 05-09-2011 | 15.22 | 274.50 |
| | | 05-23-2012 | 16.41 | 273.31 |
| | | 03-05-2014 | 17.85 | 271.87 |
| | | 01-09-2017 | 16.61 | 273.11 |
| | | 08-17-2017 | 19.11 | 270.61 |
| | | 11-14-2017 | 18.68 | 271.04 |
| | | 02-13-2018 | 15.51 | 274.21 |
| | | 01-14-2019 | 17.52 | 272.20 |
| MW-8 | 290.56 | 08-25-2010 | Not Installed | |
| | | 05-09-2011 | 16.02 | 274.54 |
| | | 05-23-2012 | 17.21 | 273.35 |
| | | 03-05-2014 | 18.69 | 271.87 |
| | | 01-09-2017 | 17.47 | 273.09 |
| | | 08-17-2017 | 19.91 | 270.65 |
| | | 11-14-2017 | 19.46 | 271.10 |
| | | 02-13-2018 | 16.30 | 274.26 |
| | | 01-14-2019 | 18.30 | 272.26 |
| MW-9 | 298.90 | 08-25-2010 | Not Installed | |
| | | 05-09-2011 | | |
| | | 05-23-2012 | | |
| | | 03-05-2014 | 26.30 | 272.60 |
| | | 01-09-2017 | 25.10 | 273.80 |
| | | 08-17-2017 | 27.55 | 271.35 |
| | | 11-14-2017 | 27.52 | 271.38 |
| | | 02-13-2018 | 24.35 | 274.55 |
| | | 01-14-2019 | 26.43 | 272.47 |
| MW-10 | 297.49 | 08-25-2010 | Not Installed | |
| | | 05-09-2011 | | |
| | | 05-23-2012 | | |
| | | 03-05-2014 | 25.19 | 272.30 |
| | | 01-12-2017 | 24.17 | 273.32 |
| | | 08-18-2017 | 26.21 | 271.28 |
| | | 11-14-2017 | 25.91 | 271.58 |
| | | 02-13-2018 | 22.85 | 274.64 |
| | | 01-14-2019 | 24.94 | 272.55 |

**Groundwater Sampling and Analysis**

The DPE system was shut down on January 11, 2019 (a groundwater effluent sample was collected at that time) and groundwater was sampled by ZGA on January 14 to January 15, 2019. Each groundwater monitoring well was purged using a portable bladder pump equipped with a disposable bladder and dedicated tubing. The pump was lowered gently into the water column to a depth that corresponded with the highest concentration of PCE observed in that well in soil during the remedial investigation (ZGA Project No. 1001.22). If no PCE was measured in soil in a well, the pump was set at the mid-point of the screen. Flow rates were maintained at approximately 0.1 to 0.3 liters per minute. During the purging process, groundwater quality parameters Including temperature, electrical conductivity (EC), pH, turbidity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured at regular Intervals using a Horiba U-22 water-quality meter equipped with a flow cell. Purging at a given well was considered complete when: DO and turbidity were within +/- 10% variance; pH was within +/- 0.1 variance; EC was with +/- 3% variance; and ORP was within +/- 10 mV. All non-disposable pump components were decontaminated after sampling by rinsing with potable water, scrubbing in a solution of Alconox™ and potable water, and a final rinse with distilled water. Purge water and decontamination water were stored in a sealed, labeled 50-gallon drum at the Site and are awaiting classification and off-site disposal.

Groundwater samples were collected after parameter stabilization into laboratory supplied three glass 40-mL VOA vials preserved with hydrochloric acid. Sample containers were labeled with the well ID, the project name, the project number, the date, and the time of collection. Sample containers were immediately stored in a chilled cooler and were later transferred to a dedicated refrigerator in our office. Sample containers were transported to Field Environmental Instruments (FEI) in Woodinville in a chilled cooler under chain of custody procedures. FEI functioned as an intermediary to the analytical laboratory: Pace Analytical (formerly Environmental Science Corporation), a Washington State accredited laboratory. All samples were analyzed by Pace at their central laboratory, located in Tennessee.

The analytical results are summarized in Table 3, and are compared to cleanup levels defined in the Model Toxics Control Act (WAC 173-340).

**Groundwater Sampling Analytical Results (January 2019)**

The following results were drawn from the analysis of 10 groundwater samples. The executed chain-of-custody forms and laboratory analytical certificates are provided in Appendix B.

- PCE was detected at concentrations that exceeded the applicable cleanup level (5 µg/L) in two wells: MW-4 (10.7 ug/L and duplicate 10.6 µg/L), and MW-8 (12.1 µg/L).
- PCE was detected at concentrations above the laboratory reporting limit (RDL) but below the applicable cleanup level in five wells: MW-3 (04.44 µg/L), MW-6 (2.04 µg/L), and MW-7 (3.88 µg/L).
- PCE was not detected above the RDL in five wells: MW-1, MW-2, MW-5, MW-9, and MW-10.

Chloroform was reported at concentrations of 4.82 µg/L (MW-1), 2.08 µg/L (MW-7), and 2.04 ug/L (MW-10) which exceed the MTCA Method B cleanup level (1.41 µg/L). Chloroform was reported above the RDL but below the cleanup level in MW-8 and MW-9. No other VOC were reported above laboratory RDLs.

Chloroform and bromodichloromethane (which has been previously detected at the Site) are disinfection by-products commonly produced during the chlorination of drinking water and wastewater (Ivahnenko

and Zogorski, 2006; Centers for Disease Control[1]). Potable water to the Site and vicinity is provided by the Alderwood Water and Waste Water District (AWWD). According to the 2017 AWWD Water Quality Report (the most recent report available), the average concentration of chloroform and bromodichloromethane measured in the public water supply was 38.7 µg/L and 1.8 µg/L. Based on these results, the presence of chloroform and bromodichloromethane in groundwater at the Site is likely derived from leaky public water supply piping and irrigation.

**Table 3. Groundwater Analytical Results**

| Monitoring Well | Date | Volatile Organic Compounds (µg/L) | | | |
|---|---|---|---|---|---|
| | | PCE | TCE | Cis-1,2-DCE | Trans-1,2-DCE |
| MW-1 | 06-17-09 | **12** | ND<1 | 4.8 | ND<1 |
| | 08-10-10 | ND<1 | **3.2** | **1.4** | ND<1 |
| | 05-10-11 | **1.3** | ND<1 | ND<1 | ND<1 |
| | 05-23-12 | ND<2 | ND<2 | ND<2 | ND<2 |
| | 03-05-14 | ND<2 | ND<2 | ND<2 | ND<2 |
| | 01-11-17 | **0.508** | ND<1 | ND<1 | ND<1 |
| | 08-18-17 | **0.431** | ND<1 | ND<1 | ND<1 |
| | 11-15-17 | **0.231** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 02-13-18 | **0.300** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-14-19 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| MW-2 | 06-16-09 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 08-12-10 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 05-10-11 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 05-24-12 | ND<2 | ND<2 | ND<2 | ND<2 |
| | 03-05-14 | ND<2 | ND<2 | ND<2 | ND<2 |
| | 01-11-17 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 08-17-17 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 11-14-17 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| | 02-13-18 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-14-19 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| MW-3 | 06-17-09 | **6.6** | ND<1 | ND<1 | ND<1 |
| | 08-12-10 | **6.4** | ND<1 | ND<1 | ND<1 |
| | 05-10-11 | **9.3** | ND<1 | ND<1 | ND<1 |
| | 05-24-12 | **15** | ND<2 | ND<2 | ND<2 |
| | 03-07-14 | **5.6** | ND<2 | ND<2 | ND<2 |
| | 01-12-17 | **9.28** | ND<1 | ND<1 | ND<1 |
| | 08-21-17 | **2.81** | ND<1 | ND<1 | ND<1 |
| | 11-16-17 | **4.96** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 02-14-18 | **6.78** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-15-19 | **4.44** | ND<0.5 | ND<0.5 | ND<0.5 |

