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**Subject:** Former Ducane Site; Voluntary Cleanup Contract 16-5848-RP; File #401356 - Updated Assessment Report

**\*\*\* Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. \*\*\***  
Hi Kim,

Attached is a link to the Updated Assessment Report for the former Ducane Company Site (Lennox) in Blackville, SC.

[https://earthcon1-my.sharepoint.com/:f/g/personal/cnorthern\\_earthcon\\_com/Eh6JuvcsdMZLhnGAKGpuOfMBCWY7sUTNKhq\\_ZehEteG-8g?e=wQjZlv](https://earthcon1-my.sharepoint.com/:f/g/personal/cnorthern_earthcon_com/Eh6JuvcsdMZLhnGAKGpuOfMBCWY7sUTNKhq_ZehEteG-8g?e=wQjZlv)

This link will take you to a folder which contains a pdf of the document, exclusive of Appendix G. Appendix G (Groundwater Plume Analytics Presentation) is provided in the folder as a separate PowerPoint presentation. As a reminder, to animate the presentation you should be in "Slide Show".

Please let me know if you have any issues accessing the folder or downloading either the pdf or the PowerPoint file. Also, please let me know if you require a paper copy of the report.

Looking forward to talking with you on Sept 24.

Thanks,  
Carol

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September 10, 2020

Ms. Kimberly Kuhn  
South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management  
2600 Bull Street  
Columbia, South Carolina 29201

Subject: **Updated Assessment Report**  
Former Ducane Company Site  
Blackville, Barnwell County, South Carolina  
BLWM File # 401356  
EarthCon Project No. 02.20160378.00

Dear Ms. Kuhn:

On behalf of our client Lennox International Inc. (Lennox), EarthCon Consultants, Inc. (EarthCon) is submitting the enclosed Updated Assessment Report for the former Ducane Company Site located in Blackville, Barnwell County, South Carolina (BLWM File # 401356). This report is being submitted in accordance with the requirements of Voluntary Cleanup Contract 16-5848-RP executed on November 17, 2016. Due to the visual nature of Plume Analytics®, we would like to arrange a meeting with you to present the results of the Plume Analytics® study prior to your final review of the enclosed report.

Please free to call us at (770) 973-2100 if you have any questions or if we can provide any additional information.

Respectfully submitted,  
**EARTHCON CONSULTANTS, INC.**

Carol D. Northern  
Project Manager

Timothy O. Goist, P.G. (SC#1121)  
Client Manager

Cc: Ms. Christi Campbell, Environmental Affairs Director, Lennox International, Inc.



## **UPDATED ASSESSMENT REPORT**

**FORMER DUCANE COMPANY SITE  
118 WEST MAIN STREET  
BLACKVILLE, BARNWELL COUNTY, SOUTH CAROLINA  
BLWM FILE #401356**

**PREPARED FOR:**

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2140 Lake Park Boulevard  
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**PREPARED BY:**

**EARTHCON CONSULTANTS, INC.  
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**EarthCon Project No. 02.20160378.00**

**September 2020**

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## 1.0 INTRODUCTION

The former Ducane Company Site (the Site) is located at 118 West Main Street in Blackville, South Carolina (Figure 1). The Site consists of approximately 105 acres with about 19 acres developed with a production building and a research and development building. The Site is identified by Barnwell County as consisting of three parcels. One parcel is owned by the Barnwell County Economic Development Corporation. The other two parcels, which include the Site buildings, were owned by NK Newlook, Inc. and were formerly used for production of wooden commercial display cabinets. These parcels are currently owned by the Barnwell County Economic Development Corporation.

Assessment and remediation activities have been ongoing at the Site since 1999. Constituents detected in Site soils and groundwater included chlorinated volatile organic compounds (CVOCs) and petroleum hydrocarbons. Approximately nine in-situ chemical oxidation/bio-remediation injection events were performed at the Site from July 2003 to April 2008.

On November 17, 2016, Lennox International (Lennox) entered into Voluntary Cleanup Contract 16-5848-RP (the Contract) with the South Carolina Department of Health and Environmental Control (DHEC). In accordance with the Contract requirements, comprehensive groundwater sampling of Site wells was conducted from January 30 to February 2, 2017. The groundwater samples were analyzed for volatile organic compounds (VOCs) to update the status of the known plume. Groundwater samples collected from monitoring wells MW-1, MW-3 and background well MW-6R were also analyzed for Target Analyte List (TAL) metals. The results of the comprehensive groundwater sampling event were presented in an Assessment Report dated March 24, 2017. Based on the sampling event results and the subsequent Plume Analytics® study, the Assessment Report proposed conducting semi-annual groundwater sampling for a period of two years (four total sampling events). The Assessment Report also recommended minor repairs to monitoring wells and the installation of one additional monitoring well (MW-16) north of MW-3 to address a data gap identified during the Plume Analytics® study. DHEC approved the Assessment report in letters dated May 8 and June 1, 2017.

The four semi-annual groundwater sampling events were conducted at the Site in October 2017, March 2018, October 2018 and March 2019. Groundwater sampling was conducted as described in the March 2017 Assessment Report and the Work Plan for Monitoring Well Installation dated June 29, 2017 and approved by DHEC on July 17, 2017. The results for the first three semi-

annual groundwater sampling events were provided to DHEC in Semi-Annual Monitoring Reports dated January 30, 2018, July 23, 2018 and January 24, 2019. The results of the fourth semi-annual groundwater sampling event conducted in March 2019 along with the updated Plume Analytics® study were provided to DHEC in the Updated Assessment Report dated July 26, 2019.

A meeting was held on August 28, 2019 to discuss future Site activities. As a result of that meeting, Lennox agreed to install one additional monitoring well (MW-17), redevelop monitoring well MW-4D, conduct one additional year of semi-annual groundwater sampling and update the Plume Analytics® study with the additional groundwater analytical results. The Updated Assessment Report and the additional Site activities were approved by DHEC in a letter dated August 29, 2019.

The two additional semi-annual groundwater sampling events were conducted in October 2019 and April 2020. Groundwater sampling was conducted as described in the March 2017 Assessment Report and the Work Plan for Monitoring Well Installation dated June 29, 2017 and approved by DHEC on July 17, 2017. The results of the first additional semi-annual sampling event, conducted in October 2019, were provided to DHEC in the Semi-Annual Monitoring Report dated January 22, 2020.

This Updated Assessment Report for the Former Ducane Company Site (BLWM File #401356) is being submitted to satisfy the requirements of Voluntary Cleanup Contract 16-5848-RP executed on November 17, 2016. This report presents the results of the second additional semi-annual groundwater sampling event conducted in April 2020 along with the updated Plume Analytics® study.

## 2.0 GROUNDWATER SAMPLING

### 2.1 Field Activities

The second additional semi-annual groundwater sampling event was conducted at the Site from April 20 to April 23, 2020. There are 21 groundwater monitoring wells located at the Site. Prior to sampling, depth to groundwater measurements were collected at all accessible wells. The locations of the monitoring wells are shown on Figure 2.

Static water levels were measured on April 20, 2020 from 18 Site groundwater monitoring wells. Permission to access well MW-9, which is located on the adjacent private property, was not

granted. Monitoring wells MW-12 and MW-13 could not be located. The monitoring well construction details are presented in Table 1 and the water level measurements are presented in Table 2.

Groundwater samples were collected from 18 of the 21 wells using low flow purge and sampling techniques. Wells MW-9, MW-12 and MW-13 could not be sampled for the reasons stated above. Prior to sampling, each well was purged, and the following field parameters were measured: temperature, specific conductance, dissolved oxygen (DO), oxidation reduction potential (ORP), ferrous iron and turbidity. A description of the field procedures is provided in Appendix A. Field parameters measured during the sampling event are summarized in Table 3 and the field sampling forms are provided in Appendix B.

During previous sampling events, Teflon bailers and tubing were removed from well MW-4D. During the April 2020 sampling event, a downhole camera was used to evaluate the well integrity. Field evaluation of the video feed indicated potential breaches in the casing at 20 and 30 feet below top of casing. Additionally, based on the historical presence of bailers and tubing, monitoring well MW-4D was redeveloped prior to sampling during the April 2020 sampling event. A more detailed description of these activities is provided in Appendix A.

## 2.2 Groundwater Flow and Site Lithology

The water level measurements collected on April 20, 2020 (Table 2) were used to develop a potentiometric surface map for the Site, which is included as Figure 3. As shown on Figure 3, groundwater elevation data indicate groundwater flow is to the northwest which is consistent with groundwater flow measured in previous sampling events. A summary of historical groundwater elevations is provided in Appendix C.

As requested by DHEC, lithologic information collected during the previous assessment activities (as shown on well boring logs) was used to develop two cross sections to illustrate the subsurface soils beneath the Site. Figure 4 shows the orientation of the cross sections and Figures 5 and 6 present cross sections A-A' and B-B', respectively. As shown on the cross sections, the Site is underlain by interbedded clayey sand, silty sand, silt, sand, and thin clay layers. The lithology appears to become increasingly sandy with depth.



## 2.3 Groundwater Analytical Results

Groundwater samples were analyzed for VOCs using EPA Method 8260D and 1,4-dioxane using EPA Method 8260D SIM. The groundwater samples were also analyzed for the monitored natural attenuation (MNA) parameters nitrate, sulfate, sulfide, chloride, alkalinity, total organic carbon (TOC) and dissolved gases (ethane, ethene, methane and propane).

A summary of the VOC analyses is provided in Table 4 and the MNA parameter results are summarized in Table 5. The laboratory analytical reports from Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.) (DHEC Certification No. 32010001) are provided in Appendix D.

The laboratory data was validated in accordance with the *Contract Laboratory Program National Function Guidelines for Inorganic Data Review* (USEPA, 2008) and *Contract Laboratory Program National Function Guidelines for Inorganic Data Review* (USEPA, 2010). A copy of the validation summary is provided in Appendix D. A summary of historical groundwater analytical results is provided in Appendix E. The April 2020 data is substantially consistent with historical data.

## 2.4 IDW Management

Investigation derived waste (IDW) in the form of purge water was generated during groundwater sampling activities. IDW was containerized in 55-gallon drums, properly labeled, and properly disposed offsite.

### 3.0 GROUNDWATER PLUME ANALYTICS® METHODOLOGY

A Groundwater Plume Analytics® evaluation, including a Ricker Method® Plume Stability Analysis, was conducted for the upper shallow aquifer at the Site using groundwater analytical data provided by Environmental Resources Management (ERM) through 2014 and analytical data collected by EarthCon through April 2020. The Groundwater Plume Analytics® evaluation was conducted for the following constituents of concern (COC):

#### **Chloroethenes**

- Tetrachloroethene (PCE);
- Trichloroethene (TCE);
- cis-1,2-Dichloroethene (cis-1,2-DCE);
- trans-1,2-Dichloroethene (trans-1,2-DCE);
- 1,1-Dichloroethene (1,1-DCE);
- Vinyl chloride; and
- Total chloroethenes (molar)

#### **Chloroethanes**

- 1,1,2-trichloroethane (1,1,2-TCA)
- 1,1,1-trichloroethane (1,1,1-TCA);
- 1,2-dichloroethane (1,2-DCA);
- 1,1-dichloroethane (1,1-DCA); and
- Total chloroethanes (molar)

#### **Aromatic Hydrocarbons**

- Toluene
- Ethylbenzene
- Xylenes

This Groundwater Plume Analytics® evaluation included the following elements:

- Ricker Method® Plume Stability Analysis;
- Total molar trend and molar fraction analysis for chloroethenes and chloroethanes;
- Ricker Method® Spatial Change Indicator™;
- Geochemical MNA isopleths; and
- Groundwater elevation trend evaluation.

The following subsections present the methodologies of the aforementioned elements of the Groundwater Plume Analytics® services. Results of the Groundwater Plume Analytics® evaluation are presented in Section 4.0.

#### 3.1 Ricker Method® Plume Stability Analysis

The Ricker Method® Plume Stability analysis was conducted using procedures described in *A Practical Method to Evaluate Ground Water Contaminant Plume Stability* (Ricker, 2008). The Ricker Method® plume stability analysis compares relative changes in contaminant plume characteristics over time, including area, average concentration, and mass indicator. Note that the term “mass indicator” does not necessarily represent the entire mass in the subsurface but

rather an expression of it based on a fixed assumption of aquifer thickness and porosity to serve as a way of combining plume area and average concentration into one meaningful metric. Calculation of the actual constituent subsurface mass is often a very complicated exercise, and usually more data/inputs are needed than are available from typical delineation and/or remediation well information. Because the plume mass value is not necessarily a measure of actual contaminant mass, the term “mass indicator” is used to describe this plume characteristic. Since the main purpose of the plume stability analysis is to observe relative changes in plume characteristics between sampling events, applying constants (i.e., porosity and aquifer thickness) to the mass calculation has no bearing on the usefulness of the output of the analysis (i.e., relative rate of change in plume mass).

To demonstrate that a plume is decreasing or stable, temporal changes in these calculated values should result in an overall decreasing or stable trend. An increasing trend in any of these values may indicate that the plume is not stable and/or is possibly expanding. Further details concerning trend analysis and determination of a trend conclusion are provided in Section 3.1.3.

### **3.1.1 Data Assessment and Input File Development**

Data used in the Ricker Method<sup>®</sup> plume stability analysis for the constituents listed above for the Upper Shallow aquifer at the Site are included in Appendix F. Groundwater analytical data showed that the monitoring well network and the monitoring frequency at the Site varied over a period from approximately 1999 through April 2020. Sampling events occurred at varying frequencies with annual monitoring in 1999 and 2000, semi-annual monitoring from 2001 through 2010, singular events conducted in 2012 and 2014, and seven semi-annual events from February 2017 through April 2020.

Not all wells were sampled during each sampling event, and gaps were filled by either interpolating between those events with available data or by extrapolating values using available data from previous or subsequent events. Other scientific and/or statistical assumptions and adjustments to the data, consistent with the Ricker Method<sup>®</sup>, were necessary to complete the analysis. These adjustments are identified in the Ricker Method<sup>®</sup> input data set summarized in Appendix F. The assumptions and adjustments used in the analysis include the following:

- In most cases non-detect concentrations were evaluated with an assigned concentration value of the stated detection limit. Also, in cases where non-detect results with elevated

detection limits were encountered, professional judgment was used to assign a concentration value. For instances in this case with detectable results or non-detect results with a lower detection limit before and after, a value was assigned by interpolation, using the events before and after. For instances with no detectable result or non-detect result with a lower detection limit following the event in question, the last known detectable result was used. These instances are indicated by green shading in Appendix F. In every case the assigned value was based on actual results (detectable value or non-detect at a lower detection limit). Assigned values for non-detect concentrations are provided in Appendix F.

- For sampling events where a particular monitoring well was not sampled, but analytical data prior to and subsequent to are available, the events were assigned values by linearly interpolating between the closest prior and subsequent sampling event. Instances where these values are assigned are indicated by orange shading in Appendix F.

### 3.1.2 Groundwater Plume Map Development

As part of the Ricker Method<sup>®</sup> plume stability analysis, constituent concentration isopleth maps, or plume maps, were developed for the groundwater monitoring events that occurred September 1999 through April 2020 for the aforementioned constituents in the upper shallow aquifer. The lower or deep aquifer (as designated by the “D” wells) was evaluated on a well by well basis due to the limited number of wells in this aquifer zone. Plume maps for each compound were delineated to the base contour values listed below.

<u>Constituent</u>	<u>Base Contour (µg/L)</u>
PCE	5
TCE	5
1,1-DCE	7
cis-1,2-DCE	5
Trans-1,2-DCE	5
VC	2
1,1,2-TCA	5
1,1,1-TCA	5
1,2-DCA	5
1,1-DCA	5

Ethylbenzene	5
Toluene	5
Xylenes	5

Total chloroethene plume maps were developed by converting the individual contours of PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE and vinyl chloride to a molar concentration basis, at or above their respective base contours, and summing them to determine a total molar plume for each event. Total chloroethane plume maps were developed in the same manner using the contours for 1,1,2-TCA, 1,1,1-TCA, 1,2-DCA and 1,1-DCA.

The area of the constituent-specific plume for each sampling event was calculated using the mathematical features of the contouring software to develop the isopleth maps (i.e., Surfer® 17.1.288, by Golden Software, Inc.) The *kriging* gridding method was used with the default linear variogram to develop the isopleth maps. Surfer® was also used for the computation of the average concentration of each plume as described in Ricker (2008). The plume area and average concentrations were then used to calculate the plume mass indicator for each event. To calculate the plume mass indicator, a porosity of 30% and an aquifer thickness of 10 feet were used based on the lengths of the screens for most of the wells installed in the shallow aquifer.

Concentration isopleth maps for each constituent are included in Appendix G. As discussed above, plume stability characteristics were calculated for each of the sampling events included in the analysis. The plume stability characteristics of area, average concentration, and mass indicator, as well as the location of the center of mass, are also provided on each isopleth map.

### 3.1.3 Statistical Methodology

To evaluate the stability of each constituent plume, temporal trends of the characteristics for each plume were evaluated statistically. The area, average concentration, and mass indicator for each event were plotted to observe changes in each parameter from event to event. The results of the plume stability analyses for each constituent are discussed in Section 4.0.

The temporal trends in the plume characteristic values were statistically evaluated using both linear regression techniques and the Mann-Kendall Test. Linear regression analyses were conducted using the regression analysis utility in Microsoft Excel, version 1808 (Office 365). The Mann-Kendall Tests were also conducted using procedures described in Gilbert (1987). Linear regression is a parametric statistical procedure that is typically used for analyzing trends in data

over time. The Mann-Kendall Test is a non-parametric statistical test; therefore, it is not dependent upon the magnitude of the data, assumptions of distribution, or regularly spaced sampling events.

The Mann-Kendall Test is used to assess whether a data set exhibits an increasing or decreasing trend at a predetermined level of significance ( $\alpha$ ). The test requires the calculation of a statistic “S” which is the difference between the number of paired differences that are positive, minus the number that are negative. If S is a large positive value, then there is evidence of an increasing trend in the data. If S is a large negative value, then there is evidence of a decreasing trend in the data. The null hypothesis,  $H_0$ , for the Mann-Kendall Test is that there is no temporal trend in the data. The alternative hypothesis,  $H_A$ , is that of either an upward trend or a downward trend.

If the null hypothesis is not rejected (i.e., no trend could be established statistically), it is expected that the plume is stable. However, a stable plume may not in fact be evident because the statistical test does not consider magnitude or variation in the data. For example, a data set can exhibit a large amount of scatter, yet the test could conclude that the plume is stable. A methodology to counter the problem of scatter in the data involves comparing the calculated S statistic, a calculated confidence factor ( $1-\alpha$ ), and the coefficient of variation for the data set. The S statistic indicates the direction of the trend, the confidence factor shows how strong the trend is, and the coefficient of variation indicates the degree of scatter in the data.

When evaluating trends using linear regression, trends may be obscured by scatter in the data. This condition is typically indicated by a low coefficient of determination ( $R^2$ ) value. Even with low  $R^2$  values (i.e., high degree of scatter) a confidence interval can still be constructed on the slope of the regression line. As described in AFCEE (2006), assuming the sign (i.e., positive or negative) of the estimated log-slope is correct, a level of confidence that the slope is not zero can be easily determined. The overall trend in the data may thus still be determined, where low levels of confidence correspond to stable or indeterminate trends and higher levels of confidence (e.g., > 90%) indicate the stronger likelihood of a trend.

For the plume stability analysis, significant trends are concluded when the calculated confidence factor is greater than 90%. If the confidence factor is less than 90%, the plume is considered stable or indeterminate (i.e. “no trend”).

In many cases the statistical results for both linear regression and the Mann-Kendall Test agree with each other. In the case where two different results are obtained (e.g., one stable trend and one decreasing trend), visual analysis and professional judgment are used to determine the overall trend result.

Trend analysis results for the respective constituent plume area, average concentration, and mass indicator are discussed for each constituent in Section 4.0.

### 3.1.4 Plume Center of Mass Evaluation

In addition to temporal trend analyses of plume characteristics, the center of plume mass (COM) was calculated. Evaluation of COM movement should be considered in conjunction with the other plume characteristics to assess the overall stability of a plume. For example, a stable or decreasing plume may actually show migration of the COM in the downgradient direction in instances when focused remediation occurred in a source area of a Site. In this case, this downgradient shift is due to the rapid loss of mass in the upgradient portion of the plume, as opposed to a gradual migration resulting from advective transport.

The plume COM is depicted on each constituent plume map included in Appendix G. For total chloroethenes and total chloroethanes, the COM data is plotted on a Site map, with each COM location (representing a discrete sampling event) color coded according to event date, to visually assess spatial changes in COM location through time. Additionally, each COM location is represented by a vector that indicates the direction and distance of each COM movement from one sampling event to the next. The COM vectors are then plotted together with each vector tail anchored at a common point to show variability in COM movement (similar to a wind rose diagram).

### 3.2 Total Molar Plume Trend and Molar Fraction Analysis

In addition to the metrics described above, the CVOC groundwater data was also evaluated on a molar basis for both total chloroethenes and total chloroethanes. To evaluate the CVOC plumes on a molar basis, the total moles of the plume as well as the molar fraction of each constituent in the total were calculated.

It is known that during reductive dechlorination, a parent compound loses a chlorine atom and converts to a daughter compound (e.g. TCE to DCE). Because of the extra chlorine atom, the

parent compound on a weight basis weighs more than the daughter compound. However, in this conversion from parent to daughter example, one molecule of TCE produces one molecule of DCE and are therefore equal on a molar basis. In our analysis, the total moles only decrease once the parent-daughter compounds have been converted to ethene in the case of chloroethenes and ethane in the case of chloroethanes, and/or have been mineralized to benign end products (i.e., carbon dioxide, water, and chloride ions). Therefore, a decreasing trend in total moles provides evidence of complete mineralization of CVOC compounds. Conversely, an increasing trend in total moles might indicate potential new or episodic releases within a plume.

Using a molar-based approach, we can also evaluate the molar fractions of individual parent-daughter compounds. As parent compounds degrade to daughter compounds, the molar fraction of the parent compounds decreases while the fraction of daughter compounds increases. Therefore, observing the molar fractions of the individual constituents along with the trend in total moles can provide further insight into various attenuation processes that may be occurring on the Site. For example, a decreasing trend in total moles with an increasing fraction of a daughter compound (i.e. cis-1,2-DCE) may indicate evidence of biological reductive dechlorination. Whereas a decreasing trend in total moles with individual constituent fractions that remain relatively constant may indicate the occurrence of non-selective destructive processes such as abiotic chemical reduction, anthropogenic recovery, or other non-biological processes.

### 3.3 Ricker Method<sup>®</sup> Spatial Change Indicator<sup>™</sup> Methodology

The Ricker Method<sup>®</sup> Spatial Change Indicator<sup>™</sup> evaluation (US Pat. No. 10,400,583) shows relative changes in the plume over time. For this analysis, each plume map in a particular series is compared to the first plume map in the series by subtracting from a selected reference date to create a new isopleth map that shows areas of the plume that decreased in concentration (indicated by blue shading), increased in concentration (indicated by red shading), or did not change (indicated by clear or no shading). The visual aspect of this analysis allows the viewer to observe patterns of plume behavior over time.

This analysis also has a quantitative component. Each Ricker Method<sup>®</sup> Spatial Change Indicator<sup>™</sup> map also includes the percent change (increase or decrease) of the plume between each event and the baseline event in terms of area, average concentration, and mass indicator as calculated using Ricker Method<sup>®</sup> procedures. Additionally, for areas that increased or decreased in mass indicator, representative magnitudes of mass increase (red shaded areas)



and mass decrease (blue shaded areas) are included on each map. A Spatial Change Indicator™ analysis for total chloroethenes and total chloroethanes is included in Appendix G.

#### 4.0 GROUNDWATER PLUME ANALYTICS® RESULTS

One of the primary benefits of the Groundwater Plume Analytics® process is the conversion of data into graphical and video outputs that make data more understandable. The following is provided as a textual summary of the visual outputs. The full graphical displays and analyses, including plume map videos, COM evaluation maps, molar trend and molar fraction evaluations, and the Spatial Change Indicator™ results are included in Appendix G.

A Ricker Method® Plume Stability Analysis was conducted for the Site using groundwater data for each of the constituents from 1999 to 2020. Throughout Site history, numerous remedial efforts and groundwater monitoring well installations were performed. April 2008 is significant because it marked the end of anthropogenic remedial activities for the Site since that time. Because of various remedial efforts and monitoring well network expansions that occurred prior to April 2008, a consistent data set was not available. Therefore, statistical trends were performed on the data from September 2008 through April 2020. September 2008 was selected as the start date to evaluate plume characteristics since the cessation of anthropogenic remedial activities. Statistical trends were also performed on the data from February 2017 through April 2020. This date range was selected to provide insight into more recent plume behavior. Note that trends are not provided for 1,2-DCA for the September 2008 through April 2020 timeframe and 1,1,2-TCA, and 1,1,1-TCA for the February 2017 through April 2020 timeframe due to the limited number of detected results.

Because the early well network consisted of only a few wells, the analysis was conducted inside a prescribed “window” or analytics boundary to have a consistent view of plume behavior over time. This plume window is defined by the lateral extents of the current monitoring well network and the plume contours were truncated at the boundary of the window. As mentioned above, the full graphical displays including plume maps, plume-stability-metric charts with trends, Spatial Change Indicators™ and COM figures are available in Appendix G. The results are summarized in the following sections.

The following table summarizes the plume stability trends for area, average concentration and mass indicator from September 2008 through April 2020.

**Ricker Method® Plume Stability Results (September 2008 – April 2020)**

<b>Constituent</b>	<b>Area</b>	<b>Average Concentration</b>	<b>Mass Indicator</b>
PCE	Decreasing	Decreasing	Decreasing
TCE	Decreasing	Decreasing	Decreasing
Cis-1,2-DCE	Decreasing	Decreasing	Decreasing
Trans-1,2-DCE	Decreasing	Decreasing	Decreasing
1,1-DCE	Decreasing	Decreasing	Decreasing
Vinyl Chloride	Decreasing	Decreasing	Decreasing
<b>Total Chloroethenes</b>	Decreasing	Decreasing	Decreasing
1,1,2-TCA	Decreasing	Decreasing	Decreasing
1,1,1-TCA	Decreasing	Decreasing	Decreasing
1,2-DCA	NA	NA	NA
1,1-DCA	Decreasing	Decreasing	Decreasing
<b>Total Chloroethanes</b>	Decreasing	Decreasing	Decreasing
<b>Toluene</b>	Decreasing	Decreasing	Decreasing
<b>Ethylbenzene</b>	Decreasing	Decreasing	Decreasing
<b>Xylenes</b>	Decreasing	Decreasing	Decreasing

The following table summarizes the plume stability trends for area, average concentration and mass indicator from February 2017 through April 2020

**Ricker Method® Plume Stability Results (February 2017 – April 2020)**

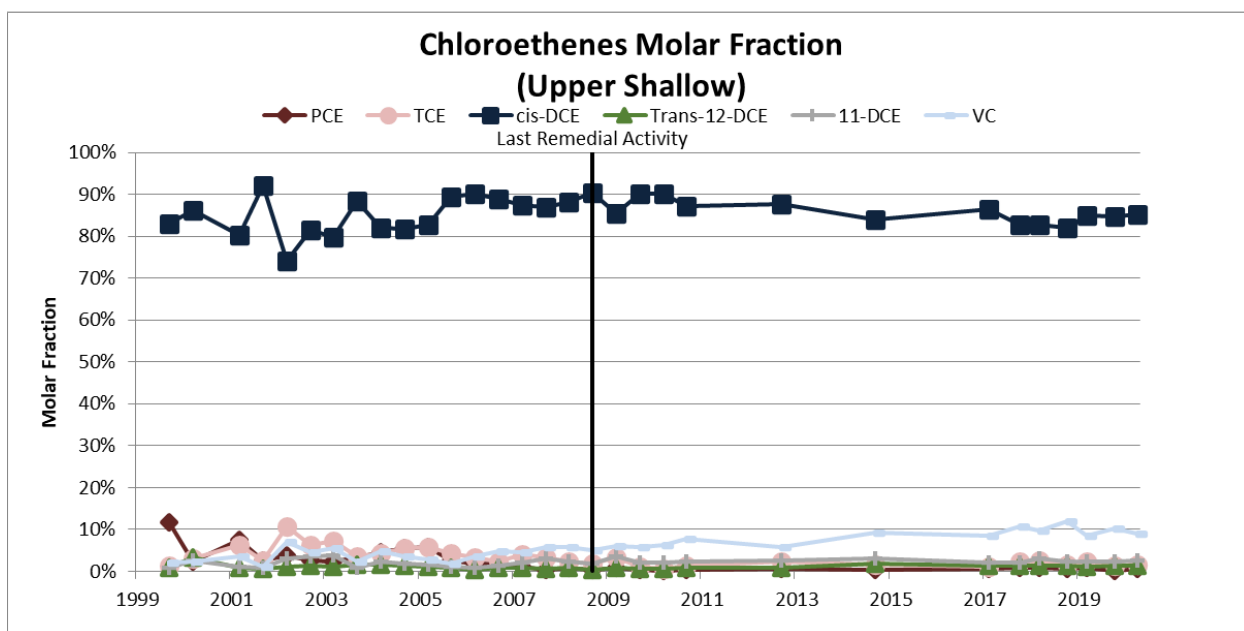
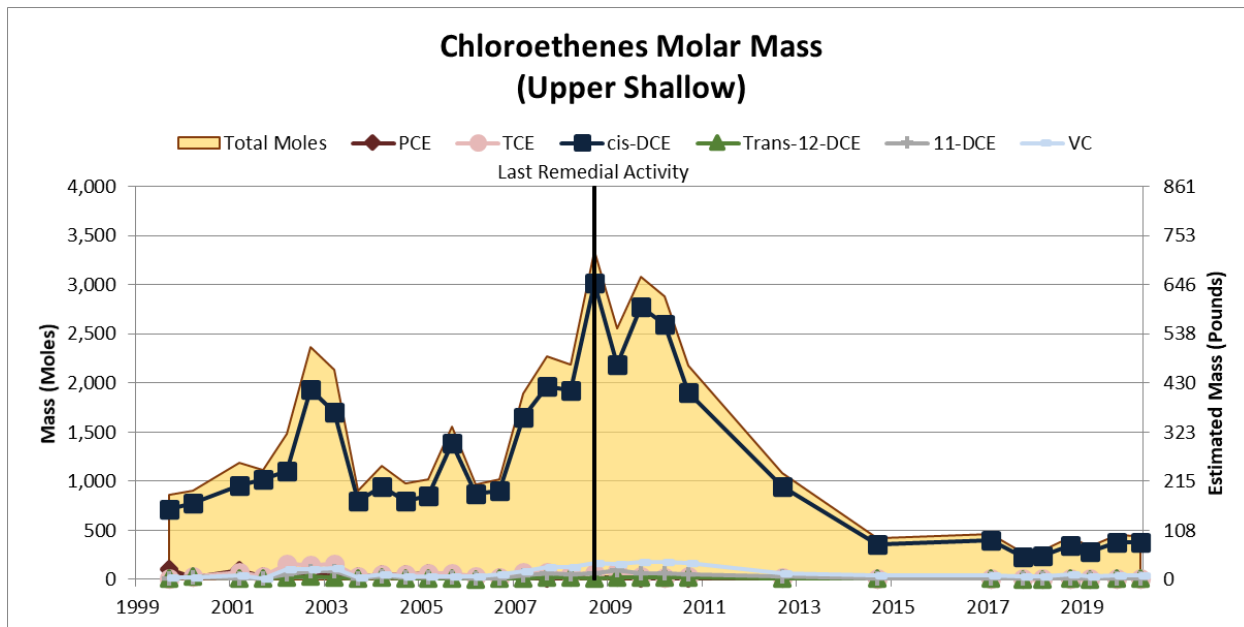
<b>Constituent</b>	<b>Area</b>	<b>Average Concentration</b>	<b>Mass Indicator</b>
PCE	Stable	Stable	Stable
TCE	Increasing	Stable	Stable
Cis-1,2-DCE	Stable	Stable	Stable
Trans-1,2-DCE	Stable	Stable	Stable
1,1-DCE	Stable	Stable	Stable/Increasing
Vinyl Chloride	Stable	Stable	Stable
<b>Total Chloroethenes</b>	Stable	Stable	Stable
1,1,2-TCA	NA	NA	NA
1,1,1-TCA	NA	NA	NA
1,2-DCA	Stable/Increasing	Increasing	Increasing
1,1-DCA	Stable	Stable	Stable
<b>Total Chloroethanes</b>	Stable	Stable	Stable
<b>Toluene</b>	Stable	Stable	Stable
<b>Ethylbenzene</b>	Stable/Increasing	Increasing	Increasing
<b>Xylenes</b>	Stable	Increasing	Increasing

The results summarized above indicate that the chloroethene, chloroethane, and aromatic hydrocarbon (toluene, ethylbenzene, and xylenes) plumes are all decreasing since September 2008.

Since February 2017, except for 1,2-DCA, ethylbenzene, and xylenes which are increasing, the other constituent plumes are stable (i.e. no trend). Additional observations of each of these plumes are discussed further below.

#### 4.1 Chloroethenes

The results of this analysis indicate that the total chloroethene plume, on a molar basis, exhibited a strong decreasing trend following the last remedial activity in 2008, as observed in the figure below. From 2017 to April 2020, the total chloroethene plume demonstrated a stable trend in molar mass. It is noted that the total chloroethene plume (indicated by the solid yellow plot on the graph below) is in units of moles on the primary y axis. Additionally, the individual constituent molar fractions are shown in the second graph below.

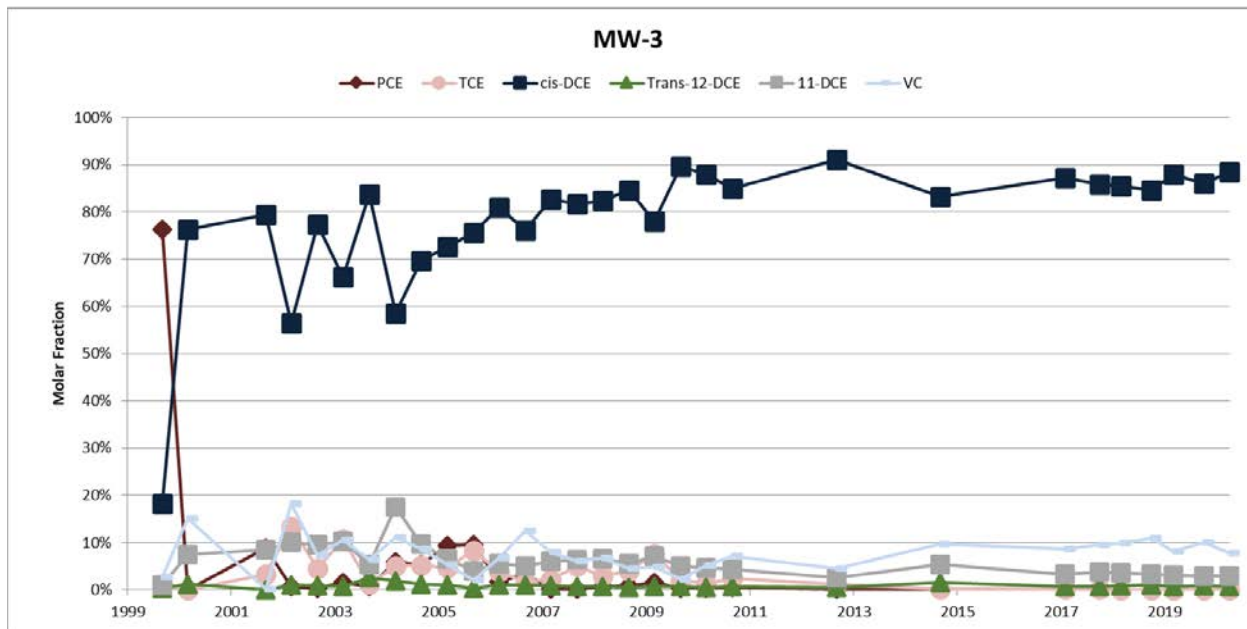
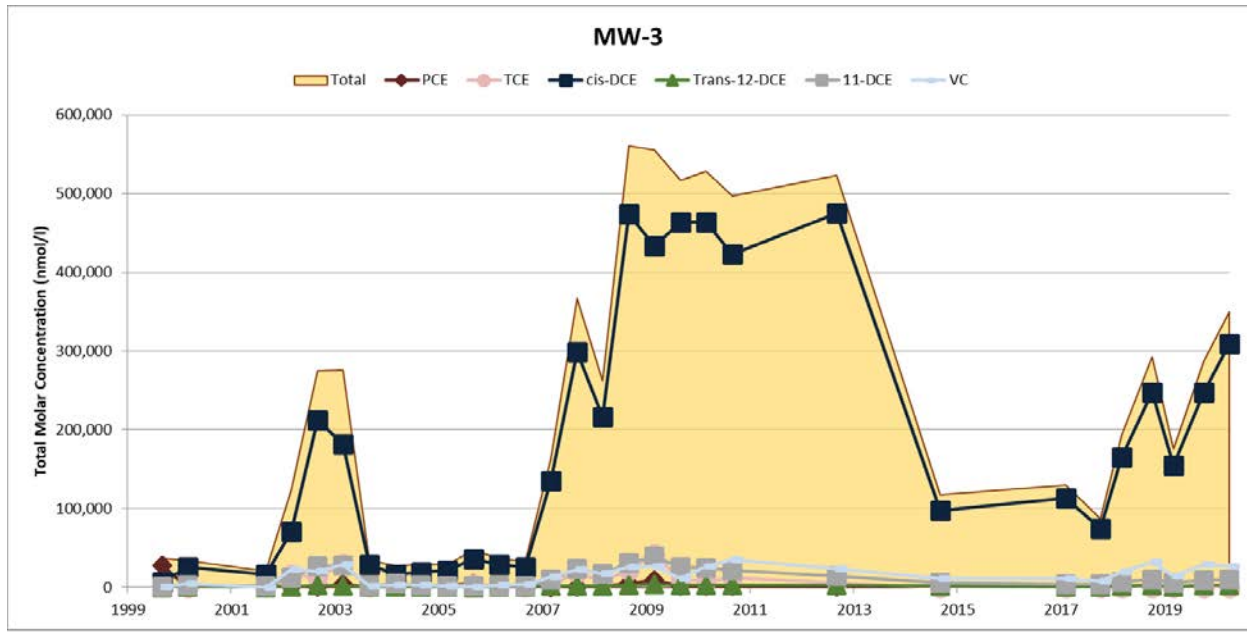


The molar fractions above demonstrate that in addition to the strong decreasing trend in mass since September 2008, the predominate constituent of the chloroethene plume is cis-1,2-DCE. As observed, cis-1,2-DCE represents roughly 80% to 90% of the total chloroethene plume on a molar basis. It is known that during biological reductive dechlorination, the vast majority of dichloroethene (DCE) produced by the breakdown of PCE to TCE and eventually to DCE will occur as cis-1,2-DCE. Therefore, the presence of a high percentage of cis-1,2-DCE is a strong indicator that reductive dechlorination has occurred at the Site. The rapid reduction in total moles from 2008 to 2015 is likely the result of various in-situ remediation events that occurred at the

Site. The stable trend in total chloroethenes molar-mass since 2015 suggest that natural attenuation processes at the Site are maintaining plume stability.