[1] https://www.atsdr.cdc.gov/phs/phs.asp?id=706&tid=127

| Monitoring Well | Date | Volatile Organic Compounds (µg/L) | | | |
|---|---|---|---|---|---|
| | | PCE | TCE | Cis-1,2-DCE | Trans-1,2-DCE |
| MW-4 | 10-31-07 | **45** | ND<1 | ND<1 | ND<1 |
| | 06-16-09 | **170** | ND<1 | ND<1 | ND<1 |
| | 08-12-10 | **140** | ND<1 | ND<1 | ND<1 |
| | 05-10-11 | **110** | ND<1 | ND<1 | ND<1 |
| | 05-24-12 | **140** | ND<2 | ND<2 | ND<2 |
| | 03-07-14 | **44** | ND<2 | ND<2 | ND<2 |
| | 01-13-17 | **96.1** | ND<1 | ND<1 | ND<1 |
| | 01-13-17 DUP | **95.8** | ND<1 | ND<1 | ND<1 |
| | 08-21-17 | **76.5** | ND<1 | ND<1 | ND<1 |
| | 11-16-17 | **50.8** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 11-16-17 DUP | **56.9** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 02-14-18 | **28.5** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-15-19 | **10.7** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-15-19 DUP | **10.6** | ND<0.5 | ND<0.5 | ND<0.5 |
| MW-5 | 08-10-10 | **0.61** | ND<1 | ND<1 | ND<1 |
| | 05-09-11 | **0.60** | ND<1 | ND<1 | ND<1 |
| | 03-06-14 | ND<2 | ND<2 | ND<2 | ND<2 |
| | 01-12-17 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 08-18-17 | **0.281** | ND<1 | ND<1 | ND<1 |
| | 11-15-17 | **0.259** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 02-13-18 | **0.220** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-15-19 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| MW-6 | 08-10-10 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 05-09-11 | **2.2** | ND<1 | ND<1 | ND<1 |
| | 03-06-14 | **4.7** | ND<2 | ND<2 | ND<2 |
| | 01-12-17 | **1.07** | ND<1 | ND<1 | ND<1 |
| | 08-21-17 | **0.674** | ND<1 | ND<1 | ND<1 |
| | 11-15-17 | **2.37** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 02-14-18 | **3.21** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-15-19 | **2.04** | ND<0.5 | ND<0.5 | ND<0.5 |
| MW-7 | 08-10-10 | **0.55** | ND<1 | ND<1 | ND<1 |
| | 05-09-11 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 03-06-14 | **8.0** | ND<2 | ND<2 | ND<2 |
| | 01-12-17 | **0.948** | ND<1 | ND<1 | ND<1 |
| | 08-21-17 | **1.49** | ND<1 | ND<1 | ND<1 |
| | 11-15-17 | **3.8** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 02-14-18 | **1.93** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-15-19 | **3.88** | ND<0.5 | ND<0.5 | ND<0.5 |
| MW-8 | 05-10-11 | **22** | ND<1 | ND<1 | ND<1 |
| | 05-24-12 | **36** | ND<2 | ND<2 | ND<2 |
| | 03-07-14 | **13** | ND<2 | ND<2 | ND<2 |
| | 01-13-17 | **26.4** | ND<1 | ND<1 | ND<1 |
| | 08-21-17 | **25.1** | ND<1 | ND<1 | **0.250** |
| | 11-16-17 | **19.2** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 02-14-18 | **16.1** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 02-14-18 DUP | **14.7** | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-15-19 | **12.1** | ND<0.5 | ND<0.5 | ND<0.5 |

| Monitoring Well | Date | Volatile Organic Compounds (µg/L) | | | |
|---|---|---|---|---|---|
| | | PCE | TCE | Cis-1,2-DCE | Trans-1,2-DCE |
| MW-9 | 03-05-14 | ND<2 | ND<2 | ND<2 | ND<2 |
| | 01-11-17 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 08-18-17 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 11-14-17 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| | 02-13-18 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-14-19 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| MW-10 | 03-06-14 | ND<2 | ND<2 | ND<2 | ND<2 |
| | 01-12-17 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 08-18-17 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 11-14-17 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| | 02-13-18 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-14-19 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| Equipment Blank | 08-12-10 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 01-13-17 | ND<1 | ND<1 | ND<1 | ND<1 |
| | 11-16-17 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| | 02-14-18 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-15-19 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| DPE Effluent | 03-08-17 | 0.748 | ND<1 | ND<1 | ND<1 |
| | 11-12-17 | 0.286 | ND<0.5 | ND<0.5 | ND<0.5 |
| | 01-11-19 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 |
| ***MTCA Cleanup Level*** | | ***5[A]*** | ***5[A]*** | ***16[B]*** | ***160[B]*** |

ug/L: micrograms per liter (parts-per-billion); ND<: Not detected above indicated laboratory reporting detection limit; Shaded values exceed MTCA Method A cleanup levels. [A]: Method A cleanup level. [B]: Method B cleanup level. Please refer to Appendix C for the complete set of analytes and analytical results for VOC.

**Indoor Air Sampling and Analysis (August 2018 and January 2019)**

***Air Sampling Narrative***

During the August 2018 sampling event, the Money Tree and Osaka Grill tenant spaces were open for businesses, and the Former Prime Cleaners was being renovated into a restaurant at the time we completed the indoor air sampling event. Both the north and south doors at the Money Tree and Former Prime Cleaners were closed. The north door was closed but the back (south) door of the Osaka Grill was open. The indoor air canister in the Money Tree tenant space was placed on a refrigerator at an elevation of about seven feet in a back room (south part of the tenant space). The indoor air canister in the Former Prime Cleaners was placed at an elevation of about five feet on a step of a stepladder in the south part of the tenant space. The indoor air canister at the Osaka Grill was placed at an elevation of about seven feet on a cooler in the dining area (central part of the tenant space). The canister for ambient outdoor air was placed on the roof of the Conex box that houses the dual-phase extraction (DPE) system in the alley south of the tenant spaces.

During the January 2019 sampling event, all three tenant spaces were open for businesses, and the Former Prime Cleaners was fully converted into a restaurant. The north and south doors at all three tenant spaces were closed. The indoor air canister in the Money Tree tenant space was placed on a refrigerator at an elevation of about seven feet in a back room (south part of the tenant space). The indoor air canister in the Former Prime Cleaners was placed at an elevation of about seven feet on a cooler in the dining area (central part of the tenant space). The indoor air canister at the Osaka Grill was placed at an elevation of about seven feet on a cooler in the dining area (central part of the tenant space). The canister for ambient outdoor air was placed on the roof of the Conex box that houses the dual-phase extraction (DPE) system in the alley south of the tenant spaces.

All four canisters were equipped with 8-hour regulators. The samples were analyzed for a subset of VOC, including tetrachloroethylene (PCE) and trichloroethylene (TCE), by Friedman & Bruya (Seattle, Washington) using the EPA TO-15 Method. The analytical results are summarized in Table 1 and the laboratory reports are attached in Appendix B. Contaminant concentrations in indoor air have been corrected for concentrations in ambient air, if applicable. The Modified Method B calculation is illustrated on Table 5.

**Table 4. Ambient and Indoor Air Analytical Results**

| Sampling Location | Date | PCE | Corrected | TCE | Corrected | EDC | Corrected |
|---|---|---|---|---|---|---|---|
| Ambient Air | 06-03-14 | <0.23 | NA | <0.18 | NA | <0.14 | NA |
| | 08-22-18 | <0.68 | NA | 0.28 | NA | **0.24** | NA |
| | 01-14-19 | <.6.8 | NA | <0.27 | NA | **0.11** | NA |
| Former Prime Cleaners | 06-03-14 | 0.51 | NA | **0.39** | NA | <0.13 | NA |
| | 08-22-18 | 0.73 | NA | <0.27 | 0.00 | <0.04 | 0.00 |
| | 01-14-19 | <6.8 | NA | <0.27 | NA | 0.12 | 0.01 |
| Money Tree | 06-03-14 | <1.1 | NA | <0.88 | NA | <0.66 | NA |
| | 08-22-18 | <0.68 | NA | 1.1 | **0.82** | 0.073 | 0.00 |
| | 01-14-19 | <6.8 | NA | <0.27 | NA | 0.11 | 0.00 |
| Osaka Grill | 06-03-14 | 0.48 | NA | 0.07 | NA | <0.28 | NA |
| | 08-22-18 | <0.68 | NA | <0.27 | 0.00 | 0.077 | 0.00 |
| | 01-14-19 | <6.8 | NA | <0.27 | NA | 0.13 | 0.02 |
| ***Default MTCA Method B Indoor Air Cleanup Level*** | | ***9.62*** | | ***0.37*** | | ***0.09*** | |
| ***Modified MTCA Method B Indoor Air Cleanup Level*** | | ***33.16*** | | ***1.28*** | | ***NC*** | |

The shaded values exceed the Default Method B cleanup level. NA, not applicable. NC, not calculated.

**Table 5. Modified Method B Air Cleanup Level (Equation 750-2)**

| Equation 750-2 for Carcinogens | | | Tetrachloroethylene | | Trichloroethylene | |
|---|---|---|---|---|---|---|
| **Parameters[1]** | | **Units** | **Default Method B[2]** | **Modified Method B[3]** | **Default Method B2** | **Modified Method B3** |
| Carcinogenic Risk | RISK | unitless | 1.00E-06 | 1.00E-06 | 1.00E-06 | 1.00E-06 |
| Average Body Weight | ABW | kg | 70 | 70 | 70 | 70 |
| Averaging Time | AT | years | 75 | 75 | 75 | 75 |
| Unit Conversion Factor | UCF | ug/mg | 1,000 | 1,000 | 1,000 | 1,000 |
| Carcinogenic Potency Factor | CPF | kg-day/mg | 9.10E-04 | 9.10E-04 | 0.0235 | 0.0235 |
| Breathing Rate | BR | $m^3$/day | 20 | 20 | 20 | 20 |
| Inhalation Adsorption Rate | ABS | unitless | 1 | 1 | 1 | 1 |
| Exposure Duration | ED | years | 30 | 30 | 30 | 30 |
| Exposure Frequency | EF | unitless | 1 | 0.29 | 1 | 0.29 |
| **Method B Air Cleanup Level** | | **ug/$m^3$** | **9.62** | **33.16** | **0.37** | **1.28** |

[1]Parameter values are derived from MTCA Equation 750-2 or the CLARC database (https://fortress.wa.gove/ecy/clarc/clarkdatatables.aspx)
[2]Default Method B cleanup level calculation using default parameters reflective of a residential setting
[3]Modified Method B cleanup level calculation using an exposure frequency reflective of a commercial setting.

Method B air cleanup level = RISK x ABW x AT x UCF / CPF x BR x ABS x ED X EF

Exposure Frequency
Default: 24 hours/day for 365 days = 8,760 hours/year
Modified: 10 hours/day for 250 days = 2,500 hours/year

Modified Exposure Frequency = 2,500/8,760 = 0.29. This value is compliant with the commercial scenario described in Ecology's Implementation Memorandum No. 21, dated June 22, 2018 (see Question No. 17 in the memorandum).