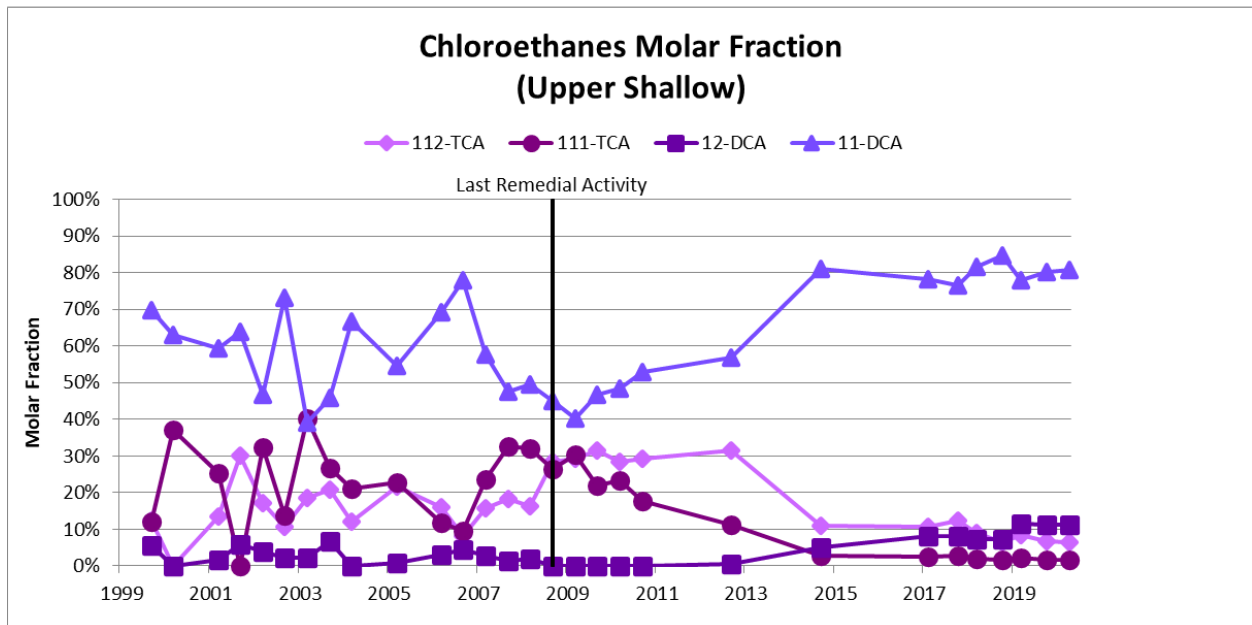
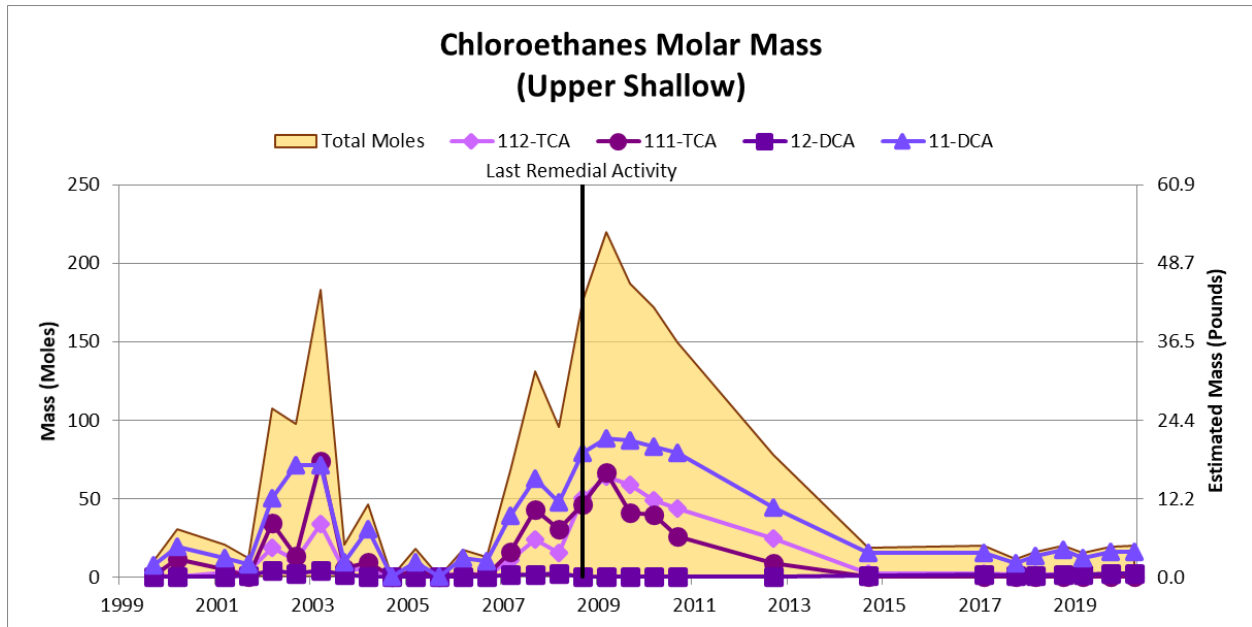
The Ricker Method<sup>®</sup> Spatial Change Indicator<sup>™</sup> analysis comparing September 2008 to April 2020 shows decreases in area, average concentration and mass indicator of 7%, 86%, and 87%, respectively. The Ricker Method<sup>®</sup> Spatial Change Indicator<sup>™</sup> analysis comparing February 2017 to April 2020 indicates that the area, average concentration and mass indicator of the plume has decreased 2%, 3%, and 5%, respectively. However, the Spatial Change Indicator<sup>™</sup> depicts an increase in chloroethene concentrations proximal to MW-3. Despite the recent concentration increase near MW-3, the plume continues to be stable and delineated.

The molar concentrations and molar fractions of the chloroethenes in MW-3, depicted below, explain that this increase is primarily cis-1,2-DCE. It is important to note that there are no indications of significant increases in the parent compounds PCE and TCE, thus indicating that there is not a “new release”. The increase in concentrations observed in MW-3 may possibly be attributed to a rise in groundwater elevations across the Site as discussed further in Section 4.5.



## 4.2 Chloroethanes

The results of this analysis indicate that the total chloroethane plume, on a molar basis, is also decreasing since September 2008, as observed by the decreasing trend in total moles in the figure below.

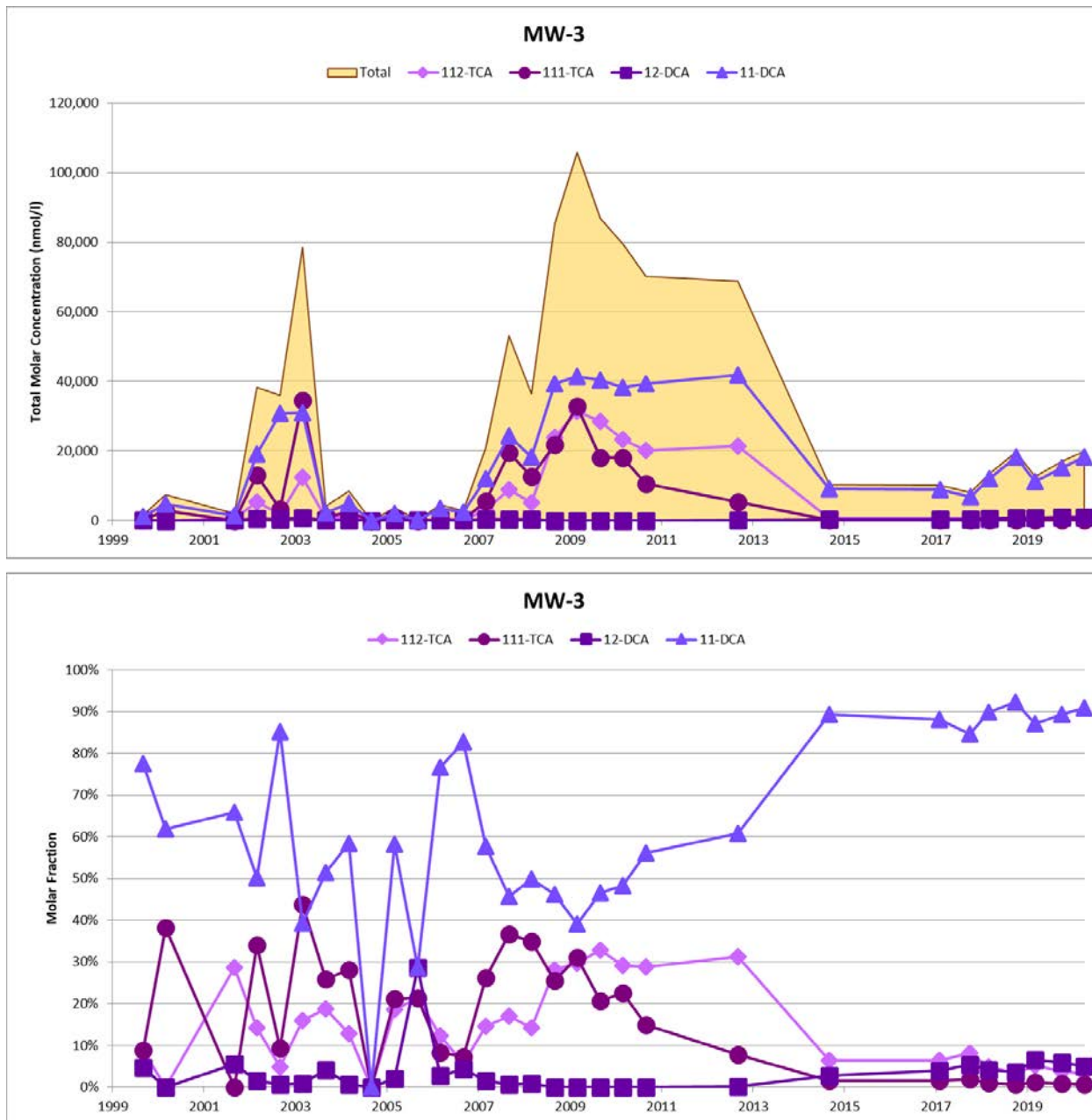




Similar to the chloroethenes, the chloroethanes exhibit patterns consistent with a plume undergoing reductive dechlorination. Since the cessation of anthropogenic remedial activities, the fractions of 1,1,2-TCA and 1,1,1-TCA (parent compounds) are showing a decreasing trend while the daughter products 1,2-DCA and 1,1-DCA are increasing in molar fraction. The combination of decreasing total moles with decreasing parent fraction and increasing daughter fraction is a good indication of biological reductive dechlorination.

The Ricker Method<sup>®</sup> Spatial Change Indicator<sup>™</sup> analysis comparing September 2008 to April 2020 for the total chloroethanes shows that the area, average concentration, and mass indicator have decreased 20%, 86%, and 89%, respectively. The Ricker Method<sup>®</sup> Spatial Change Indicator<sup>™</sup> analysis comparing February 2017 to April 2020 shows that the area has decreased by 16% while the average concentration has increased by 21% while the overall plume mass has only increased 1%. Similar to the chloroethenes, there is an increase in chloroethanes near MW-3. Despite the recent concentration increase near MW-3, the plume continues to be stable and delineated.

The molar concentrations and molar fractions of the chloroethanes in MW-3, depicted below, explain that this increase is primarily 1,1-DCA. It is important to note that there are no indications of significant increases in the parent compounds 1,1,1-TCA and 1,1,2-TCA, thus indicating that there is not a “new release”. The similar pattern between the chloroethenes and chloroethanes, observed in MW-3, support that the cause of the rebound may be related to a rise in groundwater elevations rather than a new source, discussed further in Section 4.5.



### 4.3 Aromatic Hydrocarbons

Toluene, ethylbenzene and xylenes exhibit decreasing plume stability trends from September 2008 to April 2020. However, for the February 2017 to April 2020 period, the plume stability trends for ethylbenzene and xylenes are increasing. However, we note that most of the aromatic hydrocarbons are detected at MW-3. Additionally, the only concentration exceeding US EPA MCLs for toluene, ethylbenzene or xylenes during the April 2020 event is the ethylbenzene

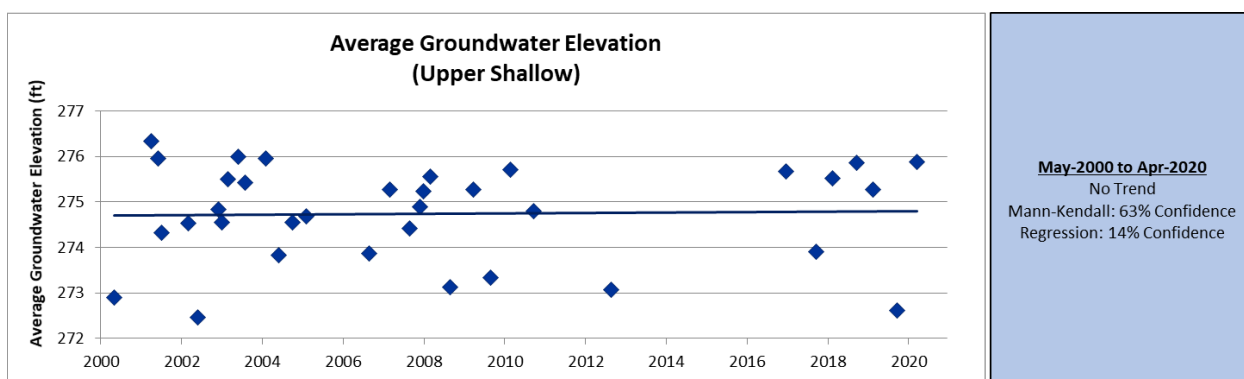
concentration for MW-3, which was measured at 820 µg/L (MCL 700 µg/L), which is below the historical high of 1,300 µg/L observed in this well. The concentration pattern for ethylbenzene in MW-3 is similar to the pattern for the chloroethenes and chloroethanes discussed above. The consistency of the pattern between these families of compounds further suggests that a rise in groundwater elevation at the Site may account for the slight rebound in concentrations in MW-3 as discussed further below.

#### 4.4 MNA Parameters

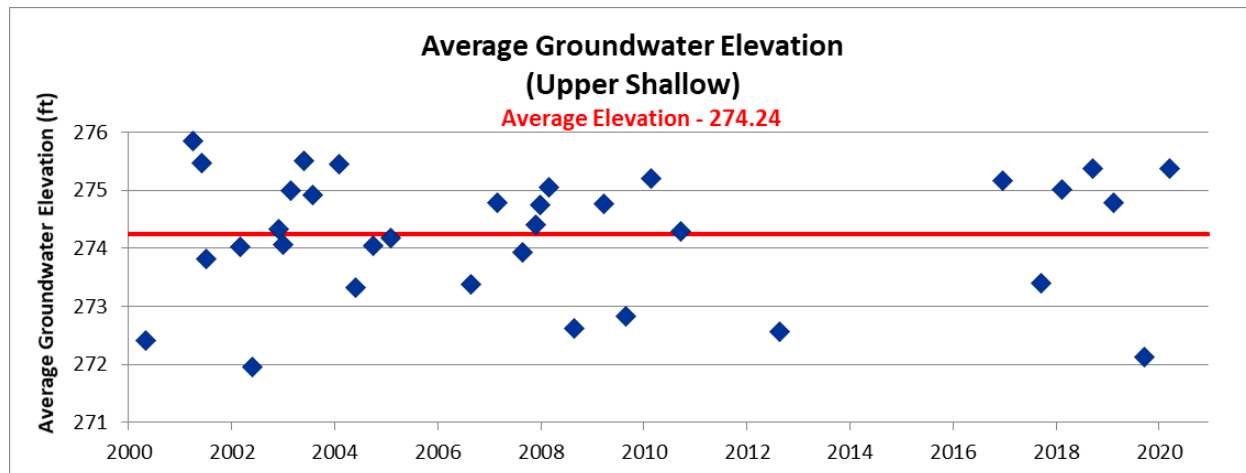
Isopleth maps were produced for each of the MNA parameters analyzed (dissolved oxygen, ORP, ferrous iron, methane, ethane, ethene, and total organic carbon). The MNA isopleths show strong correlation and patterns that provide evidence that biological degradation is occurring. For example, there is evidence of biodegradation through the observation of the metabolic byproducts methane, ethane, and ethene, and reducing conditions as evidenced by negative oxidation-reduction potential and low dissolved oxygen. The location of the metabolic byproducts and reducing conditions correspond to the highest concentration portion of the CVOC plumes, indicating that an MNA solution for the plumes could be a viable remedial approach. Additionally, the co-location of the aromatic hydrocarbon plumes with the CVOC plumes may prove beneficial from the standpoint that the aromatic hydrocarbons are providing a carbon-source for the anaerobic degradation of the CVOCs, which the evidence supports is occurring. MNA isopleths are included in Appendix G.

#### 4.5 Groundwater Elevation Trend and Correlation

Groundwater elevations were also evaluated to assess a potential relationship between groundwater elevations and variability observed in concentration data. Groundwater data from May 2000 through April 2020 were contoured using kriging, and the average groundwater elevation was determined for each event using Ricker Method® techniques. These data were plotted to assess temporal trends in average groundwater elevation for the Site. As shown below, no trend in groundwater elevation from May 2010 to April 2020 is apparent for the Site, suggesting that the variability in groundwater elevation at the Site is seasonal in nature and not a sustained rise or fall of the regional groundwater level. It is noted that there is approximately four feet of variability in the average groundwater elevation over the time-period analyzed.



The figure below depicts the Site average groundwater elevation for each event in relation to the historical average groundwater elevation for the Site from May 2000 through April 2020. The Site historical average groundwater elevation is 274.24 ft. The April 2020 average groundwater elevation was 275.38 ft, which is 1.14 ft above the historical average. A prolonged above-average groundwater elevation has the potential to liberate contaminants bound up in the vadose zone by way of diffusion. This intermittent diffusion may serve as a useful mechanism for depleting the residual mass in a former source area by transporting contaminants to the groundwater where they can be degraded via biological reductive dechlorination. And, the evidence shows that biological reductive dechlorination processes are occurring.



#### 4.6 Lower Shallow Aquifer Wells (i.e. “D” wells)

As mentioned previously, a Groundwater Plume Analytics® plume analysis could not be conducted for the four deeper wells. In instances where this occurs due to lack of a “plume” over the well network, a well-by-well depiction of data can be presented. Appendix G presents a well-by-well display of the four lower shallow aquifer wells (MW-1D, MW-2D, MW-3D, and MW-4D).

The data show that wells MW-2D and MW-3D did not have detectable concentrations of CVOCs in the most recent sampling event other than an estimated value of 0.69 µg/L of chloroform in MW-3D. MW-1D had detectable concentrations of PCE (above the MCL) and TCE (below the MCL). MW-4D had a detectable level of PCE above the MCL and a non-detect result for TCE. As described in Section 2.1, the integrity of the casing for well MW-4D is questionable at 20 and 30 feet potentially allowing shallow-impacted groundwater to discharge into the well. Therefore, CVOC concentrations in MW-4D may be attributed to the breach in the well casing. COVC concentrations in MW-1D have oscillated over time, but do not appear to be in an increasing trend. Further evaluation of CVOCs for both MW-1D and MW-4D are warranted to observe whether more pronounced trends can be established for these two wells.

#### 4.7 Summary

Based on the Groundwater Plume Analytics® analysis conducted on the upper shallow aquifer wells as described herein, it appears that both the chloroethene and chloroethane plumes are stable and show strong evidence of attenuation through natural processes, primarily through reductive dechlorination. The upper shallow aquifer plume is also delineated by the boundary

wells surrounding the plume. Additionally, the aromatic hydrocarbon plumes also appear to be attenuating and are probably serving as a carbon source for reducing bacteria. Lastly, there does appear to be a recent strong correlation between CVOC concentrations and groundwater levels at the Site. Therefore, fluctuations or variability in the CVOC data may be influenced by groundwater levels. This correlation can be evaluated further with future temporal data.

Only two of the deeper wells have CVOC detections and therefore a plume analysis could not be conducted for these two wells.

## 5.0 RECOMMENDATIONS

Based on the decreasing trends of total chloroethenes, total chloroethanes, and aromatic hydrocarbons observed in the upper shallow aquifer at the Site; the lack of parent-product sourcing; and the delineation of the plume by perimeter groundwater monitoring wells in the upper shallow aquifer, the current data strongly support that a monitored natural attenuation remedy would be appropriate and worth pursuing as the Site remedy for the upper shallow aquifer. Additionally, we do not believe the data suggests that any further investigation within the upper shallow aquifer plume boundaries is warranted. As shown in the Groundwater Plume Analytics® presentation, it is our opinion that the current monitoring well network in the upper shallow aquifer is sufficient to evaluate plume behavior. Therefore, we recommend monitored natural attenuation as the remedy going forward for the shallow aquifer. As part of this remedy, the stability of the various groundwater plumes will continue to be evaluated.

For monitoring wells MW-1D and MW-4D in the deep aquifer, we recommend continued monitoring. Additionally, due to the potential breaches in the MW-4D well casing at 20 and 30 feet, it may be appropriate to abandon and replace this well. Alternatively, and if feasible, MW-4D can be abandoned and in lieu of installing a new well, perhaps a deep groundwater grab sample can be obtained through direct-push techniques.

Lastly, due to the visual nature of Plume Analytics®, Lennox strongly recommends that a meeting be held to present the results of the Groundwater Plume Analytics® services to DHEC. This meeting should be held prior to final DHEC review of this document.

## 6.0 REFERENCES

Air Force Center for Environmental Excellence (AFCEE), March 2006, Monitoring and Remediation Optimization System (MAROS) SOFTWARE Version 2.2 User's Guide

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Ricker, J.A. 2008. A Practical Method to Evaluate Ground Water Contaminant Plume Stability. *Groundwater Monitoring & Remediation* 28, no. 4: 85–94

USEPA. 2008. Contract Laboratory Program National Functional Guidelines for Organic Data Review. U.S. Environmental Protection Agency Office of Emergency and Remedial Response. EPA540/R-99/008. June 2008.

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## **TABLES**



**TABLE 1. GROUNDWATER MONITORING WELL CONSTRUCTION DETAILS**

Former Ducane Company Site  
 Blackville, Barnwell County, South Carolina  
 BLWM File # 401356

Monitoring Well	Installation Date	Well Completion	Ground Surface Elevation feet, NAVD	Top of Casing (TOC) Elevation feet, NAVD	Screened Interval feet, bgs		Screen Length feet	Well Depth feet, bgs	Total Boring Depth feet, bgs
					Top	Bottom			
MW-1	09/01/99	Stick-up	279.09	282.05	5	20	15	20	30
MW-1D	09/01/99	Stick-up	279.08	282.08	48	53	5	53	53
MW-2	09/01/99	Stick-up	274.76	277.71	5	15	10	15	20
MW-2D	09/02/99	Stick-up	274.72	277.61	39	44	5	44	44
MW-3	09/01/99	Stick-up	277.09	279.68	5	15	10	15	15
MW-3D	09/02/99	Stick-up	277.11	279.94	20	25	5	25	25
MW-4	09/01/99	Stick-up	276.89	279.74	8	18	10	18	20
MW-4D	06/25/01	Stick-up	277.05	279.91	72	82	10	82	96
MW-5	05/12/00	Flush	280.23	279.85	15	20	5	20	20
MW-6R	09/24/12	Flush	277.24	277.73	5	15	10	15	15
MW-7	03/26/01	Stick-up	277.65	280.76	2	12	10	12	12
MW-8	03/27/01	Flush	277.11	276.83	2	12	10	12	12
MW-9	03/28/01	Stick-up	278.76	279.66	2	12	10	12	12
MW-10	03/28/01	Stick-up	276.70	278.12	2	12	10	12	12
MW-11	03/28/01	Stick-up	279.56	280.64	2	12	10	12	12
MW-12	03/28/01	Stick-up	NA	NA	2	12	10	12	12
MW-13	10/14/02	Stick-up	NA	NA	3	10	7	10	10
MW-14	10/14/02	Stick-up	278.98	280.81	2	12	10	12	12
MW-15	09/24/12	Stick-up	280.68	282.82	9	19	10	19	20
MW-16	10/18/17	Stick-up	275.31	278.48	9.93	19.57	9.64	20.00	20.07
MW-17	10/17/19	Stick-up	282.14	285.28	20.16	29.80	9.64	30.15	30.15

**Notes**

bgs - below ground surface

NAVD - North American Vertical Datum of 1988

Well construction information obtained from boring logs or the Groundwater and Soil Assessment Report, dated January 2013.

Elevations based on survey by American Engineering Consultants, Inc. dated November 12, 2017; Well MW-17 surveyed on 10/18/19.

NA - not available; wells MW-12 and MW-13 could not be located

Prepared by: TJM 11/19/19

Checked by: CDN 01/16/20

**TABLE 2. GROUNDWATER LEVEL MEASUREMENTS**

Former Ducane Company Site  
Blackville, Barnwell County, South Carolina  
BLWM File # 401356

Monitoring Well	Top of Casing (TOC) Elevation feet, NAVD	April 20, 2020	
		Depth to Water feet below TOC	Groundwater Elevation feet
MW-1	282.05	5.71	276.34
MW-1D	282.08	8.45	273.63
MW-2	277.71	2.53	275.18
MW-2D	277.61	4.15	273.46
MW-3	279.68	3.57	276.11
MW-3D	279.94	4.20	275.74
MW-4	279.74	6.20	273.54
MW-4D	279.91	9.20	270.71
MW-5	279.85	5.42	274.43
MW-6R	277.73	0.92	276.81
MW-7	280.76	4.25	276.51
MW-8	276.83	0.20	276.63
MW-9	279.66	no access	NC
MW-10	278.12	3.79	274.33
MW-11	280.64	6.32	274.32
MW-14	280.81	6.22	274.59
MW-15	282.82	5.54	277.28
MW-16	278.48	3.58	274.90
MW-17	285.28	8.49	276.79

**Notes**

NAVD - North American Vertical Datum of 1988

NC - elevation not calculated

Prepared by: TJM 5/1/20

Checked by: CDN 6/1/20

**TABLE 3. FIELD PARAMETERS**  
Former Ducane Company Site  
Blackville, Barnwell County, South Carolina  
BLWM File # 401356

Monitoring Well	Sample Date	Purge Volume Gallons	Temperature °C	pH Standard Units	Dissolved Oxygen mg/L	ORP mV	Conductivity µs/cm	Turbidity NTU	Ferrous Iron mg/L
MW-1	4/21/20	0.65	22.00	5.55	1.31	-248.0	114	2.02	1.42
MW-1D	4/21/20	1.15	23.53	6.26	3.96	-20.1	18	1.33	0.05
MW-2	4/22/20	1.00	19.61	5.11	2.03	-99.9	60	2.82	0.00
MW-2D	4/22/20	1.00	21.50	6.28	3.48	-9.9	26	0.88	0.00
MW-3	4/21/20	2.50	19.40	5.08	2.71	-187.3	39	1.11	0.37
MW-3D	4/21/20	3.00	19.90	4.91	4.75	131.3	28	0.50	0.00
MW-4	4/22/20	2.50	17.00	5.29	0.58	25.3	32	7.69	0.00
MW-4D	4/21/20	3.50	20.32	4.16	3.61	-9.7	78	9.60	0.04
MW-5	4/22/20	0.65	17.90	5.11	1.69	-185.1	115	4.81	0.10
MW-6R	4/21/20	1.25	18.42	6.52	2.93	-162.8	48	1.12	0.02
MW-7	4/21/20	0.65	18.40	6.46	1.39	91.0	-304.7	9.89	0.01
MW-8	4/21/20	0.50	16.82	6.03	1.89	-281.6	158	5.62	0.04
MW-10	4/22/20	1.75	17.00	4.81	0.55	74.7	68	1.51	1.96
MW-11	4/22/20	1.25	18.65	5.72	7.80	19.5	26	4.97	2.08
MW-14	4/22/20	0.85	18.20	5.44	1.89	-233.70	46	6.21	3.30
MW-15	4/21/20	1.50	18.40	6.19	0.56	-218.4	106	2.52	0.01
MW-16	4/21/20	2.50	17.80	4.46	4.21	136.8	101	1.06	0.01
MW-17	4/21/20	2.50	17.82	5.15	5.86	87.8	162	4.66	0.00

**Notes**

mg/L - milligrams per liter

mV - millivolts

µs/cm - microsiemens per centimeter

NTU - nephelometric turbidity units

Prepared by: TJM 5/1/20

Checked by: CDN 6/2/20

**TABLE 4. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - ORGANICS**

Former Ducane Company Site  
 Blackville, Barnwell County, South Carolina  
 BLWM File # 401356

Constituent (ug/L)		Acetone	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Ethylbenzene	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride	Xylenes (total)	1,4-Dioxane*
MCL (ug/L)		NA	80**	NA	5	7	70	100	700	5	1000	5	5	2	10000	NA
RSL (ug/L)		1400	0.22	2.8	--	--	--	--	--	--	--	--	--	--	--	0.46
Well	Date Sampled															
MW-1	4/21/20	<200	<10	<10	<10	<10	<b>670</b>	<10	<b>24</b>	<10	<10	<10	<10	<b>24</b>	<b>110</b>	<1.0
MW-1D	4/21/20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<b>16</b>	<1.0	<1.0	<b>4.2</b>	<1.0	<1.0	<1.0
MW-2	4/22/20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-2D	4/22/20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-3	4/21/20	<10,000	<500	<b>1800</b>	<500	<b>990</b>	<b>30000</b>	<b>260 J</b>	<b>820</b>	<500	<b>220 J</b>	<500	<500	<b>1700</b>	<b>3300</b>	<b>410</b>
MW-3D	4/21/20	<20	<b>0.69 J</b>	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-4	4/22/20	<20	<1.0	<1.0	<1.0	<1.0	<b>6.6</b>	<1.0	<1.0	<b>3.2</b>	<1.0	<b>0.61 J</b>	<b>4.5</b>	<1.0	<1.0	<1.0
MW-4D	4/21/20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<b>16</b>	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	4/22/20	<100	<5.0	<b>2.5 J</b>	<5.0	<5.0	<b>320</b>	<b>2.7 J</b>	<5.0	<b>110</b>	<5.0	<5.0	<b>170</b>	<b>5.1</b>	<5.0	<b>9.1</b>
MW-6R	4/21/20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	4/21/20	<200	<10	<10	<10	<10	<b>560</b>	<b>4.2 J</b>	<b>47</b>	<10	<10	<10	<10	<b>110</b>	<b>140</b>	<1.0
MW-8	4/21/20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<b>3.2</b>
MW-10	4/22/20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	4/22/20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-14	4/22/20	<b>8.4 J</b>	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<b>3.3</b>	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	4/21/20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	4/21/20	<20	<b>1.4</b>	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-17	4/21/20	<20	<b>0.71 J</b>	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

**Notes**

ug/L - micrograms per liter  
 < less than the noted limit of quantitation (LOQ)  
 J - estimated concentration  
 \* - 1,4-dioxane reported to the detection limit (DL)  
 \*\* - MCL for total Trihalomethanes  
 MCL - US EPA Maximum Contaminant Level  
 RSL - US EPA Regional Screening Level for Tap Water  
 NA - not available  
**Bold** - Constituent detected above LOQ or DL  
**Bold and Shaded** - Constituent detected above the RSL and/or MCL

Prepared by: CDN 4/29/20  
 Checked by: KJG 6/3/20

**TABLE 5. GROUNDWATER MNA RESULTS**

Former Ducane Company Site  
 Blackville, Barnwell County, South Carolina  
 BLWM File # 401356

Monitoring Well	Sample Date	Alkalinity mg/L	Chloride mg/L	Nitrate-N mg/L	Sulfate mg/L	Sulfide mg/L	TOC mg/L	Ethane ug/L	Ethene ug/L	Methane ug/L	Propane ug/L
MW-1	4/21/20	<20	<b>15</b>	<0.020	<b>7.0</b>	<1.0	<b>1.1</b>	<10	<b>6.4 J</b>	<b>170</b>	<15
MW-1D	4/21/20	<20	<b>2.9</b>	<b>0.024</b>	<b>0.73 J</b>	<1.0	<1.0	<10	<10	<10	<15
MW-2	4/22/20	<20	<b>6.8</b>	<b>1.7</b>	<1.0	<1.0	<1.0	<10	<10	<10	<15
MW-2D	4/22/20	<20	<b>2.6</b>	<b>0.067</b>	<b>1.2</b>	<1.0	<1.0	<10	<10	<10	<15
MW-3	4/21/20	<20	<b>52</b>	<0.020	<1.0	<b>0.99 J</b>	<b>25</b>	<b>62</b>	<b>130</b>	<b>10000</b>	<15
MW-3D	4/21/20	<20	<b>12</b>	<b>2.8</b>	<b>0.21 J</b>	<1.0	<1.0	<10	<10	<10	<15
MW-4	4/22/20	<20	<b>7.7</b>	<b>0.048</b>	<b>0.86 J</b>	<1.0	<1.0	<10	<10	<b>9.7 J</b>	<15
MW-4D	4/21/20	<20	<b>1.7</b>	<b>0.037</b>	<b>1.0</b>	<1.0	<1.0	<10	<10	<b>4.4 J</b>	<15
MW-5	4/22/20	<20	<b>16</b>	<b>0.32</b>	<b>0.58 J</b>	<1.0	<1.0	<10	<10	<b>2100</b>	<15
MW-6R	4/21/20	<20	<b>3.0</b>	<b>0.43</b>	<b>1.1</b>	<1.0	<b>4.9</b>	<10	<10	<10	<15
MW-7	4/21/20	<b>24</b>	<b>5.7</b>	<b>0.062</b>	<b>2.8</b>	<b>1.1</b>	<b>5.4</b>	<b>4.2 J</b>	<b>18</b>	<b>270</b>	<15
MW-8	4/21/20	<20	<b>8.3</b>	<b>0.015 J</b>	<b>7.3</b>	<1.0	<b>2.0</b>	<10	<10	<b>190</b>	<15
MW-10	4/22/20	<20	<b>4.5</b>	<0.020	<b>4.6</b>	<1.0	<b>1.4</b>	<10	<10	<b>32</b>	<15
MW-11	4/22/20	<b>50</b>	<b>2.9</b>	<0.020	<b>7.1</b>	<1.0	<b>2.3</b>	<10	<10	<b>140</b>	<15
MW-14	4/22/20	<20	<b>2.6</b>	<0.020	<b>4.2</b>	<1.0	<b>0.95 J</b>	<10	<10	<b>60</b>	<15
MW-15	4/21/20	<b>23</b>	<b>4.5</b>	<b>0.013 J</b>	<b>11</b>	<1.0	<1.0	<10	<10	<b>6.1 J</b>	<15
MW-16	4/21/20	<20	<b>12</b>	<b>5.8</b>	<b>0.35 J</b>	<1.0	<1.0	<10	<10	<10	<15
MW-17	4/21/20	<20	<b>8.2</b>	<b>1.8</b>	<b>0.2 J</b>	<1.0	<1.0	<10	<10	<10	<15

**Notes**

mg/L - milligrams per liter

ug/L - micrograms per liter

TOC - total organic carbon

J - estimated concentration above the detection limit (DL)