ZipperGeo
Geoprofessional Consultants

***August 2018***

PCE was not reported above the laboratory reporting limit in Ambient Air or the Money Tree and Osaka Grill tenant spaces and was reported at a concentration less than the Model Toxics Control Act (MTCA, WAC 173-340) Method B indoor air cleanup level in the Former Prime Cleaners.

TCE was reported at a concentration of 0.28 ug/$m^3$ in Ambient Air. TCE was not reported above the laboratory reporting limit in the Former Prime Cleaners and Osaka Grill tenant spaces but was reported at a concentration of 0.82 ug/$m^3$ (corrected for ambient air) in the Money Tree tenant space, which exceeds the MTCA Method B indoor air cleanup level.

***January 2019***

PCE and TCE were not reported above the laboratory reporting limit in ambient air or any of the three tenant spaces.

**Conclusions**

ZGA completed a groundwater monitoring sampling event in January 2019. Historically, PCE has exceeded cleanup levels in MW-3, MW-4 and MW-8. The concentration of PCE fell to a concentration below the cleanup level in MW-3 once again, after slightly exceeding the cleanup level in the February 2018 sampling event. The concentrations of PCE in MW-4 and MW-8 remain above cleanup levels but continue to decline. PCE in the other wells was not detected above laboratory reporting limits, or were reported in concentrations below the MTCA Method A cleanup level for PCE.

ZGA completed ambient and indoor air sampling in August 2018 and January 2019. The concentration of TCE (0.82 ug/$m^3$, corrected for ambient air) in August 2018 exceeded the Default MTCA Method B indoor air cleanup level (0.37 ug/$m^3$). Other VOC were not detected above laboratory reporting limits, or were reported in concentrations below the Default Method B cleanup levels. PCE and TCE have not exceeded the Modified Method B cleanup level during any sampling event (including pre-remediation samples collected in 2014)

VOC were not detected above laboratory reporting limits, or were reported in concentrations below applicable cleanup levels during the January 2019 sampling event. In particular, PCE and TCE were not reported above laboratory reporting limits in indoor air.

ZGA will continue to monitor the effectiveness of the DPE system by completing additional groundwater and air monitoring events on a quarterly basis going forward.

**References**

Ivahnenko, T. and Zogorski, J.S., 2006, Sources and occurrence of Chloroform and Other Trihalomethanes in Drinking-Water Supply Wells in the United States, 1986-2001, U.S. Geological Survey, Scientific Investigations Report 2006-5015.

# APPENDIX A

Figures


*LEGEND :*

| | |
|---|---|
| *MW–1* | *GROUND WATER MONITORING WELL – APPROXIMATE LOCATION AND ID* |
| *GREEN* | *PCE NOT DETECTED ABOVE THE LABORATORY METHOD REPORTING LIMIT* |
| *ORANGE* | *PCE DETECTED ABOVE THE LABORATORY METHOD REPORTING LIMIT BUT BELOW THE MTCA METHOD A CLEANUP LEVEL* |
| *RED* | *PCE DETECTED ABOVE THE MTCA METHOD A CLEANUP LEVEL* |
| *DPE-3* | *DUAL-PHASE EXTRACTION WELL – APPROXIMATE LOCATION* |
| | *INFERRED GROUNDWATER FLOW DIRECTION* |
| | *INFERRED EXTENT OF PCE IN GROUNDWATER EXCEEDING THE MTCA METHOD A CLEANUP LEVEL* |

PRIME CLEANERS
18001 Bothell Everett Highway
Bothell, Washington

GROUNDWATER MONITORING RESULTS
JANUARY 14 AND 15, 2019

DATE: JANUARY 2019 Job No. 1001.25

**Zipper Geo Associates, LLC**
19023 36th Ave. W.,Suite D
Lynnwood, WA

FIGURE 1
SHT. 1 of 1

# Appendix B

Laboratory Reports

Pace Analytical®
National Center for Testing & Innovation

# ANALYTICAL REPORT

January 23, 2019

## Zipper Geo Associates - Lynnwood, WA

| | |
|---|---|
| Sample Delivery Group: | L1062097 |
| Samples Received: | 01/17/2019 |
| Project Number: | 1001.25 |
| Description: | Prime Cleaners |

Report To: Jon Einarsen
19019 36th Ave. W.
Ste. E
Lynnwood, WA 98036

Entire Report Reviewed By: Brian Ford

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

# TABLE OF CONTENTS

## MW-1 L1062097-01 GW

Collected by: K. Newman | Collected date/time: 01/14/19 14:49 | Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 07:40 | 01/18/19 07:40 | TJJ |

## MW-2 L1062097-02 GW

Collected by: K. Newman | Collected date/time: 01/14/19 12:30 | Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 08:00 | 01/18/19 08:00 | TJJ |

## MW-3 L1062097-03 GW

Collected by: K. Newman | Collected date/time: 01/15/19 13:20 | Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 08:20 | 01/18/19 08:20 | TJJ |

## MW-4 L1062097-04 GW

Collected by: K. Newman | Collected date/time: 01/15/19 15:17 | Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 08:40 | 01/18/19 08:40 | TJJ |

## MW-5 L1062097-05 GW

Collected by: K. Newman | Collected date/time: 01/15/19 08:40 | Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 09:00 | 01/18/19 09:00 | TJJ |

## MW-6 L1062097-06 GW

Collected by: K. Newman | Collected date/time: 01/15/19 10:39 | Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 09:20 | 01/18/19 09:20 | TJJ |

## MW-7 L1062097-07 GW

Collected by: K. Newman | Collected date/time: 01/15/19 11:50 | Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 09:40 | 01/18/19 09:40 | TJJ |

## MW-8 L1062097-08 GW

Collected by: K. Newman | Collected date/time: 01/15/19 14:27 | Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 10:01 | 01/18/19 10:01 | TJJ |

## MW-9 L1062097-09 GW

Collected by: K. Newman
Collected date/time: 01/14/19 13:47
Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 10:21 | 01/18/19 10:21 | TJJ |

## MW-10 L1062097-10 GW

Collected by: K. Newman
Collected date/time: 01/14/19 10:55
Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 10:41 | 01/18/19 10:41 | TJJ |

## DUPLICATE L1062097-11 GW

Collected by: K. Newman
Collected date/time: 01/15/19 00:00
Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 11:01 | 01/18/19 11:01 | TJJ |

## EQUIPMENT BLANK L1062097-12 GW

Collected by: K. Newman
Collected date/time: 01/15/19 15:30
Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 06:59 | 01/18/19 06:59 | TJJ |

## EFFLUENT L1062097-13 GW

Collected by: K. Newman
Collected date/time: 01/11/19 15:30
Received date/time: 01/17/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst |
|---|---|---|---|---|---|
| Volatile Organic Compounds (GC/MS) by Method 8260C | WG1225175 | 1 | 01/18/19 11:21 | 01/18/19 11:21 | TJJ |

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 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
Project Manager

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 07:40 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 07:40 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Bromodichloromethane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 07:40 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 07:40 | WG1225175 |
| Chloroform | 4.82 | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 07:40 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 07:40 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 07:40 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 07:40 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 07:40 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 07:40 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 07:40 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 07:40 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 07:40 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 07:40 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 07:40 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Tetrachloroethene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 07:40 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 07:40 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 07:40 | WG1225175 |
| *(S) Toluene-d8* | *104* | | *80.0-120* | | *01/18/2019 07:40* | WG1225175 |
| *(S) Dibromofluoromethane* | *104* | | *75.0-120* | | *01/18/2019 07:40* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *99.1* | | *77.0-126* | | *01/18/2019 07:40* | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 08:00 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 08:00 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Bromodichloromethane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 08:00 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 08:00 | WG1225175 |
| Chloroform | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 08:00 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 08:00 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 08:00 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 08:00 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 08:00 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 08:00 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 08:00 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 08:00 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 08:00 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 08:00 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 08:00 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Tetrachloroethene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 08:00 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 08:00 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 08:00 | WG1225175 |
| *(S) Toluene-d8* | *106* | | *80.0-120* | | *01/18/2019 08:00* | WG1225175 |
| *(S) Dibromofluoromethane* | *105* | | *75.0-120* | | *01/18/2019 08:00* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *95.9* | | *77.0-126* | | *01/18/2019 08:00* | WG1225175 |

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

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 08:20 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 08:20 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Bromodichloromethane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 08:20 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 08:20 | WG1225175 |
| Chloroform | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 08:20 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 08:20 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 08:20 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 08:20 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 08:20 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 08:20 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 08:20 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 08:20 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 08:20 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 08:20 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 08:20 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Tetrachloroethene | 4.44 | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 08:20 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 08:20 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 08:20 | WG1225175 |
| *(S) Toluene-d8* | *107* | | *80.0-120* | | *01/18/2019 08:20* | WG1225175 |
| *(S) Dibromofluoromethane* | *103* | | *75.0-120* | | *01/18/2019 08:20* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *96.3* | | *77.0-126* | | *01/18/2019 08:20* | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 08:40 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 08:40 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Bromodichloromethane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 08:40 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 08:40 | WG1225175 |
| Chloroform | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 08:40 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 08:40 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 08:40 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 08:40 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 08:40 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 08:40 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 08:40 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 08:40 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 08:40 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 08:40 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 08:40 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Tetrachloroethene | 10.7 | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 08:40 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 08:40 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 08:40 | WG1225175 |
| *(S) Toluene-d8* | *107* | | *80.0-120* | | *01/18/2019 08:40* | WG1225175 |
| *(S) Dibromofluoromethane* | *103* | | *75.0-120* | | *01/18/2019 08:40* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *96.4* | | *77.0-126* | | *01/18/2019 08:40* | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 09:00 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 09:00 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Bromodichloromethane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 09:00 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 09:00 | WG1225175 |
| Chloroform | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 09:00 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 09:00 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 09:00 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 09:00 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 09:00 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 09:00 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 09:00 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 09:00 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 09:00 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 09:00 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 09:00 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Tetrachloroethene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 09:00 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 09:00 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 09:00 | WG1225175 |
| *(S) Toluene-d8* | *107* | | *80.0-120* | | *01/18/2019 09:00* | WG1225175 |
| *(S) Dibromofluoromethane* | *104* | | *75.0-120* | | *01/18/2019 09:00* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *97.9* | | *77.0-126* | | *01/18/2019 09:00* | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 09:20 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 09:20 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Bromodichloromethane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 09:20 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 09:20 | WG1225175 |
| Chloroform | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 09:20 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 09:20 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 09:20 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 09:20 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 09:20 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 09:20 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 09:20 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 09:20 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 09:20 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 09:20 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 09:20 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Tetrachloroethene | 2.04 | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 09:20 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 09:20 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 09:20 | WG1225175 |
| *(S) Toluene-d8* | *106* | | *80.0-120* | | *01/18/2019 09:20* | WG1225175 |
| *(S) Dibromofluoromethane* | *102* | | *75.0-120* | | *01/18/2019 09:20* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *95.8* | | *77.0-126* | | *01/18/2019 09:20* | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 09:40 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 09:40 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Bromodichloromethane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 09:40 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 09:40 | WG1225175 |
| Chloroform | 2.08 | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 09:40 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 09:40 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 09:40 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 09:40 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 09:40 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 09:40 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 09:40 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 09:40 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 09:40 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 09:40 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 09:40 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Tetrachloroethene | 3.88 | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 09:40 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 09:40 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 09:40 | WG1225175 |
| *(S) Toluene-d8* | *105* | | *80.0-120* | | *01/18/2019 09:40* | WG1225175 |
| *(S) Dibromofluoromethane* | *103* | | *75.0-120* | | *01/18/2019 09:40* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *94.0* | | *77.0-126* | | *01/18/2019 09:40* | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 10:01 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 10:01 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Bromodichloromethane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 10:01 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 10:01 | WG1225175 |
| Chloroform | 0.892 | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 10:01 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 10:01 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 10:01 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 10:01 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 10:01 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 10:01 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 10:01 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 10:01 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 10:01 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 10:01 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 10:01 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Tetrachloroethene | 12.1 | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 10:01 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 10:01 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 10:01 | WG1225175 |
| *(S) Toluene-d8* | *106* | | *80.0-120* | | *01/18/2019 10:01* | WG1225175 |
| *(S) Dibromofluoromethane* | *105* | | *75.0-120* | | *01/18/2019 10:01* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *95.1* | | *77.0-126* | | *01/18/2019 10:01* | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 10:21 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 10:21 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Bromodichloromethane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 10:21 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 10:21 | WG1225175 |
| Chloroform | 0.838 | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 10:21 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 10:21 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 10:21 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 10:21 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 10:21 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 10:21 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 10:21 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 10:21 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 10:21 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 10:21 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 10:21 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Tetrachloroethene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 10:21 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 10:21 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 10:21 | WG1225175 |
| *(S) Toluene-d8* | *104* | | *80.0-120* | | *01/18/2019 10:21* | WG1225175 |
| *(S) Dibromofluoromethane* | *103* | | *75.0-120* | | *01/18/2019 10:21* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *97.1* | | *77.0-126* | | *01/18/2019 10:21* | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 10:41 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 10:41 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Bromodichloromethane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 10:41 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 10:41 | WG1225175 |
| Chloroform | 2.04 | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 10:41 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 10:41 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 10:41 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 10:41 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 10:41 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 10:41 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 10:41 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 10:41 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 10:41 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 10:41 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 10:41 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Tetrachloroethene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 10:41 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 10:41 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 10:41 | WG1225175 |
| *(S) Toluene-d8* | *105* | | *80.0-120* | | *01/18/2019 10:41* | WG1225175 |
| *(S) Dibromofluoromethane* | *103* | | *75.0-120* | | *01/18/2019 10:41* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *94.7* | | *77.0-126* | | *01/18/2019 10:41* | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 11:01 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 11:01 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Bromodichloromethane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 11:01 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 11:01 | WG1225175 |
| Chloroform | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 11:01 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 11:01 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 11:01 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 11:01 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 11:01 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 11:01 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 11:01 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 11:01 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 11:01 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 11:01 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 11:01 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Tetrachloroethene | 10.6 | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 11:01 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 11:01 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 11:01 | WG1225175 |
| *(S) Toluene-d8* | *106* | | *80.0-120* | | *01/18/2019 11:01* | WG1225175 |
| *(S) Dibromofluoromethane* | *103* | | *75.0-120* | | *01/18/2019 11:01* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *96.4* | | *77.0-126* | | *01/18/2019 11:01* | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 06:59 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 06:59 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Bromodichloromethane | 1.62 | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 06:59 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 06:59 | WG1225175 |
| Chloroform | 26.2 | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 06:59 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 06:59 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 06:59 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 06:59 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 06:59 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 06:59 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 06:59 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 06:59 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 06:59 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 06:59 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 06:59 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |

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

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Tetrachloroethene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 06:59 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 06:59 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 06:59 | WG1225175 |
| *(S) Toluene-d8* | *107* | | *80.0-120* | | *01/18/2019 06:59* | WG1225175 |
| *(S) Dibromofluoromethane* | *101* | | *75.0-120* | | *01/18/2019 06:59* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *96.5* | | *77.0-126* | | *01/18/2019 06:59* | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | 1 | 01/18/2019 11:21 | WG1225175 |
| Acrylonitrile | ND | | 5.00 | 1 | 01/18/2019 11:21 | WG1225175 |
| Benzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Bromobenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Bromodichloromethane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Bromochloromethane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Bromoform | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Bromomethane | ND | | 2.50 | 1 | 01/18/2019 11:21 | WG1225175 |
| n-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| sec-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| tert-Butylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Carbon disulfide | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Carbon tetrachloride | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Chlorobenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Chlorodibromomethane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Chloroethane | ND | | 2.50 | 1 | 01/18/2019 11:21 | WG1225175 |
| Chloroform | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Chloromethane | ND | | 1.25 | 1 | 01/18/2019 11:21 | WG1225175 |
| 2-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 4-Chlorotoluene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,2-Dibromo-3-Chloropropane | ND | | 2.50 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,2-Dibromoethane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Dibromomethane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,2-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,3-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,4-Dichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Dichlorodifluoromethane | ND | | 2.50 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,1-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,2-Dichloroethane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,1-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| cis-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| trans-1,2-Dichloroethene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,1-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,3-Dichloropropane | ND | | 1.00 | 1 | 01/18/2019 11:21 | WG1225175 |
| cis-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| trans-1,3-Dichloropropene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| trans-1,4-Dichloro-2-butene | ND | | 5.00 | 1 | 01/18/2019 11:21 | WG1225175 |
| 2,2-Dichloropropane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Di-isopropyl ether | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Ethylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Hexachloro-1,3-butadiene | ND | | 1.00 | 1 | 01/18/2019 11:21 | WG1225175 |
| 2-Hexanone | ND | | 5.00 | 1 | 01/18/2019 11:21 | WG1225175 |
| n-Hexane | ND | | 5.00 | 1 | 01/18/2019 11:21 | WG1225175 |
| Iodomethane | ND | | 10.0 | 1 | 01/18/2019 11:21 | WG1225175 |
| Isopropylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| p-Isopropyltoluene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 2-Butanone (MEK) | ND | | 5.00 | 1 | 01/18/2019 11:21 | WG1225175 |
| Methylene Chloride | ND | | 2.50 | 1 | 01/18/2019 11:21 | WG1225175 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 5.00 | 1 | 01/18/2019 11:21 | WG1225175 |
| Methyl tert-butyl ether | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Naphthalene | ND | | 2.50 | 1 | 01/18/2019 11:21 | WG1225175 |
| n-Propylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Styrene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,1,1,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,1,2,2-Tetrachloroethane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |

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

| Analyte | Result ug/l | Qualifier | RDL ug/l | Dilution | Analysis date / time | Batch |
|---|---|---|---|---|---|---|
| 1,1,2-Trichlorotrifluoroethane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Tetrachloroethene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Toluene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,2,3-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,2,4-Trichlorobenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,1,1-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,1,2-Trichloroethane | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Trichloroethene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Trichlorofluoromethane | ND | | 2.50 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,2,3-Trichloropropane | ND | | 2.50 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,2,4-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,2,3-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| 1,3,5-Trimethylbenzene | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Vinyl acetate | ND | | 5.00 | 1 | 01/18/2019 11:21 | WG1225175 |
| Vinyl chloride | ND | | 0.500 | 1 | 01/18/2019 11:21 | WG1225175 |
| Xylenes, Total | ND | | 1.50 | 1 | 01/18/2019 11:21 | WG1225175 |
| *(S) Toluene-d8* | *104* | | *80.0-120* | | *01/18/2019 11:21* | WG1225175 |
| *(S) Dibromofluoromethane* | *105* | | *75.0-120* | | *01/18/2019 11:21* | WG1225175 |
| *(S) 4-Bromofluorobenzene* | *95.1* | | *77.0-126* | | *01/18/2019 11:21* | WG1225175 |