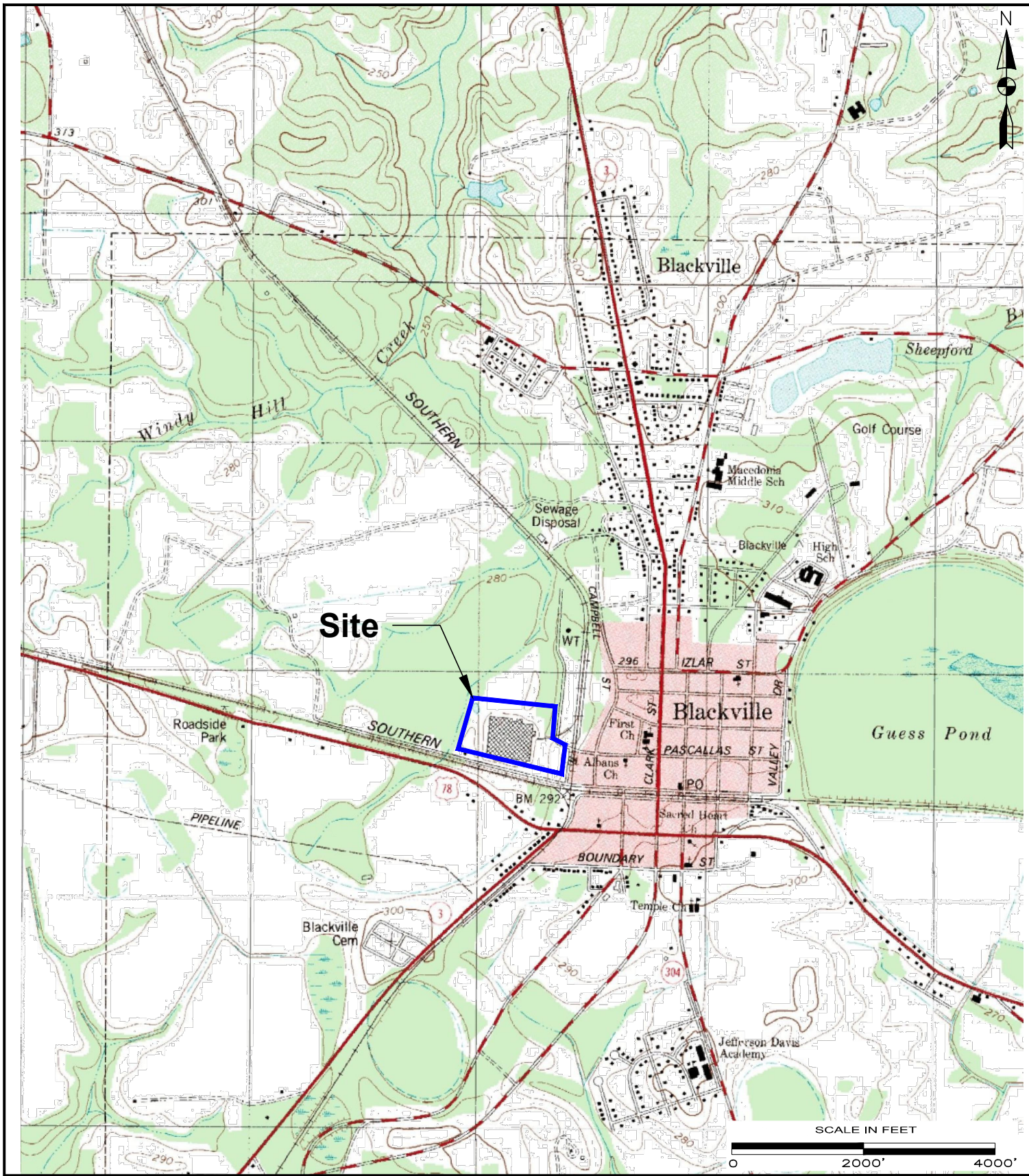
**Bold** - Constituent detected above limit of quantitation (LOQ) or DL

Prepared by: CDN 4/29/20

Checked by: KJG 6/3/20

## FIGURES

FILE NAME: s:\Premier\Projects\Lennox International\Blackville, SC\Drawings\Lennox\_Main\_2017.dwg (Site Location) 06/25/18 10:06 - hpham



FORMER DUNCANE COMPANY SITE  
 BLACKVILLE, BARNWELL COUNTY, SOUTH CAROLINA  
 BLWM FILE # 401356



SITE LOCATION MAP

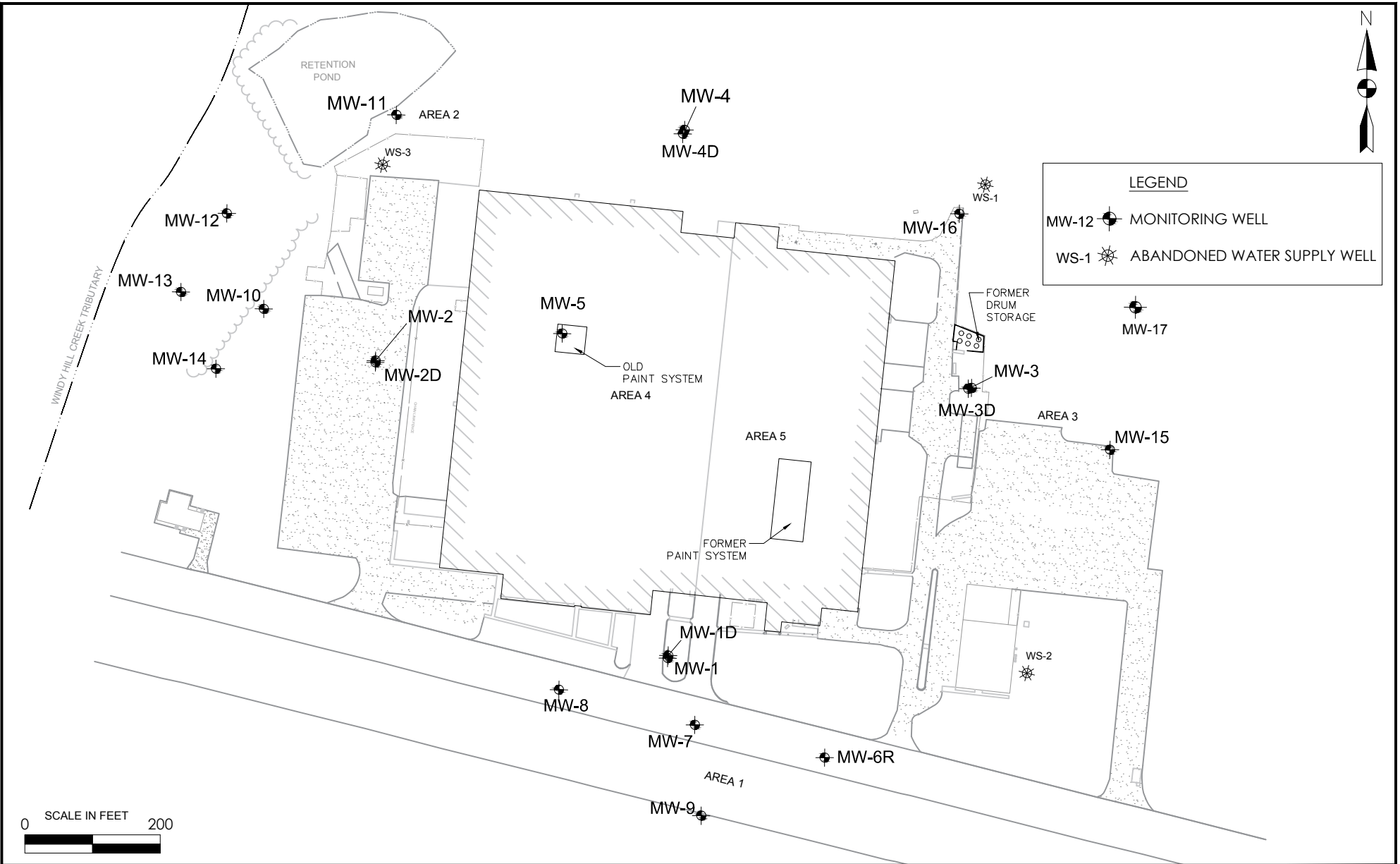
EarthCon Consultants, Inc.

1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062

PROJECT NO. 02.20160378.00

DRAWN: HVP CHECKED: RLA DATE: 06/22/2018 FIGURE: 1

FILE NAME: S:\Premier Projects\Lennox International\Blackville, SC Drawings\Lennox\_Main\_2017.dwg (Site Layout) 12/03/19 13:59 - hpham



FORMER DUNCANE COMPANY SITE  
 BLACKVILLE, BARNWELL COUNTY, SOUTH CAROLINA  
 BLWM FILE # 401356

PROJECT NO. 02.20160378.00



EarthCon Consultants, Inc.

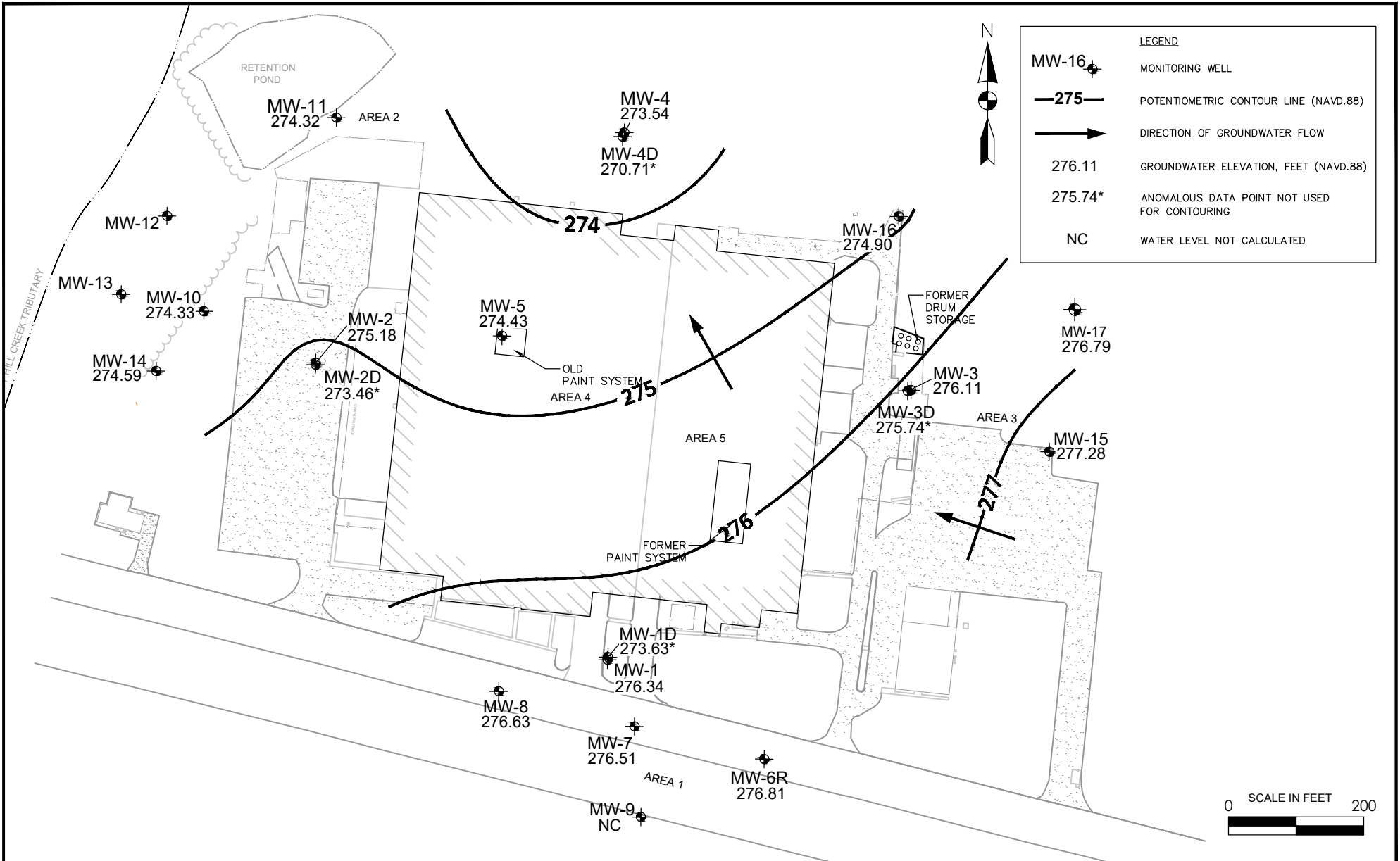
1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062

SITE LAYOUT

DRAWN:	HVP	CHECKED:	RLA	DATE:	12/03/2019	FIGURE:	2
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FORMER DUNCANE COMPANY SITE  
 BLACKVILLE, BARNWELL COUNTY, SOUTH CAROLINA  
 BLWM FILE # 401356

PROJECT NO. 02.20160378.00

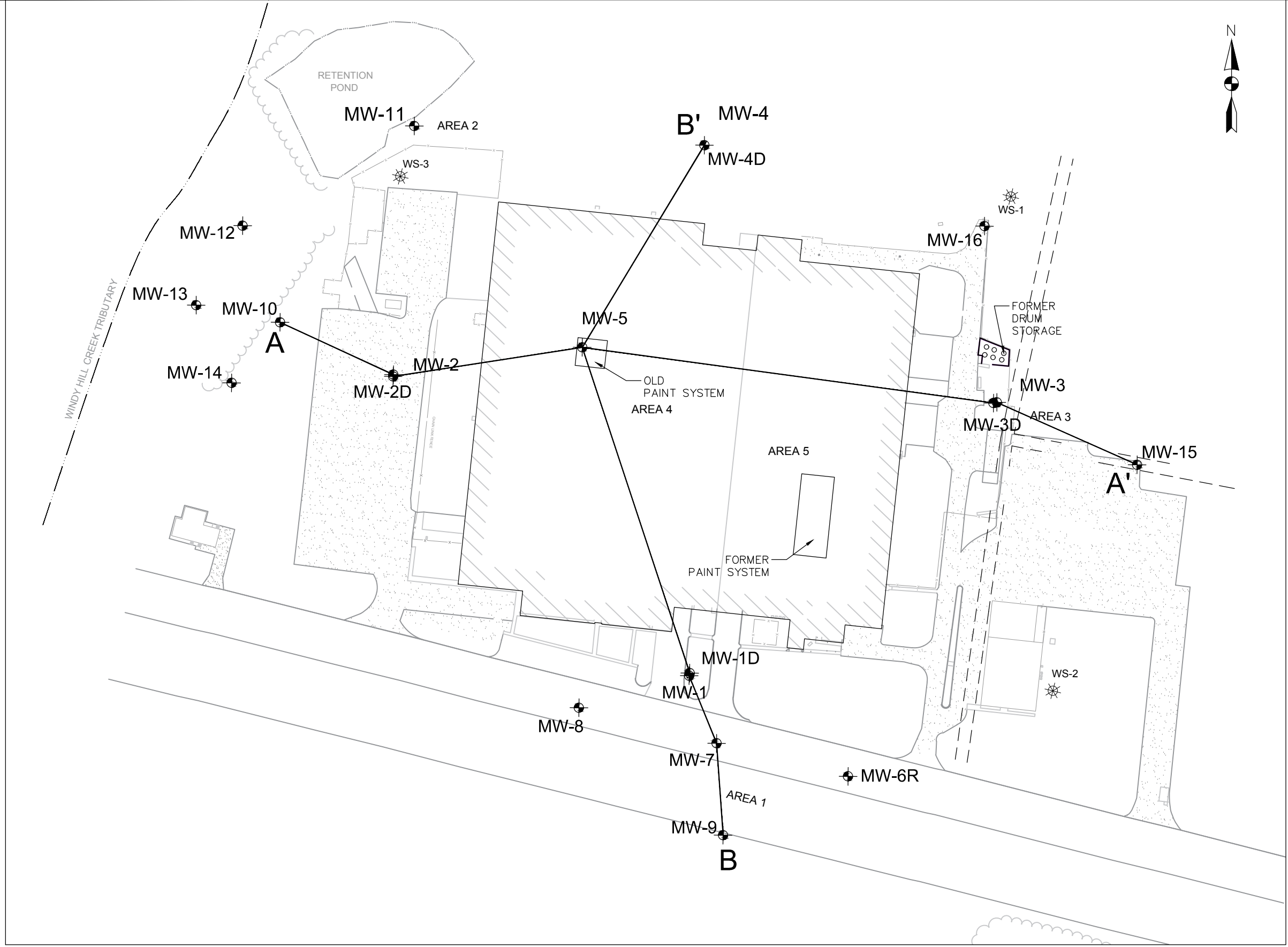


EarthCon Consultants, Inc.

1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062

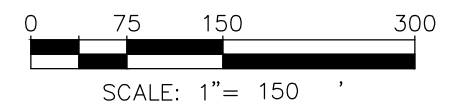
POTENTIOMETRIC SURFACE MAP  
 APRIL 2020

DRAWN: HVP	CHECKED: CDN	DATE: JULY 21, 2020	FIGURE: 3
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**LEGEND**

- MW-12 MONITORING WELL
- WS-1 ABANDONED WATER SUPPLY WELL

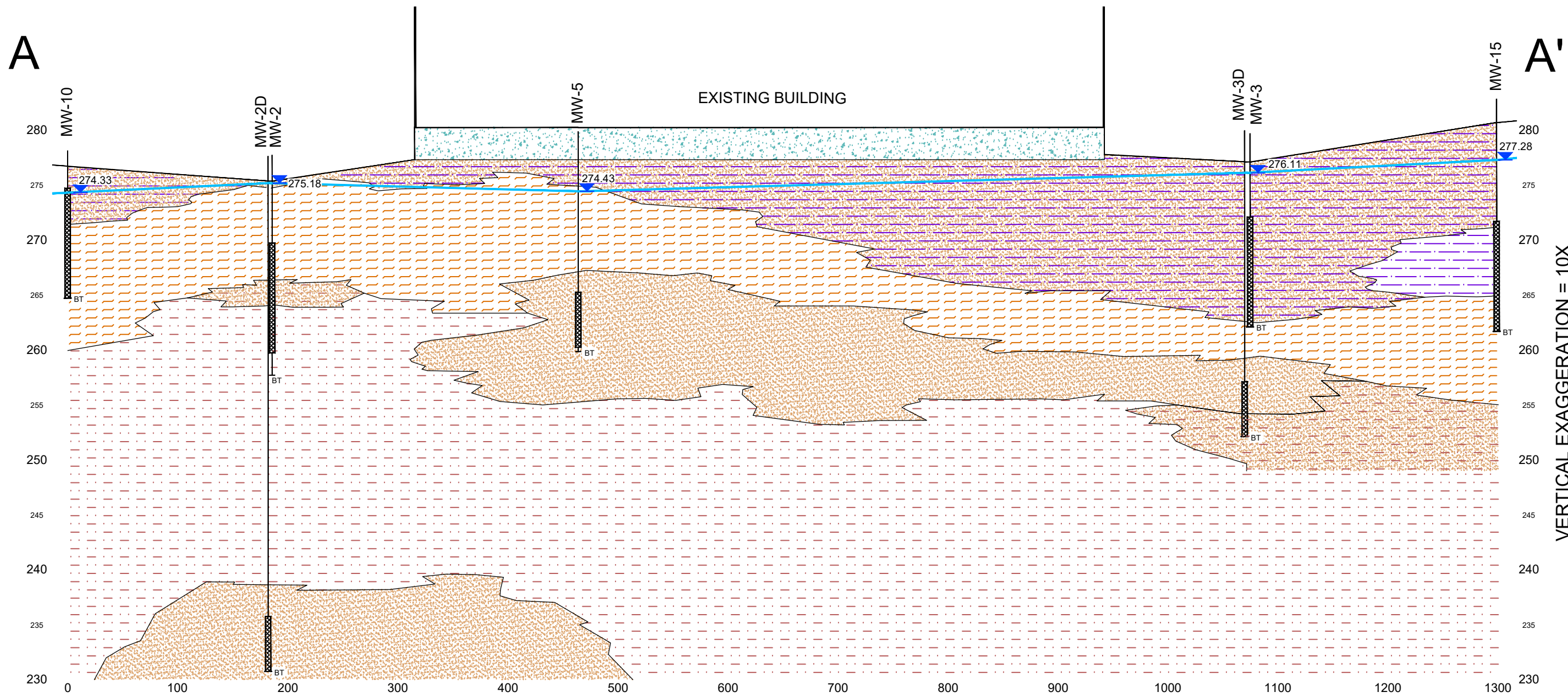


FORMER DUNCANE COMPANY SITE  
 BLACKVILLE, BARNWELL COUNTY, SOUTH CAROLINA  
 BLWM FILE # 401356  
 PROJECT NO. 02.20160378.00