## Method Blank (MB)

(MB) R3377774-2 01/18/19 06:39

| 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 |
| Bromodichloromethane | U | | 0.0800 | 0.500 |
| Bromochloromethane | U | | 0.145 | 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 |
| 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 |
| trans-1,4-Dichloro-2-butene | U | | 0.257 | 5.00 |
| 2,2-Dichloropropane | U | | 0.0929 | 0.500 |
| Di-isopropyl ether | U | | 0.0924 | 0.500 |

## Method Blank (MB)

(MB) R3377774-2 01/18/19 06:39

| Analyte | MB Result ug/l | MB Qualifier | MB MDL ug/l | MB RDL ug/l |
|---|---|---|---|---|
| Ethylbenzene | U | | 0.158 | 0.500 |
| Hexachloro-1,3-butadiene | U | | 0.157 | 1.00 |
| 2-Hexanone | U | | 0.757 | 5.00 |
| n-Hexane | U | | 0.305 | 5.00 |
| Iodomethane | U | | 0.377 | 10.0 |
| 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 |
| 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 |
| 1,1,2-Trichlorotrifluoroethane | U | | 0.164 | 0.500 |
| Tetrachloroethene | U | | 0.199 | 0.500 |
| Toluene | U | | 0.412 | 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 |
| 1,2,4-Trimethylbenzene | U | | 0.123 | 0.500 |
| 1,2,3-Trimethylbenzene | U | | 0.0739 | 0.500 |
| 1,3,5-Trimethylbenzene | U | | 0.124 | 0.500 |
| Vinyl acetate | U | | 0.645 | 5.00 |
| Vinyl chloride | U | | 0.118 | 0.500 |
| Xylenes, Total | U | | 0.316 | 1.50 |
| *(S) Toluene-d8* | *106* | | | *80.0-120* |
| *(S) Dibromofluoromethane* | *105* | | | *75.0-120* |
| *(S) 4-Bromofluorobenzene* | *99.3* | | | *77.0-126* |

## Laboratory Control Sample (LCS)

(LCS) R3377774-1 01/18/19 05:18

| Analyte | Spike Amount ug/l | LCS Result ug/l | LCS Rec. % | Rec. Limits % | LCS Qualifier |
|---|---|---|---|---|---|
| Acetone | 125 | 122 | 97.9 | 19.0-160 | |
| Acrylonitrile | 125 | 117 | 93.4 | 55.0-149 | |
| Benzene | 25.0 | 24.0 | 96.2 | 70.0-123 | |
| Bromobenzene | 25.0 | 22.1 | 88.4 | 73.0-121 | |
| Bromodichloromethane | 25.0 | 26.3 | 105 | 75.0-120 | |
| Bromochloromethane | 25.0 | 26.7 | 107 | 76.0-122 | |
| Bromoform | 25.0 | 23.4 | 93.8 | 68.0-132 | |
| Bromomethane | 25.0 | 29.3 | 117 | 10.0-160 | |
| n-Butylbenzene | 25.0 | 25.5 | 102 | 73.0-125 | |
| sec-Butylbenzene | 25.0 | 25.1 | 100 | 75.0-125 | |
| tert-Butylbenzene | 25.0 | 25.1 | 100 | 76.0-124 | |
| Carbon disulfide | 25.0 | 23.7 | 94.9 | 61.0-128 | |
| Carbon tetrachloride | 25.0 | 23.8 | 95.1 | 68.0-126 | |
| Chlorobenzene | 25.0 | 27.2 | 109 | 80.0-121 | |
| Chlorodibromomethane | 25.0 | 25.4 | 102 | 77.0-125 | |
| Chloroethane | 25.0 | 25.7 | 103 | 47.0-150 | |
| Chloroform | 25.0 | 24.4 | 97.8 | 73.0-120 | |
| Chloromethane | 25.0 | 28.3 | 113 | 41.0-142 | |
| 2-Chlorotoluene | 25.0 | 23.4 | 93.5 | 76.0-123 | |
| 4-Chlorotoluene | 25.0 | 23.6 | 94.3 | 75.0-122 | |
| 1,2-Dibromo-3-Chloropropane | 25.0 | 23.8 | 95.1 | 58.0-134 | |
| 1,2-Dibromoethane | 25.0 | 26.0 | 104 | 80.0-122 | |
| Dibromomethane | 25.0 | 26.2 | 105 | 80.0-120 | |
| 1,2-Dichlorobenzene | 25.0 | 26.6 | 106 | 79.0-121 | |
| 1,3-Dichlorobenzene | 25.0 | 25.9 | 104 | 79.0-120 | |
| 1,4-Dichlorobenzene | 25.0 | 25.2 | 101 | 79.0-120 | |
| Dichlorodifluoromethane | 25.0 | 27.4 | 110 | 51.0-149 | |
| 1,1-Dichloroethane | 25.0 | 26.6 | 106 | 70.0-126 | |
| 1,2-Dichloroethane | 25.0 | 25.4 | 102 | 70.0-128 | |
| 1,1-Dichloroethene | 25.0 | 24.4 | 97.4 | 71.0-124 | |
| cis-1,2-Dichloroethene | 25.0 | 26.7 | 107 | 73.0-120 | |
| trans-1,2-Dichloroethene | 25.0 | 25.5 | 102 | 73.0-120 | |
| 1,2-Dichloropropane | 25.0 | 27.0 | 108 | 77.0-125 | |
| 1,1-Dichloropropene | 25.0 | 23.8 | 95.3 | 74.0-126 | |
| 1,3-Dichloropropane | 25.0 | 26.0 | 104 | 80.0-120 | |
| cis-1,3-Dichloropropene | 25.0 | 25.9 | 104 | 80.0-123 | |
| trans-1,3-Dichloropropene | 25.0 | 26.3 | 105 | 78.0-124 | |
| trans-1,4-Dichloro-2-butene | 25.0 | 20.7 | 82.6 | 33.0-144 | |
| 2,2-Dichloropropane | 25.0 | 26.8 | 107 | 58.0-130 | |
| Di-isopropyl ether | 25.0 | 26.2 | 105 | 58.0-138 | |

## Laboratory Control Sample (LCS)

(LCS) R3377774-1 01/18/19 05:18

| Analyte | Spike Amount ug/l | LCS Result ug/l | LCS Rec. % | Rec. Limits % | LCS Qualifier |
|---|---|---|---|---|---|
| Ethylbenzene | 25.0 | 25.2 | 101 | 79.0-123 | |
| Hexachloro-1,3-butadiene | 25.0 | 24.7 | 98.7 | 54.0-138 | |
| 2-Hexanone | 125 | 118 | 94.5 | 67.0-149 | |
| n-Hexane | 25.0 | 22.9 | 91.6 | 57.0-133 | |
| Iodomethane | 125 | 124 | 99.4 | 33.0-147 | |
| Isopropylbenzene | 25.0 | 24.3 | 97.4 | 76.0-127 | |
| p-Isopropyltoluene | 25.0 | 26.0 | 104 | 76.0-125 | |
| 2-Butanone (MEK) | 125 | 111 | 89.1 | 44.0-160 | |
| Methylene Chloride | 25.0 | 24.5 | 98.0 | 67.0-120 | |
| 4-Methyl-2-pentanone (MIBK) | 125 | 116 | 92.7 | 68.0-142 | |
| Methyl tert-butyl ether | 25.0 | 25.6 | 102 | 68.0-125 | |
| Naphthalene | 25.0 | 21.3 | 85.1 | 54.0-135 | |
| n-Propylbenzene | 25.0 | 23.9 | 95.5 | 77.0-124 | |
| Styrene | 25.0 | 25.5 | 102 | 73.0-130 | |
| 1,1,1,2-Tetrachloroethane | 25.0 | 28.4 | 114 | 75.0-125 | |
| 1,1,2,2-Tetrachloroethane | 25.0 | 20.0 | 80.1 | 65.0-130 | |
| 1,1,2-Trichlorotrifluoroethane | 25.0 | 23.9 | 95.6 | 69.0-132 | |
| Tetrachloroethene | 25.0 | 26.2 | 105 | 72.0-132 | |
| Toluene | 25.0 | 25.7 | 103 | 79.0-120 | |
| 1,2,3-Trichlorobenzene | 25.0 | 23.9 | 95.6 | 50.0-138 | |
| 1,2,4-Trichlorobenzene | 25.0 | 26.3 | 105 | 57.0-137 | |
| 1,1,1-Trichloroethane | 25.0 | 26.1 | 104 | 73.0-124 | |
| 1,1,2-Trichloroethane | 25.0 | 25.8 | 103 | 80.0-120 | |
| Trichloroethene | 25.0 | 27.6 | 110 | 78.0-124 | |
| Trichlorofluoromethane | 25.0 | 26.4 | 106 | 59.0-147 | |
| 1,2,3-Trichloropropane | 25.0 | 22.0 | 87.8 | 73.0-130 | |
| 1,2,4-Trimethylbenzene | 25.0 | 25.5 | 102 | 76.0-121 | |
| 1,2,3-Trimethylbenzene | 25.0 | 20.0 | 80.2 | 77.0-120 | |
| 1,3,5-Trimethylbenzene | 25.0 | 23.8 | 95.1 | 76.0-122 | |
| Vinyl acetate | 125 | 84.4 | 67.6 | 11.0-160 | |
| Vinyl chloride | 25.0 | 26.6 | 106 | 67.0-131 | |
| Xylenes, Total | 75.0 | 81.2 | 108 | 79.0-123 | |
| *(S) Toluene-d8* | | | *103* | *80.0-120* | |
| *(S) Dibromofluoromethane* | | | *102* | *75.0-120* | |
| *(S) 4-Bromofluorobenzene* | | | *90.8* | *77.0-126* | |

## 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

| | |
|---|---|
| MDL | Method Detection Limit. |
| ND | Not detected at the Reporting Limit (or MDL where applicable). |
| RDL | 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, the sample preparation volume or weight values differ from the standard, 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. |
| 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. |
| Uncertainty (Radiochemistry) | Confidence level of 2 sigma. |
| 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 |
|---|---|

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace National 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 Pace National.