**EARTHCON**<sup>®</sup>  
 EarthCon Consultants, Inc.  
 1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062

**CROSS SECTION LOCATION MAP**

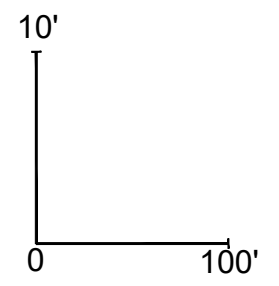
DRAWN: HVP	CHECKED: AGL	DATE: 7/16/2019	FIGURE: 4
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VERTICAL EXAGGERATION = 10X

**LEGEND**

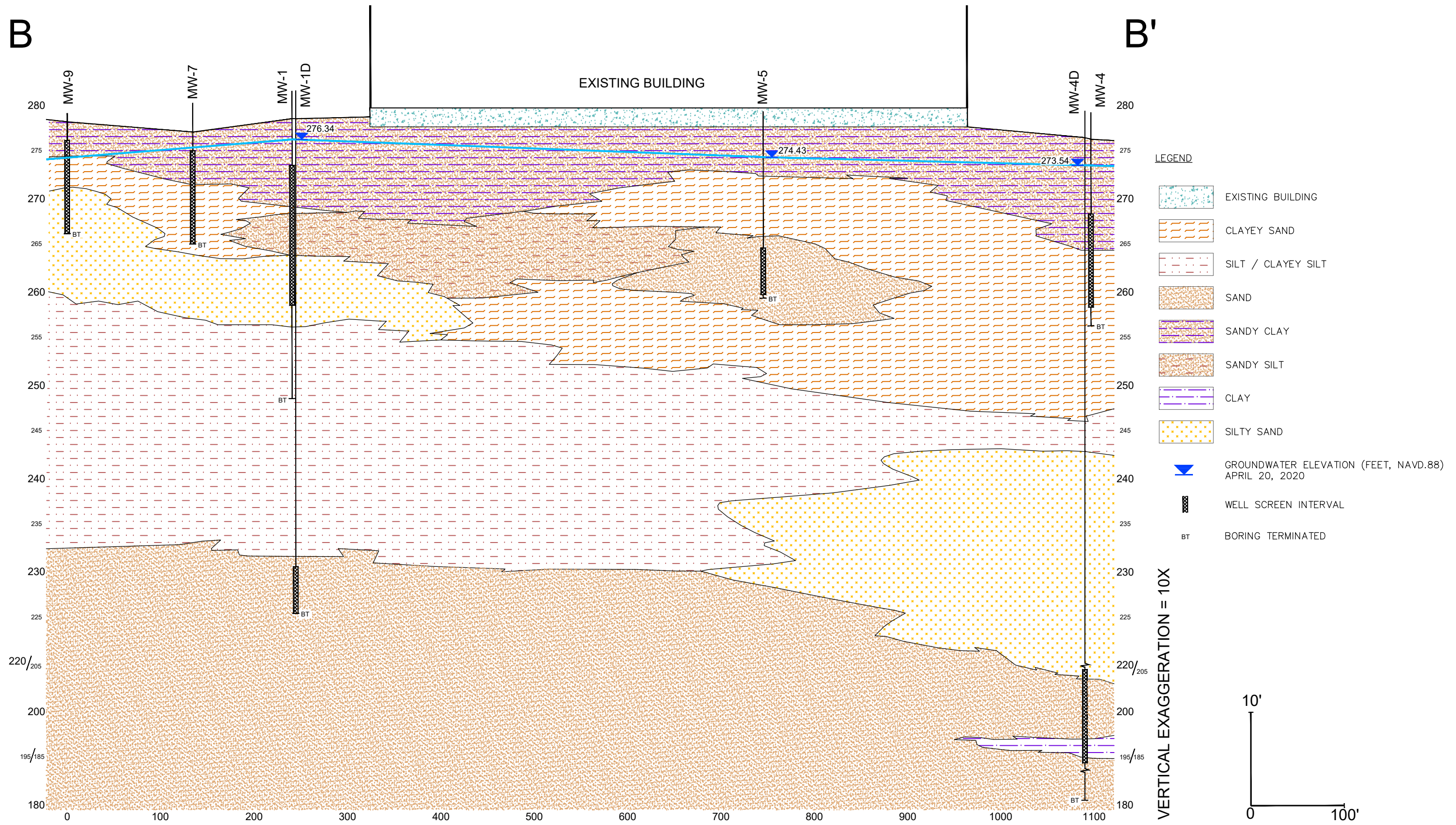
- |  |                    |  |   |
|--|--------------------|--|---|
|  | EXISTING BUILDING  |  | SANDY SILT  |
|  | CLAYEY SAND        |  | CLAY  |
|  | SILT / CLAYEY SILT |  | SILTY SAND  |
|  | SAND               |  | GROUNDWATER ELEVATION (FEET, NAVD.88)<br>APRIL 20, 2020 |
|  | SANDY CLAY         |  | WELL SCREEN INTERVAL                                    |
|  |                    |  | BORING TERMINATED                                       |



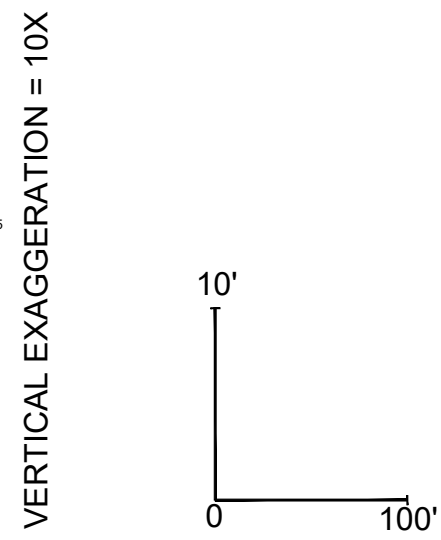
<p>FORMER DUNCANE COMPANY SITE BLACKVILLE, BARNWELL COUNTY, SOUTH CAROLINA BLWM FILE # 401356</p> <p>PROJECT NO. 02.20160378.00</p>	<p><b>EARTHCON</b><sup>®</sup></p> <p>EarthCon Consultants, Inc.</p> <p>1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062</p>	<p>CROSS SECTION A-A'</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">DRAWN: HVP</td> <td style="font-size: small;">CHECKED: AGL</td> <td style="font-size: small;">DATE: 9/3/2020</td> <td style="font-size: small;">FIGURE: 5</td> </tr> </table>	DRAWN: HVP	CHECKED: AGL	DATE: 9/3/2020	FIGURE: 5
DRAWN: HVP	CHECKED: AGL	DATE: 9/3/2020	FIGURE: 5			

B

B'



- LEGEND**
-  EXISTING BUILDING
  -  CLAYEY SAND
  -  SILT / CLAYEY SILT
  -  SAND
  -  SANDY CLAY
  -  SANDY SILT
  -  CLAY
  -  SILTY SAND
  -  GROUNDWATER ELEVATION (FEET, NAVD.88)  
APRIL 20, 2020
  -  WELL SCREEN INTERVAL
  -  BT BORING TERMINATED



FORMER DUNCANE COMPANY SITE  
BLACKVILLE, BARNWELL COUNTY, SOUTH CAROLINA  
BLWM FILE # 401356

PROJECT NO. 02.20160378.00



EarthCon Consultants, Inc.

1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062

CROSS SECTION B-B'

DRAWN: HVP	CHECKED: AGL	DATE: 9/3/2020	FIGURE: 6
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## **APPENDICES**

## **Appendix A**

### **Summary of Field Procedures – April 2020**

## **APPENDIX A: SUMMARY OF FIELD PROCEDURES – APRIL 2020**

A groundwater sampling event was conducted in April 2020 at the Former Ducane Company Site. The field activities are described in the following sections. Field sampling forms are provided in Appendix B. Laboratory analytical reports are provided in Appendix D.

### **GROUNDWATER SAMPLING**

A groundwater sampling event was conducted from April 20 to April 23, 2020 and 18 of the 21 Site monitoring wells were sampled. Monitoring wells MW-12 and MW-13 could not be located while monitoring well MW-9 is located on private property and access could not be obtained. Well construction details are provided in Table 1.

Groundwater sampling was conducted in general accordance with the United States Environmental Protection Agency (USEPA) Region 4 Science and Ecosystem Support Division (SESD) Operating Procedure (OP) for *Groundwater Sampling* (as updated) using low-flow techniques. Prior to sampling, water level measurements were collected from each well and water quality parameters were measured. Water level measurements are presented in Table 2. The field parameters measured at the time of groundwater sampling are provided on the field forms in Appendix B and presented in Table 3.

#### **Sample Containers**

The laboratory provided sample containers that met the sampling requirements of the study. The laboratory verified the cleanliness of each batch of containers prior to use. The laboratory supplied the necessary preservation solutions and shipped these with the sample containers.

The field samplers took responsibility for properly identifying the location of each sample taken and for recording the sample date, the type of sample, the preservative used, and the applicable project number. This information was documented in the field book/field form. This same information was then placed on the sample identification label and the chain-of-custody record. Sample labels were filled out with indelible ink. If the field sampler determined that additional information was pertinent to a sample being taken, such data was recorded in the field book or on the field form.

#### **Groundwater Level Measurement**

Prior to well sampling, depth to groundwater and total well depth were measured using an electronic tape or water level indicator. A fixed point was marked with an indelible marker on each well to serve as a reference point for measurement. Depths were measured to the nearest 0.01 foot and recorded on the field sheet. The tape was cleaned with phosphate-free laboratory detergent and water and rinsed with distilled water prior to each use.

### **Well Evaluation/Redevelopment**

During the October 2018 sampling event, two Teflon bailers were removed from monitoring well MW-4D and the total depth of the well was measured. In May 2019, DHEC provided a well construction diagram for well MW-4D. The measured depth did not match the information provided on the construction diagram so additional evaluation of the well was conducted during the next sampling event. In October 2019, one additional Teflon bailer and approximately 200 feet of tubing were removed from well MW-4D. Total depth measurements at that time matched those provided in the well diagram.

To further evaluate the integrity of well MW-4D, the well was video inspected. On April 22, 2020, a *Ridgid Seesnake*® downhole camera was inserted into the well to a depth of 84 feet below top of casing (TOC). Field evaluation of the video feed revealed the well casing was coming apart approximately 20 and 30 feet below TOC. No recording device was included with the downhole camera; therefore, video footage and photographs are not available for further review.

Based on the historical presence of bailers and tubing, monitoring well MW-4D was redeveloped using a whale pump prior to collecting the groundwater sample during the April 2020 sampling event. The well was pumped until the water was clear. Approximately fifty-five gallons of water were removed from the well.

### **Well Purging**

The monitoring wells were purged using a low flow/low volume method with a peristaltic pump and dedicated, disposable, polyethylene tubing. The groundwater parameters of temperature, pH, specific conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity were measured during purging.

Purging continued until a minimum of three consecutive stable readings were measured with five to fifteen-minute intervals between readings. Pumping rates were reduced as much as possible to reduce the amount of drawdown in the wells.

Purging was considered complete after the depth to water and water quality parameters stabilized. Purge water from the wells was temporarily placed in five-gallon buckets and emptied into a 55-gallon steel drum. Additional information regarding the purging and sampling activities including the volume of water in each well, purge rate, and depth to water during the purge process are provided in the field sampling forms in Appendix B.

### **Groundwater Sampling and Analysis**

Groundwater samples were collected after the water level in the well stabilized and after the pH and specific conductance measurements stabilized. A peristaltic pump and polyethylene tubing were used to collect the groundwater samples. The groundwater samples were collected from the intake end of the dedicated polyethylene discharge tubing after the peristaltic pump was stopped and the tubing was removed from the well. The groundwater samples were placed into laboratory



supplied pre-preserved containers, labeled, and recorded on a Chain-of-Custody form. The containers were then placed in a cooler on ice, and transported to Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.) (SCDHEC Certification No. 32010001) in Columbia, SC.

The groundwater samples were analyzed for volatile organic compounds (VOCs) by EPA Method 8260B and 1,4-dioxane using EPA Method 8260B SIM. Groundwater samples were also analyzed for the monitored natural attenuation (MNA) parameters nitrate, sulfate, sulfide, chloride, alkalinity, total organic carbon (TOC) and dissolved gasses (ethane, ethene, methane and propane). Field measurements of ferrous iron were also collected. A summary of the organic analytical results is provided in Table 4 while the MNA results are provided in Table 5. The laboratory analytical reports are provided in Appendix D.

### **Decontamination Procedures**

Decontamination procedures consisted of the use of dedicated, disposable tubing at each sampling location. Equipment such as the water level indicator and field measurement instrumentation were cleaned with phosphate-free laboratory detergent and rinsed with distilled water in general accordance with the EPA SESD OP for *Field Equipment Cleaning and Decontamination* (as updated). The equipment was allowed to air dry. Nitrile gloves were also worn and changed between each sampling location.

### **Equipment Calibration**

Equipment used to perform field testing on groundwater samples included a LaMotte-2020we turbidity meter and an Aquaread AP-700 with flow thru cell meter to measure pH, specific conductivity, temperature, dissolved oxygen, ORP, and turbidity. Equipment calibration was verified daily.

### **Field Sampling Forms**

Field personnel maintained a permanently bound, water resistant field notebook. Field activities were recorded with indelible ink. Additionally, sampling field forms were completed for each sample. The notebook, sampling forms, and chain-of-custody records contain sufficient information to allow reconstruction of the sample collection and handling procedures at a later time.

### **Chain-of-Custody**

Sample custody was documented from the time of sample collection when the labeled sample was placed into an iced cooler in the possession of the sampling technician. A corresponding line item on the chain-of-custody record was filled out and initialed by the sampling technicians. The chain-of-custody record is used to track custody of samples during transport and shipping. Upon completion of appropriate line items, or upon sample pick-up, the field representative signed, dated, listed the time, and confirmed the completeness of descriptive information

contained on the form. The chain-of-custody form accompanied the samples and terminated upon laboratory receipt of samples. All entries were recorded in ink. Each sample had a corresponding entry on a chain-of-custody record.

### **Analytical Procedures and QA/QC**

Groundwater samples were transported to Shealy Environmental Services, Inc. under chain-of-custody protocols. The samples were analyzed for VOCs by EPA Method 8260B and 1,4-dioxane by EPA Method 8260B SIM. Quality control samples, consisting of blind duplicates, trip blanks, and laboratory method blanks were also collected and analyzed for these parameters. The data validation summary and laboratory analytical reports are provided in Appendix D.

**Appendix B**

**Field Sampling Forms – April 2020**

WELL No. MW-1	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE: 4.21.20
SAMPLE No.	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: T. Massier	/EarthCon
SAMPLE TIME: 12:10	SITE :	FIELD CONDITIONS/WEATHER: Sunny 63°	

<b>Well Condition Inspection (circle one)</b> cover: <input checked="" type="radio"/> locked <input type="radio"/> not locked number: <input checked="" type="radio"/> legible <input type="radio"/> not legible outer casing: <input checked="" type="radio"/> good <input type="radio"/> fair <input type="radio"/> poor inner casing: <input checked="" type="radio"/> good <input type="radio"/> fair <input type="radio"/> poor well photographed: <input type="radio"/> yes <input checked="" type="radio"/> no	<b>Equipment Cleaning Procedures</b> <input checked="" type="checkbox"/> - potable water and phosphate-free soap <input type="checkbox"/> - potable water rinse <input checked="" type="checkbox"/> - water rinse: distilled <input type="checkbox"/> deionized <input type="checkbox"/> - solvent rinse: acetone <input type="checkbox"/> hexane <input checked="" type="checkbox"/> - air dry
--	--

Casing Diameter: (circle one) <input checked="" type="radio"/> 2" <input type="radio"/> 4" <input type="radio"/> 6" Other: _____	Casing Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$ Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56
---	---

Depth to Water (feet): <u>5.74</u>	Measuring Point Elevation (feet): _____
Depth of Well (feet): <u>21.9</u>	Groundwater Surface Elevation: _____
Water Column (feet): <u>16.16</u>	LNAPL present: _____ thickness: _____
Casing Volume (gallons/liters): <u>2.13</u>	DNAPL present: _____ thickness: _____
Calculated Purge Volume (gallons/liters): <u>3.00</u>	Remarks: _____
Actual Purge Volume (gallons/liters): <u>0.105</u>	
Pump Intake Depth (feet): <u>~18.5</u>	Ferrous Iron (mg/L): <u>1.43 mg/L</u>

Well Evacuation
Water level recovery is: very slow <input type="radio"/> slow <input type="radio"/> moderate <input checked="" type="radio"/> fast <input type="radio"/>
Bailed dry: <input type="radio"/> yes <input checked="" type="radio"/> no <input type="radio"/>

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µs/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/ REMARKS
11:35	0								PURGE START
11:40	0.15	22.70	5.61	2.06	-201.6	113	39.0	5.86	P/clear
11:45	0.25	22.20	5.57	1.69	-224	116	11.0	5.76	clear
11:50	0.46	22.0	5.56	1.51	-235	115	4.76	5.86	" "
11:55	0.55	22.0	5.55	1.41	-238	114	1.82	6.81	" "
12:00	0.65	22.0	5.55	1.31	-248	114	2.03	5.83	" "

Measurement and Sampling Equipment			
Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>YSR Aquaveed</u>	<u>556</u>	<u>4-21-20</u>
Turbidity	<u>HE Scientific HTH</u>	<u>Micro-TPW-20000</u>	<u>Laloffke 2020</u>
Peristaltic Pump	<u>Geotech</u>	<u>Geopump</u>	<u>N/A</u>

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
3	VOCs	40 ml glass / HCL	
<u>3 2</u>	1,4 - Dioxane	40 ml glass / HCL	
2	Diss. Gasses	40 ml glass / HCL	
1	TOC	250 ml HDPE / H2SO4	
1	NO3/SO4/Cl/Aik	500 ml HDPE / none	
3	Sulfide	250 ml HDPE / ZnAcetate + NaOH	
DUP-1 collected _____			



Groundwater Sampling Record

WELL No. MW-1D	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE 21.20
SAMPLE No.	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: T. Ussier	/EarthCon
SAMPLE TIME: 13:50	SITE :	FIELD CONDITIONS/WEATHER Sunny	

<b>Well Condition Inspection (circle one)</b> cover: <input checked="" type="radio"/> locked <input type="radio"/> not locked number: <input checked="" type="radio"/> legible <input type="radio"/> not legible outer casing: <input checked="" type="radio"/> good <input type="radio"/> fair <input type="radio"/> poor inner casing: <input checked="" type="radio"/> good <input type="radio"/> fair <input type="radio"/> poor well photographed: <input checked="" type="radio"/> yes <input type="radio"/> no	<b>Equipment Cleaning Procedures</b> - potable water and phosphate-free soap - potable water rinse - water rinse: <input checked="" type="checkbox"/> distilled <input type="checkbox"/> deionized - solvent rinse: <input checked="" type="checkbox"/> acetone <input type="checkbox"/> hexane - <input checked="" type="checkbox"/> air dry
--	--

Casing Diameter: (circle one)  2"  4"  6" Other: \_\_\_\_\_

Casing Volume Calculation:  $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$   
 Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47  
 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56