## 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 |

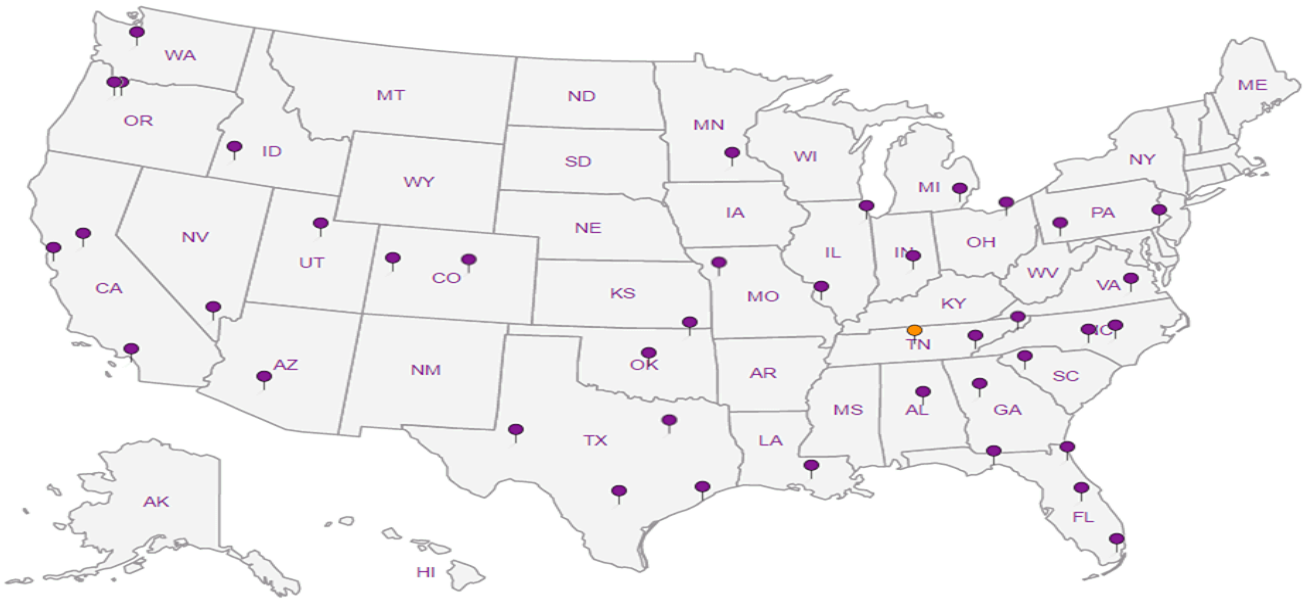
## Third Party Federal Accreditations

| | | | |
|---|---|---|---|
| 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

Pace National 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. Pace National performs all testing at our central laboratory.



**Zipper Geo Associates - Lynnwood, WA**

**19019 36th Ave. W.**

Billing Information:
**Accounts Payable**
**19019 36th Ave. W.**
**Ste. E**
**Lynnwood, WA 98036**

Report to: **Jon Einarsen**

Email To: **jeinarsen@zippergeo.com**

Project Description: **Prime Cleaners**

City/State Collected:

Phone: **425-582-9928**
Fax:

Client Project # **1001.25**

Lab Project # **ZIPGEOLWA-100125**

Collected by (print): **K. Newman**

Site/Facility ID #

P.O. # **1001.25**

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 ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Quote #

Pres Chk

Analysis / Container / Preservative

| Sample ID | Comp/Grab | Matrix * | Depth | Date | Time | No. of Cntrs | VOCs (V8260LLC) 40mlAmb-HCl | | | | | | | | | | Remarks | Sample # (lab only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | Grab | GW | N/A | 1/14/19 | 1449 | 3 | X | | | | | | | | | | | -01 |
| MW-2 | | GW | | 1/14/19 | 1230 | 3 | X | | | | | | | | | | | -02 |
| MW-3 | | GW | | 1/15/19 | 1320 | 3 | X | | | | | | | | | | | -03 |
| MW-4 | | GW | | 1/15/19 | 1517 | 3 | X | | | | | | | | | | | -04 |
| MW-5 | | GW | | 1/15/19 | 0840 | 3 | X | | | | | | | | | | | -05 |
| MW-6 | | GW | | 1/15/19 | 1639 | 3 | X | | | | | | | | | | | -06 |
| MW-7 | | GW | | 1/15/19 | 1150 | 3 | X | | | | | | | | | | | -07 |
| MW-8 | | GW | | 1/15/19 | 1427 | 3 | X | | | | | | | | | | | -08 |
| MW-9 | | GW | √ | 1/14/19 | 1347 | 3 | X | | | | | | | | | | | -09 |
| MW-10 | √ | GW | | 1/14/19 | 1055 | 3 | X | | | | | | | | | | | -10 |

Chain of Custody Page 1 of 2

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 1062097
B172

Acctnum: **ZIPGEOLWA**
Template: **T144736**
Prelogin: **P689138**
TSR:
PB:
Shipped Via:

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

Remarks:

RAD SCREEN: <0.5 mR/hr

pH _____ Temp _____
Flow _____ Other _____

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

Tracking # 4510 1658 9054

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 | |
|---|---|---|---|---|---|
| Zal Nm | 1/16/19 | 0930 | | | |
| Relinquished by : (Signature) | Date: | Time: | Received by: (Signature) | Temp: A2 BAC 3.4,1=3.5 Bottles Received: 39 | If preservation required by Login: Date/Time |
| Relinquished by : (Signature) | Date: | Time: | Received for lab by: (Signature) | Date: 1/17/19 Time: 0845 | Hold: Condition: NCF / OK |
| | | | KWillis | | |

Company: ppper Geo Associates - Lynnwood, A

Address: 019 36th Ave. W.

Report to: on Einarsen

Project Description: Prime Cleaners

Phone: 425-582-9928

Fax:

Collected by (print): K. Newman

Collected by (signature):

Immediately Packed on ice N___ Y X

Billing Information: Accounts Payable, 19019 36th Ave. W., Ste. E, Lynnwood, WA 98036

Pres Chk

Email To: jeinarsen@zippergeo.com

City/State Collected:

Client Project # 1001.25

Lab Project # ZIPGEOLWA-100125

Site/Facility ID #

P.O. # 1001.25

Quote #

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

Date Results Needed

| Sample ID | Comp/Grab | Matrix * | Depth | Date | Time | No. of Cntrs | VOCs (V8260LLC) 40mlAmb-HCl | Remarks | Sample # (lab only) |
|---|---|---|---|---|---|---|---|---|---|
| Duplicate | Grab | GW | N/A | 1/15/19 | | 3 | X | | -11 |
| Equipment Blank | ↓ | GW | ↓ | 1/15/19 | 1530 | 3 | X | | -12 |
| Effluent | ↓ | GW | ↓ | 1/11/19 | 1530 | | | | -13 |

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 1062097

Table #

Acctnum: ZIPGEOLWA

Template: T144736

Prelogin: P689138

TSR:

PB:

Shipped Via:

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

Remarks:

RAD SCR EN: <0.5 mR/hr

pH _____ Temp _____

Flow _____ Other _____

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

Tracking # 4510 1658 9054

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) |
|---|---|---|---|
| | 1/16/19 | 0930 | |
| Relinquished by : (Signature) | Date: | Time: | Received by: (Signature) |
| Relinquished by : (Signature) | Date: | Time: | Received for lab by: (Signature) |
| | | | KWillis |

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: A2 B4°C I.H +.1 = 3.5

Bottles Received: 39

If preservation required by Login: Date/Time

Date: 1/17/19 Time: 0845

Hold:

Condition: NCF / OK

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 6, 2018

Jon Einarsen, Project Manager
Zipper Geo Associates, LLC
19019 36th Ave W, Suite E
Lynnwood, WA 98036

Dear Mr Einarsen:

Included are the results from the testing of material submitted on August 23, 2018 from the Prime Cleaners 1001.25, F&BI 808537 project. There are 8 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
ZGA0906R.DOC

## CASE NARRATIVE

This case narrative encompasses samples received on August 23, 2018 by Friedman & Bruya, Inc. from the Zipper Geo Associates, LLC Prime Cleaners 1001.25, F&BI 808537 project. Samples were logged in under the laboratory ID's listed below.

| Laboratory ID | Zipper Geo Associates, LLC |
|---|---|
| 808537 -01 | Ambient |
| 808537 -02 | Prime Cleaner |
| 808537 -03 | Money Tree |
| 808537 -04 | Osaka Grill |

All quality control requirements were acceptable.