Depth to Water (feet): 8.25  
 Depth of Well (feet): 49.95  
 Water Column (feet): 41.70  
 Casing Volume (gallons/liters): 6.8  
 Calculated Purge Volume (gallons/liters): 20.4  
 Actual Purge Volume (gallons/liters): 1.15  
 Pump Intake Depth (feet): ~47.5

Measuring Point Elevation (feet): \_\_\_\_\_  
 Groundwater Surface Elevation: \_\_\_\_\_  
 LNAPL present: \_\_\_\_\_ thickness: \_\_\_\_\_  
 DNAPL present: \_\_\_\_\_ thickness: \_\_\_\_\_  
 Remarks: \_\_\_\_\_  
 Ferrous Iron (mg/L): 0.05 mg/L

Well Evacuation  
 Water level recovery is: very slow  slow  moderate  fast  
 Bailed dry: yes  no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µs/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/REMARKS
13:10	0								PURGE START
13:15	0.15	24.80	6.32	4.11	-24.4	24	3.0	8.60	clear
13:20	0.45	23.90	6.27	4.19	-7.2	30	1.0	8.61	clear
13:25	0.65	23.50	6.26	4.07	-6.7	19	1.87	8.66	" "
13:30	0.95	23.51	6.25	4.06	-13.7	18	0.71	8.65	" "
13:35	1.0	23.52	6.24	3.96	-13.7	19	0.71	8.75	" "
13:40	1.15	23.53	6.26	3.96	-20.1	18	1.33	8.75	" "

Measurement and Sampling Equipment

Type	Manufacturer	Model #	Calibration Date
Water Quality	YSI Aquaread	556	4.21.20
Turbidity	HE Scientific BACH	Micro-TPW-20000	4.21.20
Peristaltic Pump	Geotech	Geopump	N/A

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
3	VOCs	40 ml glass / HCL	
3/2	1,4 - Dioxane	40 ml glass / HCL	
2	Diss. Gasses	40 ml glass / HCL	
1	TOC	250 ml HDPE / H2SO4	
1	NO3/SO4/Cl/Alk	500 ml HDPE / none	
3	Sulfide	250 ml HDPE / ZnAcetate + NaOH	



Groundwater Sampling Record

WELL No. MW-2 PROJECT # 02.20160378.00 LOCATION: Blackville, SC DATE 4-22-20  
 SAMPLE No. PROJECT NAME: Lennox, Blackville, SC FIELD PERSONNEL/COMPANY: T. Messier /EarthCon  
 SAMPLE TIME: 10:45 SITE: FIELD CONDITIONS/WEATHER: Sunny 64°

**Well Condition Inspection (circle one)**  
 cover: locked not locked  
 number: legible not legible  
 outer casing: good fair poor  
 inner casing: good fair poor  
 well photographed: yes no

**Equipment Cleaning Procedures**  
 - potable water and phosphate-free soap X  
 - potable water rinse X  
 - water rinse: distilled deionized  
 - solvent rinse: acetone hexane  
 - air, dry X

Casing Diameter: (circle one) 2" 4" 6" Other: \_\_\_\_\_  
 Casing Volume Calculation:  $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$   
 Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47  
 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56

Depth to Water (feet): 2.89 Measuring Point Elevation (feet): \_\_\_\_\_  
 Depth of Well (feet): 14.11 Groundwater Surface Elevation: \_\_\_\_\_  
 Water Column (feet): 11.2 LNAPL present: \_\_\_\_\_ thickness: \_\_\_\_\_  
 Casing Volume (gallons/liters): 1.8 DNAPL present: \_\_\_\_\_ thickness: \_\_\_\_\_  
 Calculated Purge Volume (gallons/liters): 5.5 Remarks: \_\_\_\_\_  
 Actual Purge Volume (gallons/liters): 1.0  
 Pump Intake Depth (feet): ~ 12.5 Ferrous Iron (mg/L): 0.0 mg/l

Well Evacuation  
 Water level recovery is: very slow slow moderate fast Bailed dry: yes no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µs/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/REMARKS
10:10	0								PURGE START
10:15	0.10	19.60	5.59	2.69	31.1	73	1.98	2.96	clear
10:20	0.35	19.43	5.21	2.34	48.4	63	3.72	2.98	" "
10:25	0.45	19.60	5.13	2.12	-73.4	62	1.06	2.98	" "
10:30	0.65	19.60	5.12	2.08	-89.9	61	5.43	3.0	" "
10:35	1.0	19.01	5.11	2.03	-99.9	100	2.82	3.0	" "

Measurement and Sampling Equipment

Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>YSI Aquapac</u>	<u>L5567</u>	<u>4-22-20</u>
Turbidity	<u>HF Scientific HACH</u>	<u>Micro TPW 20000</u>	<u>Lamothe 2020</u>
Peristaltic Pump	<u>Geotech</u>	<u>Geopump</u>	<u>N/A</u>

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
<u>3</u>	VOCS	40 ml glass / HCL	
<u>2</u>	1,4 - Dioxane	40 ml glass / HCL	
<u>2</u>	Diss. Gasses	40 ml glass / HCL	
<u>1</u>	TOC	250 ml HDPE / H2SO4	
<u>1</u>	NO3/SO4/Cl/Alk	500 ml HDPE / none	
<u>1</u>	Sulfide	250 ml HDPE / ZnAcetate + NaOH	





Groundwater Sampling Record

WELL No. MW-3	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE 4-21-20
SAMPLE No. MW-3	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: S. Tyler	/EarthCon
SAMPLE TIME: 1400	SITE :	FIELD CONDITIONS/WEATHER CLEAR 70.5	

<b>Well Condition Inspection (circle one)</b> cover: <u>locked</u> not locked number: <u>legible</u> not legible outer casing: <u>good</u> fair poor inner casing: <u>good</u> fair poor well photographed: yes <u>no</u>		<b>Equipment Cleaning Procedures</b> <u>potable water and phosphate-free soap</u> - potable water rinse - water rinse: distilled deionized - solvent rinse: acetone hexane - air dry	
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Casing Diameter: (circle one) <u>2"</u> 4" 6" Other: _____	Casing Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$ Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56
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Depth to Water (feet): <u>3.66</u>	Measuring Point Elevation (feet): <u>TOC</u>
Depth of Well (feet): <u>17.96</u>	Groundwater Surface Elevation: _____
Water Column (feet): <u>14.30</u>	LNAPL present: <u>No</u> thickness: _____
Casing Volume (gallons/liters): <u>2.33</u>	DNAPL present: <u>No</u> thickness: _____
Calculated Purge Volume (gallons/liters): <u>6.99</u>	Remarks: _____
Actual Purge Volume (gallons/liters): <u>2.9</u>	
Pump Intake Depth (feet): <u>~12</u>	Ferrous Iron (mg/L): <u>DR/890 0.37 mg/L</u>

Well Evacuation S/N 080990C70631

Water level recovery is: very slow slow moderate fast Bailed dry: yes no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (us/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/REMARKS
	0					<u>FEET</u>			PURGE START
<u>1305</u>						<u>mg/L</u>		<u>3.66</u>	<u>CLEAR</u>
<u>1318</u>	<u>1/2</u>	<u>19.30</u>	<u>5.16</u>	<u>2.21</u>	<u>-0202.5</u>	<u>38</u>	<u>2.45</u>	<u>3.66</u>	<u>" / 020R</u>
<u>1330</u>	<u>1</u>	<u>19.40</u>	<u>5.10</u>	<u>2.63</u>	<u>-0197.0</u>	<u>39</u>	<u>1.70</u>	<u>3.67</u>	<u>" / SEPTIC</u>
<u>1340</u>	<u>1 1/2</u>	<u>19.40</u>	<u>5.10</u>	<u>2.66</u>	<u>-0194.3</u>	<u>38</u>	<u>1.10</u>	<u>3.67</u>	<u>" "</u>
<u>1350</u>	<u>2</u>	<u>19.40</u>	<u>5.10</u>	<u>2.71</u>	<u>-0190.6</u>	<u>39</u>	<u>1.27</u>	<u>3.66</u>	<u>" "</u>
<u>1400</u>	<u>2 1/2</u>	<u>19.40</u>	<u>5.08</u>	<u>2.71</u>	<u>-0187.3</u>	<u>0.37</u>	<u>1.11</u>	<u>3.66</u>	<u>" "</u>
						<u>39</u>			
<div style="border: 1px solid black; border-radius: 50%; padding: 10px; display: inline-block;">           SAMPLED @ 1400         </div>									

Measurement and Sampling Equipment			
Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>AQUAREAD</u>	<u>455</u>	<u>093602X 4-21-20</u>
Turbidity	<u>HE Scientific LAMOTTE</u>	<u>Micro TPW 20000</u>	<u>Uelwi 085180X 4-21-20</u>
Peristaltic Pump	<u>Geotech</u>	<u>Geopump</u>	<u>059720X</u>

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
<u>3</u>	<u>VOCs</u>	<u>40 ml glass / HCL</u>	
<u>2</u>	<u>1,4 - Dioxane</u>	<u>40 ml glass / HCL</u>	
<u>2</u>	<u>Diss. Gasses</u>	<u>40 ml glass / HCL</u>	
<u>1</u>	<u>TOC</u>	<u>250 ml HDPE / H2SO4</u>	
<u>1</u>	<u>NO3/SO4/Cl/Aik</u>	<u>500 ml HDPE / none</u>	
<u>1</u>	<u>Sulfide</u>	<u>250 ml HDPE / ZnAcetate + NaOH</u>	



WELL No. MW-3D	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE 4-21-20
SAMPLE No. MW-3D	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: STEVE TAYLOR /EarthCon	
SAMPLE TIME: 1300	SITE :	FIELD CONDITIONS/WEATHER CLEAR low 70s	

<b>Well Condition Inspection (circle one)</b> cover: <u>locked</u> not locked number: <u>legible</u> not legible outer casing: <u>good</u> fair poor inner casing: <u>good</u> fair poor well photographed: yes <u>no</u>	<b>Equipment Cleaning Procedures</b> - <u>potable water and phosphate-free soap</u> - <u>potable water rinse</u> - water rinse: distilled deionized - solvent rinse: acetone hexane - air dry
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Casing Diameter: (circle one) <u>2"</u> 4" 6" Other: _____	Casing Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$ Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56
--	---

Depth to Water (feet): <u>4.30</u> Depth of Well (feet): <u>28.12</u> Water Column (feet): <u>23.82</u> Casing Volume (gallons/liters): <u>3.88</u> Calculated Purge Volume (gallons/liters): <u>11.64</u> Actual Purge Volume (gallons/liters): <u>3</u> Pump Intake Depth (feet): <u>~ 23</u>	Measuring Point Elevation (feet): _____ Groundwater Surface Elevation: _____ LNAPL present: <u>140</u> thickness: <u>0</u> DNAPL present: <u>NO</u> thickness: <u>0</u> Remarks: _____ Ferrous Iron (mg/L): <u>DR/890</u> <u>0.00 MG/L</u>
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Well Evacuation Water level recovery is: very slow <u>slow</u> moderate fast	Bailed dry: yes <u>no</u> <u>514 080990070681</u>
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TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µs/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/REMARKS
	0								PURGE START
						<u>mg/L</u>			<u>CLEAR</u>
<u>227</u>	<u>1/2</u>	<u>19.31</u>	<u>4.78</u>	<u>1.63</u>	<u>0092.8</u>	<u>103</u>	<u>0.54</u>	<u>4.32</u>	<u>CLEAR</u>
<u>239</u>	<u>1</u>	<u>19.50</u>	<u>4.65</u>	<u>2.77</u>	<u>0118.8</u>	<u>28</u>	<u>0.50</u>	<u>4.32</u>	<u>"</u>
<u>241</u>	<u>1 1/2</u>	<u>19.70</u>	<u>4.74</u>	<u>4.62</u>	<u>0128.4</u>	<u>28</u>	<u>0.46</u>	<u>4.32</u>	<u>"</u>
<u>250</u>	<u>2</u>	<u>19.80</u>	<u>4.83</u>	<u>4.66</u>	<u>0129.8</u>	<u>28</u>	<u>0.48</u>	<u>4.33</u>	<u>"</u>
	<u>2 1/2</u>	<u>19.85</u>	<u>4.89</u>	<u>4.78</u>	<u>0.130.2</u>	<u>28</u>	<u>0.48</u>	<u>4.33</u>	<u>"</u>
<u>300</u>	<u>3</u>	<u>19.90</u>	<u>4.91</u>	<u>4.75</u>	<u>0131.3</u>	<u>200 (M)</u>	<u>0.50</u>	<u>4.34</u>	<u>"</u>
						<u>28</u>			
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;">           SAMPLED @ 1300         </div>									

Measurement and Sampling Equipment			
Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>AQUAREAD</u>	<u>556</u>	<u>093602X</u>
Turbidity	<u>HE Scientific LAMOTTE</u>	<u>Micro TPW 20000</u>	<u>4-21-20</u>
Peristaltic Pump	<u>Geotech</u>	<u>Geopump</u>	<u>059720X</u>

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
<u>3</u>	VOCs	40 ml glass / HCL	
<u>2</u>	1,4 - Dioxane	40 ml glass / HCL	
<u>2</u>	Diss. Gasses	40 ml glass / HCL	
<u>1</u>	TOC	250 ml HDPE / H2SO4	
<u>1</u>	NO3/SO4/Cl/Alk	500 ml HDPE / none	
<u>1</u>	Sulfide	250 ml HDPE / ZnAcetate + NaOH	



Groundwater Sampling Record

WELL No. MW-4	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE 4.22-20
SAMPLE No. MW-4	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: STEVE TYLER	/EarthCon
SAMPLE TIME: 1130	SITE :	FIELD CONDITIONS/WEATHER: CLEAR 60's	

<b>Well Condition Inspection (circle one)</b> cover: <input checked="" type="radio"/> locked    not locked number: <input checked="" type="radio"/> legible    not legible outer casing: <input checked="" type="radio"/> good    fair    poor inner casing: <input checked="" type="radio"/> good    fair    poor well photographed:    yes <input checked="" type="radio"/> no	<b>Equipment Cleaning Procedures</b> - potable water and phosphate-free soap - potable water rinse - water rinse:            distilled            deionized - solvent rinse:        acetone            hexane - air dry
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Casing Diameter: (circle one) <input checked="" type="radio"/> 2"    4" 6"    Other: _____	Casing Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$ Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56
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Depth to Water (feet): <u>6.39</u>	Measuring Point Elevation (feet): <u>706</u>
Depth of Well (feet): <u>20.78</u>	Groundwater Surface Elevation: _____
Water Column (feet): <u>14.39</u>	LNAPL present: <u>NO</u> thickness: _____
Casing Volume (gallons/liters): <u>2.34</u>	DNAPL present: <u>NO</u> thickness: _____
Calculated Purge Volume (gallons/liters): <u>7.04</u>	Remarks: _____
Actual Purge Volume (gallons/liters): <u>2.5</u>	
Pump Intake Depth (feet): <u>7.16</u>	Ferrous Iron (mg/L): <u>HACH DR/890    0.00 mg/L</u>

Well Evacuation S/N 080990C70681

Water level recovery is:  very slow    slow    moderate    fast            Bailed dry:            yes     no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µS/CM) <u>FEH10</u>	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/REMARKS
	0								PURGE START
						mg/L			CLEAR
1025	1/2	17.10	5.66	1.62	0054.7	27	20.8	6.71	"
1042	1	16.90	5.48	0.48	0061.7	28	16.4	6.93	"
1059	1 1/2	17.08	5.38	0.56	0026.8	22	13.2	7.10	"
1117	2	17.00	5.32	0.58	0025.7	22	9.52	7.14	"
1130	2 1/2	17.00	5.29	0.58	0025.3	<u>400</u> 22	7.69	7.17	"
<div style="border: 1px solid black; border-radius: 50%; padding: 20px; width: fit-content; margin: 0 auto;">           SAMPLED @ 1130         </div>									

Measurement and Sampling Equipment			
Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>ARVAREAD</u>	<u>555</u>	<u>4.22-20</u>
Turbidity	<u>HE Scientific LAMORTE</u>	<u>Micro TPW 20000</u>	<u>2020We</u>
Peristaltic Pump	<u>Geotech</u>	<u>Geopump</u>	<u>U85180X</u>
			<u>U56720X</u>

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
3	VOCs	40 ml glass / HCL	
2	1,4 - Dioxane	40 ml glass / HCL	
2	Diss. Gasses	40 ml glass / HCL	
1	TOC	250 ml HDPE / H2SO4	
1	NO3/SO4/Cl/Aik	500 ml HDPE / none	
1	Sulfide	250 ml HDPE / ZnAcetate + NaOH	



Groundwater Sampling Record

WELL No. MW-4D	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE: 4.21.20
SAMPLE No.	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: F. Messier, E. Cook S. Tyler	/EarthCon
SAMPLE TIME: 15:45	SITE:	FIELD CONDITIONS/WEATHER	

<b>Well Condition Inspection (circle one)</b> cover: <input checked="" type="radio"/> locked <input type="radio"/> not locked number: <input checked="" type="radio"/> legible <input type="radio"/> not legible outer casing: <input checked="" type="radio"/> good <input type="radio"/> fair <input type="radio"/> poor inner casing: <input checked="" type="radio"/> good <input type="radio"/> fair <input type="radio"/> poor well photographed: <input checked="" type="radio"/> yes <input type="radio"/> no		<b>Equipment Cleaning Procedures</b> <input checked="" type="checkbox"/> - potable water and phosphate-free soap <input checked="" type="checkbox"/> - potable water rinse <input checked="" type="checkbox"/> - water rinse: distilled <input type="checkbox"/> deionized <input checked="" type="checkbox"/> - solvent rinse: acetone <input type="checkbox"/> hexane <input checked="" type="checkbox"/> - air dry	
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Casing Diameter: (circle one)  2"  4"  6" Other: \_\_\_\_\_

Casing Volume Calculation: ( $\pi r^2 h$ ) (7.48 gal/ft<sup>3</sup>)  
 Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47  
 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56

Depth to Water (feet): 9.20	Measuring Point Elevation (feet): _____
Depth of Well (feet): 78.75	Groundwater Surface Elevation: _____
Water Column (feet): 109.55	LNAPL present: _____ thickness: _____
Casing Volume (gallons/liters): 11.33	DNAPL present: _____ thickness: _____
Calculated Purge Volume (gallons/liters): 31	Remarks: _____
Actual Purge Volume (gallons/liters): 31/2	
Pump Intake Depth (feet): 17.6	Ferrous Iron (mg/L): 0.04 mg/L

Well Evacuation  
 Water level recovery is: very slow  slow  moderate  fast  
 Bailed dry: yes  no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µs/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/REMARKS
	0								PURGE START
14:30	1/2	21.0	5.68	2.31	-0047.3	63	20.1	9.15	milky
14:43	1	21.0	5.63	2.63	-0038.2	68	26.2	9.97	
14:56	1 1/2	21.4	4.89	3.61	-0038.2	72	12.0	10.43	
15:09	2	20.3	4.00	3.78	-0010.3	77	10.3	10.67	clear
15:23	2 1/2	20.35	4.14	3.88	-0009.7	76	9.8	10.78	" "
15:36	3	20.33	4.17	3.61	-0009.2	74	9.7	10.35	" "
15:45	3 1/2	20.32	4.16	3.61	-0009.7	78	9.6	10.91	" "