## Analysis For Volatile Compounds By Method TO-15

| | | | |
|---|---|---|---|
| Client Sample ID: | Ambient | Client: | Zipper Geo Associates, LLC |
| Date Received: | 08/23/18 | Project: | Prime Cleaners 1001.25, F&BI 808537 |
| Date Collected: | 08/22/18 | Lab ID: | 808537-01 |
| Date Analyzed: | 08/28/18 | Data File: | 082816.D |
| Matrix: | Air | Instrument: | GCMS7 |
| Units: | ug/m3 | Operator: | MS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 4-Bromofluorobenzene | 94 | 70 | 130 |

| Compounds: | Concentration ug/m3 | ppbv |
|---|---|---|
| Vinyl chloride | <0.26 | <0.1 |
| Chloroethane | <0.26 | <0.1 |
| 1,1-Dichloroethene | <0.4 | <0.1 |
| trans-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,1-Dichloroethane | <0.4 | <0.1 |
| cis-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,2-Dichloroethane (EDC) | 0.24 | 0.059 |
| 1,1,1-Trichloroethane | <0.55 | <0.1 |
| Trichloroethene | 0.28 | 0.052 |
| 1,1,2-Trichloroethane | <0.055 | <0.01 |
| Tetrachloroethene | <0.68 | <0.1 |

## Analysis For Volatile Compounds By Method TO-15

| | | | |
|---|---|---|---|
| Client Sample ID: | Prime Cleaner | Client: | Zipper Geo Associates, LLC |
| Date Received: | 08/23/18 | Project: | Prime Cleaners 1001.25, F&BI 808537 |
| Date Collected: | 08/22/18 | Lab ID: | 808537-02 |
| Date Analyzed: | 08/28/18 | Data File: | 082817.D |
| Matrix: | Air | Instrument: | GCMS7 |
| Units: | ug/m3 | Operator: | MS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 4-Bromofluorobenzene | 94 | 70 | 130 |

| Compounds: | Concentration ug/m3 | ppbv |
|---|---|---|
| Vinyl chloride | <0.26 | <0.1 |
| Chloroethane | <0.26 | <0.1 |
| 1,1-Dichloroethene | <0.4 | <0.1 |
| trans-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,1-Dichloroethane | <0.4 | <0.1 |
| cis-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,2-Dichloroethane (EDC) | <0.04 | <0.01 |
| 1,1,1-Trichloroethane | <0.55 | <0.1 |
| Trichloroethene | <0.27 | <0.05 |
| 1,1,2-Trichloroethane | <0.055 | <0.01 |
| Tetrachloroethene | 0.73 | 0.11 |

## Analysis For Volatile Compounds By Method TO-15

| | | | |
|---|---|---|---|
| Client Sample ID: | Money Tree | Client: | Zipper Geo Associates, LLC |
| Date Received: | 08/23/18 | Project: | Prime Cleaners 1001.25, F&BI 808537 |
| Date Collected: | 08/22/18 | Lab ID: | 808537-03 |
| Date Analyzed: | 08/29/18 | Data File: | 082818.D |
| Matrix: | Air | Instrument: | GCMS7 |
| Units: | ug/m3 | Operator: | MS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 4-Bromofluorobenzene | 96 | 70 | 130 |

| Compounds: | Concentration ug/m3 | ppbv |
|---|---|---|
| Vinyl chloride | <0.26 | <0.1 |
| Chloroethane | <0.26 | <0.1 |
| 1,1-Dichloroethene | <0.4 | <0.1 |
| trans-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,1-Dichloroethane | <0.4 | <0.1 |
| cis-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,2-Dichloroethane (EDC) | 0.073 | 0.018 |
| 1,1,1-Trichloroethane | <0.55 | <0.1 |
| Trichloroethene | 1.1 | 0.20 |
| 1,1,2-Trichloroethane | <0.055 | <0.01 |
| Tetrachloroethene | <0.68 | <0.1 |

## Analysis For Volatile Compounds By Method TO-15

| | | | |
|---|---|---|---|
| Client Sample ID: | Osaka Grill | Client: | Zipper Geo Associates, LLC |
| Date Received: | 08/23/18 | Project: | Prime Cleaners 1001.25, F&BI 808537 |
| Date Collected: | 08/22/18 | Lab ID: | 808537-04 |
| Date Analyzed: | 08/29/18 | Data File: | 082819.D |
| Matrix: | Air | Instrument: | GCMS7 |
| Units: | ug/m3 | Operator: | MS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 4-Bromofluorobenzene | 98 | 70 | 130 |

| Compounds: | Concentration ug/m3 | ppbv |
|---|---|---|
| Vinyl chloride | <0.26 | <0.1 |
| Chloroethane | <0.26 | <0.1 |
| 1,1-Dichloroethene | <0.4 | <0.1 |
| trans-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,1-Dichloroethane | <0.4 | <0.1 |
| cis-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,2-Dichloroethane (EDC) | 0.077 | 0.019 |
| 1,1,1-Trichloroethane | <0.55 | <0.1 |
| Trichloroethene | <0.27 | <0.05 |
| 1,1,2-Trichloroethane | <0.055 | <0.01 |
| Tetrachloroethene | <0.68 | <0.1 |

## Analysis For Volatile Compounds By Method TO-15

| | | | |
|---|---|---|---|
| Client Sample ID: | Method Blank | Client: | Zipper Geo Associates, LLC |
| Date Received: | Not Applicable | Project: | Prime Cleaners 1001.25, F&BI 808537 |
| Date Collected: | Not Applicable | Lab ID: | 08-1920 mb |
| Date Analyzed: | 08/28/18 | Data File: | 082807.D |
| Matrix: | Air | Instrument: | GCMS7 |
| Units: | ug/m3 | Operator: | MS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 4-Bromofluorobenzene | 97 | 70 | 130 |

| Compounds: | Concentration ug/m3 | ppbv |
|---|---|---|
| Vinyl chloride | <0.26 | <0.1 |
| Chloroethane | <0.26 | <0.1 |
| 1,1-Dichloroethene | <0.4 | <0.1 |
| trans-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,1-Dichloroethane | <0.4 | <0.1 |
| cis-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,2-Dichloroethane (EDC) | <0.04 | <0.01 |
| 1,1,1-Trichloroethane | <0.55 | <0.1 |
| Trichloroethene | <0.27 | <0.05 |
| 1,1,2-Trichloroethane | <0.055 | <0.01 |
| Tetrachloroethene | <0.68 | <0.1 |

Date of Report: 09/06/18
Date Received: 08/23/18
Project: Prime Cleaners 1001.25, F&BI 808537

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Vinyl chloride | ppbv | 5 | 99 | 70-130 |
| Chloroethane | ppbv | 5 | 98 | 70-130 |
| 1,1-Dichloroethene | ppbv | 5 | 103 | 70-130 |
| trans-1,2-Dichloroethene | ppbv | 5 | 105 | 70-130 |
| 1,1-Dichloroethane | ppbv | 5 | 106 | 70-130 |
| cis-1,2-Dichloroethene | ppbv | 5 | 104 | 70-130 |
| 1,2-Dichloroethane (EDC) | ppbv | 5 | 111 | 70-130 |
| 1,1,1-Trichloroethane | ppbv | 5 | 111 | 70-130 |
| Trichloroethene | ppbv | 5 | 99 | 70-130 |
| 1,1,2-Trichloroethane | ppbv | 5 | 101 | 70-130 |
| Tetrachloroethene | ppbv | 5 | 99 | 70-130 |

# Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

808537

# SAMPLE CHAIN OF CUSTODY ME 08-23-18

Page # 1 of 1

Report To Jon Einarsen
Company ZGA
Address 19019 36th Ave W
Suite E
City, State, ZIP Lynnwood WA 98036
Phone 425-582-9928 Email jeinarsen@zippergeo.com

SAMPLERS (*signature*): Jon Einarsen

PROJECT NAME: PRIME CLEANERS

PO #: 1001.25

REPORTING LEVEL
- [X] Indoor Air
- [ ] Deep Soil Gas
- [ ] Sub Slab/Soil Gas
- [ ] SVE/Grab

INVOICE TO: ZGA

TURNAROUND TIME
- [X] Standard
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

ANALYSIS REQUESTED

| Sample Name | Lab ID | Canister ID | ~~Flow~~ Contr. ID | Date Sampled | ~~Field~~ Initial Press. (Hg) | ~~Field~~ Initial Time | Field Final Press. (Hg) | ~~Field~~ Final Time | TO-15 Full Scan | TO-15 BTEXN | TO-15 cVOCs | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AMBIENT | 01 | | | 8/22/18 | 30 | 1019 | 7 | 1818 | | | X | | |
| PRIME CLEANER | 02 | | | ↓ | 28 | 1026 | 3.5 | 1824 | | | ↓ | | |
| MONEY TREE | 03 | | | ↓ | 28 | 1031 | 5 | 1830 | | | ↓ | | |
| OSAKA GRILL | 04 | | | ↓ | 29 | 1033 | 4 | 1832 | | | ↓ | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | Samples received at 20 °C |
| | | | | | | | | | | | | | |

| SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|
| Relinquished by: | Jon Einarsen | ZGA | 8-~~22~~23-18 | 1320 |
| Received by: | Eric Young | F&B | 8/23/18 | 1320 |
| Relinquished by: | | | | |
| Received by: | | | | |

*Friedman & Bruya, Inc.*
*3012 16th Avenue West*
*Seattle, WA 98119-2029*
*Ph. (206) 285-8282*
*Fax (206) 283-5044*

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

January 23, 2019

Jon Einarsen, Project Manager
Zipper Geo Associates, LLC
19019 36th Ave W, Suite E
Lynnwood, WA 98036

Dear Mr Einarsen:

Included are the results from the testing of material submitted on January 15, 2019 from the Prime Cleaners 1001.25, F&BI 901163 project. There are 8 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
ZGA0123R.DOC

## CASE NARRATIVE

This case narrative encompasses samples received on January 15, 2019 by Friedman & Bruya, Inc. from the Zipper Geo Associates, LLC Prime Cleaners 1001.25 project. Samples were logged in under the laboratory ID's listed below.

| Laboratory ID | Zipper Geo Associates, LLC |
|---|---|
| 901163 -01 | Ambient |
| 901163 -02 | Prime Cleaner |
| 901163 -03 | Money Tree |
| 901163 -04 | Osaka Grill |

All quality control requirements were acceptable.

## Analysis For Volatile Compounds By Method TO-15

| | | | |
|---|---|---|---|
| Client Sample ID: | Ambient | Client: | Zipper Geo Associates, LLC |
| Date Received: | 01/15/19 | Project: | Prime Cleaners 1001.25, F&BI 901163 |
| Date Collected: | 01/14/19 | Lab ID: | 901163-01 |
| Date Analyzed: | 01/17/19 | Data File: | 011716.D |
| Matrix: | Air | Instrument: | GCMS7 |
| Units: | ug/m3 | Operator: | MS/bat |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 4-Bromofluorobenzene | 96 | 70 | 130 |

| Compounds: | Concentration ug/m3 | ppbv |
|---|---|---|
| Vinyl chloride | <0.26 | <0.1 |
| Chloroethane | <2.6 | <1 |
| 1,1-Dichloroethene | <0.4 | <0.1 |
| trans-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,1-Dichloroethane | <0.4 | <0.1 |
| cis-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,2-Dichloroethane (EDC) | 0.11 | 0.026 |
| 1,1,1-Trichloroethane | <0.55 | <0.1 |
| Trichloroethene | <0.27 | <0.05 |
| 1,1,2-Trichloroethane | <0.11 | <0.02 |
| Tetrachloroethene | <6.8 | <1 |

## Analysis For Volatile Compounds By Method TO-15

| | | | |
|---|---|---|---|
| Client Sample ID: | Prime Cleaner | Client: | Zipper Geo Associates, LLC |
| Date Received: | 01/15/19 | Project: | Prime Cleaners 1001.25, F&BI 901163 |
| Date Collected: | 01/14/19 | Lab ID: | 901163-02 |
| Date Analyzed: | 01/17/19 | Data File: | 011717.D |
| Matrix: | Air | Instrument: | GCMS7 |
| Units: | ug/m3 | Operator: | MS/bat |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 4-Bromofluorobenzene | 93 | 70 | 130 |

| Compounds: | Concentration ug/m3 | ppbv |
|---|---|---|
| Vinyl chloride | <0.26 | <0.1 |
| Chloroethane | <2.6 | <1 |
| 1,1-Dichloroethene | <0.4 | <0.1 |
| trans-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,1-Dichloroethane | <0.4 | <0.1 |
| cis-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,2-Dichloroethane (EDC) | 0.12 | 0.029 |
| 1,1,1-Trichloroethane | <0.55 | <0.1 |
| Trichloroethene | <0.27 | <0.05 |
| 1,1,2-Trichloroethane | <0.11 | <0.02 |
| Tetrachloroethene | <6.8 | <1 |

## Analysis For Volatile Compounds By Method TO-15

| | | | |
|---|---|---|---|
| Client Sample ID: | Money Tree | Client: | Zipper Geo Associates, LLC |
| Date Received: | 01/15/19 | Project: | Prime Cleaners 1001.25, F&BI 901163 |
| Date Collected: | 01/14/19 | Lab ID: | 901163-03 |
| Date Analyzed: | 01/17/19 | Data File: | 011718.D |
| Matrix: | Air | Instrument: | GCMS7 |
| Units: | ug/m3 | Operator: | MS/bat |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 4-Bromofluorobenzene | 109 | 70 | 130 |

| Compounds: | Concentration ug/m3 | ppbv |
|---|---|---|
| Vinyl chloride | <0.26 | <0.1 |
| Chloroethane | <2.6 | <1 |
| 1,1-Dichloroethene | <0.4 | <0.1 |
| trans-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,1-Dichloroethane | <0.4 | <0.1 |
| cis-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,2-Dichloroethane (EDC) | 0.11 | 0.028 |
| 1,1,1-Trichloroethane | <0.55 | <0.1 |
| Trichloroethene | <0.27 | <0.05 |
| 1,1,2-Trichloroethane | <0.11 | <0.02 |
| Tetrachloroethene | <6.8 | <1 |

## Analysis For Volatile Compounds By Method TO-15

| | | | |
|---|---|---|---|
| Client Sample ID: | Osaka Grill | Client: | Zipper Geo Associates, LLC |
| Date Received: | 01/15/19 | Project: | Prime Cleaners 1001.25, F&BI 901163 |
| Date Collected: | 01/14/19 | Lab ID: | 901163-04 |
| Date Analyzed: | 01/17/19 | Data File: | 011719.D |
| Matrix: | Air | Instrument: | GCMS7 |
| Units: | ug/m3 | Operator: | MS/bat |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 4-Bromofluorobenzene | 107 | 70 | 130 |

| Compounds: | Concentration ug/m3 | ppbv |
|---|---|---|
| Vinyl chloride | <0.26 | <0.1 |
| Chloroethane | <2.6 | <1 |
| 1,1-Dichloroethene | <0.4 | <0.1 |
| trans-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,1-Dichloroethane | <0.4 | <0.1 |
| cis-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,2-Dichloroethane (EDC) | 0.13 | 0.032 |
| 1,1,1-Trichloroethane | <0.55 | <0.1 |
| Trichloroethene | <0.27 | <0.05 |
| 1,1,2-Trichloroethane | <0.11 | <0.02 |
| Tetrachloroethene | <6.8 | <1 |

## Analysis For Volatile Compounds By Method TO-15

| | | | |
|---|---|---|---|
| Client Sample ID: | Method Blank | Client: | Zipper Geo Associates, LLC |
| Date Received: | Not Applicable | Project: | Prime Cleaners 1001.25, F&BI 901163 |
| Date Collected: | Not Applicable | Lab ID: | 09-0036 mb |
| Date Analyzed: | 01/17/19 | Data File: | 011708.D |
| Matrix: | Air | Instrument: | GCMS7 |
| Units: | ug/m3 | Operator: | MS/bat |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 4-Bromofluorobenzene | 99 | 70 | 130 |

| Compounds: | Concentration ug/m3 | ppbv |
|---|---|---|
| Vinyl chloride | <0.26 | <0.1 |
| Chloroethane | <2.6 | <1 |
| 1,1-Dichloroethene | <0.4 | <0.1 |
| trans-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,1-Dichloroethane | <0.4 | <0.1 |
| cis-1,2-Dichloroethene | <0.4 | <0.1 |
| 1,2-Dichloroethane (EDC) | <0.04 | <0.01 |
| 1,1,1-Trichloroethane | <0.55 | <0.1 |
| Trichloroethene | <0.27 | <0.05 |
| 1,1,2-Trichloroethane | <0.11 | <0.02 |
| Tetrachloroethene | <6.8 | <1 |

Date of Report: 01/23/19
Date Received: 01/15/19
Project: Prime Cleaners 1001.25, F&BI 901163

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Vinyl chloride | ppbv | 5 | 130 | 70-130 |
| Chloroethane | ppbv | 5 | 127 | 70-130 |
| 1,1-Dichloroethene | ppbv | 5 | 129 | 70-130 |
| trans-1,2-Dichloroethene | ppbv | 5 | 125 | 70-130 |
| 1,1-Dichloroethane | ppbv | 5 | 126 | 70-130 |
| cis-1,2-Dichloroethene | ppbv | 5 | 124 | 70-130 |
| 1,2-Dichloroethane (EDC) | ppbv | 5 | 124 | 70-130 |
| 1,1,1-Trichloroethane | ppbv | 5 | 126 | 70-130 |
| Trichloroethene | ppbv | 5 | 98 | 70-130 |
| 1,1,2-Trichloroethane | ppbv | 5 | 101 | 70-130 |
| Tetrachloroethene | ppbv | 5 | 98 | 70-130 |

# Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

901163

# SAMPLE CHAIN OF CUSTODY

ME 01-15-19

Page # 1 of 1

Report To Jon Einarsen
Company Zipper Geo
Address 19019 36th Ave W Suite F
City, State, ZIP Lynnwood WA 98036
Phone 425-582-9928 Email jeinarsen@zippergeo.com

SAMPLERS (signature)

PROJECT NAME: Prime Cleaners
PO #: 1001.25

REPORTING LEVEL
[X] Indoor Air [ ] Deep Soil Gas
[ ] Sub Slab/Soil Gas [ ] SVE/Grab

INVOICE TO: ZGA

TURNAROUND TIME
[X] Standard
[ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
[X] Dispose after 30 days
[ ] Archive Samples
[ ] Other

ANALYSIS REQUESTED

| Sample Name | Lab ID | Canister ID | Flow Contr. ID | Date Sampled | Field Initial Press. (Hg) | Field Initial Time | Field Final Press. (Hg) | Field Final Time | TO-15 Full Scan | TO-15 BTEXN | TO-15 cVOCs | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AMBIENT | 01 | 20543 | 06606 | 1/14/19 | 30 | 1037 | 5 | 1840 | | | X | | |
| PRIME Cleaner | 02 | 21484 | 07850 | ↓ | ↓ | 1046 | 7 | 1833 | | | ↓ | | |
| Money Tree | 03 | 21440 | 08183 | ↓ | ↓ | 1041 | 6 | 1831 | | | ↓ | | |
| OSAKA GRILL | 04 | 18575 | 07871 | ↓ | ↓ | 1048 | 7 | 1836 | | | ↓ | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | Samples received at 20 °C | |

| SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|
| Relinquished by: | Jeff Tinkpaugh | ZGA | 1/15/19 | 16:17 |
| Received by: | | | 1/15/19 | 1612 |
| Relinquished by: | | | | |
| Received by: | | | | |

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