Measurement and Sampling Equipment

Type	Manufacturer	Model #	Calibration Date
Water Quality	YSI Aquacool	556	4.21.20
Turbidity	HF Scientific	Micro TPW 20000	4.21.20
Bladder Pump	QED	Well Wizard Micro Purge	NA

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
3	VOCs	40 ml glass / HCL	
3/2	1,4 - Dioxane	40 ml glass / HCL	
2	Diss. Gasses	40 ml glass / HCL	
1	TOC	250 ml HDPE / H2SO4	
1	NO3/SO4/Cl/Aik	500 ml HDPE / none	
1	Sulfide	250 ml HDPE / ZnAcetate + NaOH	



Groundwater Sampling Record

WELL No. MW-5	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE: 2/20
SAMPLE No.	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: T. Messier, E. Cook	/EarthCon
SAMPLE TIME: 14:20	SITE :	FIELD CONDITIONS/WEATHER Sunny 70°	

<b>Well Condition Inspection (circle one)</b> cover: <u>locked</u> not locked number: <u>legible</u> not legible outer casing: <u>good</u> fair poor inner casing: <u>good</u> fair poor well photographed: yes <u>no</u>	<b>Equipment Cleaning Procedures</b> - potable water and phosphate-free soap - potable water rinse - water rinse: <u>distilled</u> deionized - solvent rinse: acetone hexane - <u>air dry</u>
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Casing Diameter: (circle one) 2" 4" 6" Other: <u>11"</u>	Casing Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$ <u>0.156"</u> Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56
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Depth to Water (feet): <u>5.42</u>	Measuring Point Elevation (feet): _____
Depth of Well (feet): <u>19.7</u>	Groundwater Surface Elevation: _____
Water Column (feet): <u>14.28</u>	LNAPL present: _____ thickness: _____
Casing Volume (gallons/liters): <u>2.32</u>	DNAPL present: _____ thickness: _____
Calculated Purge Volume (gallons/liters): <u>6.9</u>	Remarks: _____
Actual Purge Volume (gallons/liters): <u>0.65</u>	
Pump Intake Depth (feet): <u>11</u>	Ferrous Iron (mg/L): <u>0.10 mg/L</u>

Well Evacuation  
 Water level recovery is: very slow slow moderate fast Bailed dry: yes no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µs/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/REMARKS
13:40	0								PURGE START
13:45	0.10	18.00	5.08	2.31	17.8	114	15.6	5.40	clear
13:50	0.15	18.00	5.10	2.07	-40.5	113	9.62	5.52	" "
13:55	0.25	17.90	5.10	1.84	-105.8	113	7.84	5.40	" "
14:00	0.45	17.90	5.10	1.75	-158.6	114	6.21	5.45	" "
14:05	0.65	17.90	5.11	1.69	-185.1	115	4.81	5.54	" "

Measurement and Sampling Equipment			
Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>YSI Aquaveo</u>	<u>556</u>	<u>4.22.20</u>
Turbidity	<u>HE-Scientific HACH</u>	<u>Micro TPW 20000</u>	<u>4.22.20</u>
Bladder Pump	<u>QED</u>	<u>Well Wizard Micro Purge</u>	

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
3	VOCs	40 ml glass / HCL	
<u>82</u>	1,4 - Dioxane	40 ml glass / HCL	
2	Diss. Gasses	40 ml glass / HCL	
1	TOC	250 ml HDPE / H2SO4	
1	NO3/SO4/Cl/Aik	500 ml HDPE / none	
1	Sulfide	250 ml HDPE / ZnAcetate + NaOH	

~~DUP-2 collected~~

WELL No. MW-6R	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE: 4.21.20
SAMPLE No.	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: T. Messier	/EarthCon
SAMPLE TIME: 15:00	SITE:	FIELD CONDITIONS/WEATHER: Sunny 75°	

<b>Well Condition Inspection (circle one)</b> cover: <input checked="" type="radio"/> locked    not locked number: <input checked="" type="radio"/> legible    not legible outer casing: <input checked="" type="radio"/> good    fair    poor inner casing: <input checked="" type="radio"/> good    fair    poor well photographed: yes <input checked="" type="radio"/> no		<b>Equipment Cleaning Procedures</b> - potable water and phosphate-free soap <input checked="" type="checkbox"/> - potable water rinse <input checked="" type="checkbox"/> - water rinse: <input checked="" type="checkbox"/> distilled    deionized - solvent rinse: acetone    hexane - air dry <input checked="" type="checkbox"/>	
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Casing Diameter: (circle one) <input checked="" type="radio"/> 2"    4" 6"    Other: _____	Casing Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$ Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56
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Depth to Water (feet): 10.92	Measuring Point Elevation (feet): _____
Depth of Well (feet): 14.3	Groundwater Surface Elevation: _____
Water Column (feet): 13.38	LNAPL present: _____ thickness: _____
Casing Volume (gallons/liters): 2.18	DNAPL present: _____ thickness: _____
Calculated Purge Volume (gallons/liters): 12.54	Remarks: _____
Actual Purge Volume (gallons/liters): _____	
Pump Intake Depth (feet): 13.5	Ferrous Iron (mg/L): 0.02 mg/L

Well Evacuation  
 Water level recovery is: very slow    slow    moderate  fast    Bailed dry: yes     no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (us/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/ REMARKS
14:20	0								PURGE START
14:25	0.15	19.40	6.53	3.81	-77.7	52	6.29	1.0	clear
14:30	0.25	18.40	6.55	3.44	-129.9	49	5.64	1.0	" "
14:35	0.55	18.50	6.54	3.34	-135.9	48	3.09	1.0	" "
14:40	0.75	18.40	6.53	3.18	-149.8	49	5.63	1.0	" "
14:45	1.0	18.41	6.52	3.07	-157.8	49	2.81	1.0	" "
14:50	1.25	18.42	6.52	2.93	-162.8	48	1.12	1.0	" "

Measurement and Sampling Equipment			
Type	Manufacturer	Model #	Calibration Date
Water Quality	YSI Aquaread	556	4.21.20
Turbidity	HE Scientific HAH	Micro-TPW 20000	4.21.20
Peristaltic Pump	Geotech	Geopump	NA

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
3	VOCs	40 ml glass / HCL	
82	1,4 - Dioxane	40 ml glass / HCL	
2	Diss. Gasses	40 ml glass / HCL	
1	TOC	250 ml HDPE / H2SO4	
1	NO3/SO4/Cl/Alk	500 ml HDPE / none	
1	Sulfide	250 ml HDPE / ZnAcetate + NaOH	

WELL No. MW-7	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE 4.21.20
SAMPLE No.	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: T. Messier, E. COOK /EarthCon	
SAMPLE TIME: 11:00	SITE :	FIELD CONDITIONS/WEATHER Sunny 61°	

<b>Well Condition Inspection (circle one)</b> cover: <input checked="" type="radio"/> locked    not locked number: legible    not legible outer casing: <input checked="" type="radio"/> good    fair    poor inner casing: <input checked="" type="radio"/> good    fair    poor well photographed: yes <input checked="" type="radio"/> no	<b>Equipment Cleaning Procedures</b> - potable water and phosphate-free soap - potable water rinse - water rinse: <input checked="" type="checkbox"/> distilled    deionized - solvent rinse: acetone    hexane - air dry <input checked="" type="checkbox"/>
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Casing Diameter: (circle one) 2"    4"    6"    Other: 1"	Casing Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$ Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56 <div style="text-align: right; margin-top: 10px;"> <i>0.045</i>    <i>0.045</i> </div>
--	---

Depth to Water (feet): <u>4.16</u> Depth of Well (feet): <u>11.98</u> Water Column (feet): <u>7.82</u> Casing Volume (gallons/liters): <u>1.27 / 0.35</u> Calculated Purge Volume (gallons/liters): <u>3.8 / 1.0</u> Actual Purge Volume (gallons/liters): <u>0.65</u> Pump Intake Depth (feet): <u>~9</u>	Measuring Point Elevation (feet): _____ Groundwater Surface Elevation: _____ LNAPL present: _____ thickness: _____ DNAPL present: _____ thickness: _____ Remarks: _____ Ferrous Iron (mg/L): <u>0.01 mg/L</u>
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**Well Evacuation**  
 Water level recovery is:    very slow    slow     moderate    fast    Bailed dry:    yes     no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µs/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/ REMARKS
10:25	0								PURGE START
10:30	0.15	19.0	6.53	2.57	71	-266.8	DR	5.55	M/cloudy
10:35	0.25	18.4	6.50	1.63	89	-263.9	102.5	5.60	
10:40	0.35	18.4	6.47	1.43	89	-295.0	51.4	5.71	cloudy
10:45	0.45	18.4	6.47	1.39	90	-304.1	34.1	6.85	" "
10:50	0.50	18.4	6.46	1.34	91	-303.6	15.7	6.90	clear
10:55	0.65	18.4	6.46	1.39	91	-304.7	9.89	6.07	clear

<b>Measurement and Sampling Equipment</b>			
Type	Manufacturer	Model #	Calibration Date
Water Quality	YSI Aquarread	556	4.21.20
Turbidity	HF Scientific	Micro-TPW-20000	4.21.20
Peristaltic Pump	Geotech	Geopump	N/A

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
3	VOCs	40 ml glass / HCL	
2	1,4 - Dioxane	40 ml glass / HCL	
2	Diss. Gasses	40 ml glass / HCL	
1	TOC	250 ml HDPE / H2SO4	
1	NO3/SO4/Cl/Aik	500 ml HDPE / none	
1	Sulfide	250 ml HDPE / ZnAcetate + NaOH	

WELL No. MW-8	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE 4-21-20
SAMPLE No.	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: T. Messier /EarthCon	
SAMPLE TIME: 09:50	SITE:	FIELD CONDITIONS/WEATHER Sunny 61°	

<b>Well Condition Inspection (circle one)</b> cover: <u>locked</u> not locked number: <u>legible</u> not legible outer casing: <u>good</u> fair poor inner casing: <u>good</u> fair poor well photographed: <u>yes</u> no	<b>Equipment Cleaning Procedures</b> - potable water and phosphate-free soap <input checked="" type="checkbox"/> - potable water rinse <input checked="" type="checkbox"/> - water rinse: <u>distilled</u> deionized - solvent rinse: acetone hexane - all dry <input checked="" type="checkbox"/>
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Casing Diameter: (circle one) <u>2" / 4" / 6"</u> Other: <u>1"</u>	Casing Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$ <u>0.045</u> Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56
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Depth to Water (feet): <u>0.20</u> Depth of Well (feet): <u>12</u> Water Column (feet): <u>11.80</u> Casing Volume (gallons/liters): <u>0.53</u> Calculated Purge Volume (gallons/liters): <u>1.16</u> Actual Purge Volume (gallons/liters): <u>0.5</u> Pump Intake Depth (feet): <u>~10</u>	Measuring Point Elevation (feet): _____ Groundwater Surface Elevation: _____ LNAPL present: _____ thickness: _____ DNAPL present: _____ thickness: _____ Remarks: _____ Ferrous Iron (mg/L): <u>0.04</u>
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Well Evacuation

Water level recovery is: very slow slow moderate fast

Bailed dry: yes no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µs/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/REMARKS
09:20	0								PURGE START
09:25	0.15	16.98	6.11	2.94	-263.9	0143	8.97	3.0	clear
09:30	0.25	16.83	6.03	13.74	-263.9	130	9.22	3.84	" "
09:35	0.35	16.81	6.04	2.05	-278.1	157	7.17	5.51	" "
09:38	0.45	16.83	6.03	1.87	-281.1	160	6.34	6.15	" "
09:41	0.50	16.82	6.03	1.89	-281.6	158	5.62	6.85	" "

Measurement and Sampling Equipment			
Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>YSI Aquarcad</u>	<u>556</u>	<u>4.21.20</u>
Turbidity	<u>HF Scientific Lottite</u>	<u>Micro TPW 2000</u>	<u>4.21.20</u>
Peristaltic Pump	<u>Geotech</u>	<u>Geopump</u>	

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
3	VOCs	40 ml glass / HCL	
<u>3 2</u>	1,4 - Dioxane	40 ml glass / HCL	
2	Diss. Gasses	40 ml glass / HCL	
1	TOC	250 ml HDPE / H2SO4	
1	NO3/SO4/Cl/Aik	500 ml HDPE / none	
1	Sulfide	250 ml HDPE / ZnAcetate + NaOH	



Groundwater Sampling Record

WELL No. MW-10	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE 4.22.20
SAMPLE No. <u>MU-10</u>	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: <u>STEVE TUNED</u>	/EarthCon
SAMPLE TIME: <u>1330</u>	SITE :	FIELD CONDITIONS/WEATHER: <u>UPPER LOW 70s ☉</u>	

<b>Well Condition Inspection (circle one)</b>	<b>Equipment Cleaning Procedures</b>
cover: <u>locked</u> not locked	- potable water and phosphate-free soap
number: <u>legible</u> not legible	- potable water rinse
outer casing: <u>good</u> fair poor	- water rinse: distilled deionized
inner casing: <u>good</u> fair poor	- solvent rinse: acetone hexane
well photographed: yes <u>no</u>	- air dry

Casing Diameter: (circle one) 2" 4" 6" Other: <u>1"</u>	Casing Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$ Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56	<u>0.045</u>
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Depth to Water (feet): <u>3.95</u>	Measuring Point Elevation (feet): <u>7.00</u>
Depth of Well (feet): <u>12.33</u>	Groundwater Surface Elevation: _____
Water Column (feet): <u>8.38</u>	LNAPL present: <u>No</u> thickness: _____
Casing Volume (gallons/liters): <u>0.71</u>	DNAPL present: <u>No</u> thickness: _____
Calculated Purge Volume (gallons/liters): <u>2.14</u>	Remarks: _____
Actual Purge Volume (gallons/liters): <u>1.96</u>	
Pump Intake Depth (feet): <u>~10</u>	Ferrous Iron (mg/L): <u>HACH DR/890 (37) 1.96 mg/L</u>

Well Evacuation  
Water level recovery is: very slow slow moderate fast  
Bailed dry: \_\_\_\_\_ yes no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µS/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/REMARKS
	0					<u>Ferric</u>			PURGE START
						<u>1.96</u>			<u>UPPER W/ FE</u>
1200	1/4	17.70	5.39	1.68	-0005.4	66	19.0	4.27	" "
1214	1/2	17.33	4.97	0.45	0060.1	68	11.2	4.22	" "
1228	3/4	17.20	4.89	0.65	0069.2	68	2.83	4.30	" "
1242	1	17.10	4.85	0.55	0071.7	67	2.93	4.33	" "
1300	1 1/4	17.10	4.82	0.55	0073.2	68	2.06	4.35	" "
1314	1 1/2	17.05	4.82	0.56	0074.1	67	1.73	4.36	" "
1328	1 3/4	17.00	4.81	0.55	0074.7	68	1.51	4.36	" "
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> <p>SAMPLED @ 1330</p> </div>									

Measurement and Sampling Equipment			
Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>ISI AQUARAD</u>	<u>556</u>	<u>4.22.20</u>
Turbidity	<u>HF Scientific LAMOTTE</u>	<u>Micro TPW 2000 2020HP</u>	<u>4.22.20</u>
Peristaltic Pump	<u>Geotech</u>	<u>Geopump</u>	<u>056720X</u>

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
3	VOCs	40 ml glass / HCL	
<u>2</u>	1,4 - Dioxane	40 ml glass / HCL	
2	Diss. Gasses	40 ml glass / HCL	
1	TOC	250 ml HDPE / H2SO4	
1	NO3/SO4/Cl/Aik	500 ml HDPE / none	
1	Sulfide	250 ml HDPE / ZnAcetate + NaOH	



WELL No. MW-11	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE 4-22-20
SAMPLE No. MW-11	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: S. Tyler /EarthCon	
SAMPLE TIME: 1430	SITE :	FIELD CONDITIONS/WEATHER	

<b>Well Condition Inspection (circle one)</b> cover: <u>locked</u> not locked number: <u>legible</u> not legible outer casing: <u>good</u> fair poor inner casing: <u>good</u> fair poor well photographed: yes <u>no</u>	<b>Equipment Cleaning Procedures</b> <u>potable water and phosphate-free soap</u> - potable water rinse - water rinse: <u>distilled</u> deionized - solvent rinse: <u>acetone</u> hexane - air dry
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Casing Diameter: (circle one) 2" 4" 6" Other: <u>1"</u>	Casing Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$ Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56
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Depth to Water (feet): <u>6.54</u> Depth of Well (feet): <u>9.59</u> Water Column (feet): <u>3.05</u> Casing Volume (gallons/liters): <u>0.21</u> Calculated Purge Volume (gallons/liters): <u>0.65</u> Actual Purge Volume (gallons/liters): <u>1.25</u> Pump Intake Depth (feet): <u>2.8</u>	Measuring Point Elevation (feet): <u>TOC</u> Groundwater Surface Elevation: _____ LNAPL present: <u>NO</u> thickness: _____ DNAPL present: <u>NO</u> thickness: _____ Remarks: _____ Ferrous Iron (mg/L): <u>HACH DR/890 2.08 mg/L</u>
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Well Evacuation S/N

Water level recovery is: very slow slow moderate fast Bailed dry: yes no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µs/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/ REMARKS
	0								PURGE START
						mg/L			SLIGHT TURB
1840	1/4	18.20	5.71	6.1	0019.3	28	10.92	6.96	CLEAR
1398	1/2	18.80	5.71	6.6	0025.3	24	7.10	7.03	"
1308	3/4	18.70	5.76	6.8	0020.5	27	5.87	7.06	"
1428	1	18.65	5.74	6.7	0020.1	26	5.31	7.07	"
1430	1 1/4	18.65	5.72	7.8	0019.5	<del>26</del> 2.08 (M) 26	4.97	7.08	"
<div style="border: 1px solid black; padding: 10px; display: inline-block;">           SAMPLED @ 1430         </div>									

Measurement and Sampling Equipment			
Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>AQUACARD</u>	<u>558</u>	<u>4-22-20</u>
Turbidity	<u>HE Scientific LAMATE</u>	<u>Micro TRW 20000</u>	<u>2020 WE U</u>
Peristaltic Pump	<u>Geotech</u>	<u>Geopump</u>	<u>U</u>

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
3	VOCs	40 ml glass / HCL	
<del>3</del> 2	1,4 - Dioxane	40 ml glass / HCL	
2	Diss. Gasses	40 ml glass / HCL	
1	TOC	250 ml HDPE / H2SO4	
1	NO3/SO4/Cl/Aik	500 ml HDPE / none	
1	Sulfide	250 ml HDPE / ZnAcetate + NaOH	



Groundwater Sampling Record

WELL No. MW-14	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE: 2.22.20
SAMPLE No.	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: T. Messier	/EarthCon
SAMPLE TIME: 12:45	SITE :	FIELD CONDITIONS/WEATHER: Sunny 68°	

<b>Well Condition Inspection (circle one)</b>		<b>Equipment Cleaning Procedures</b>	
cover: <u>locked</u> not locked		- potable water and phosphate-free soap	
number: <u>legible</u> not legible		- potable water rinse	
outer casing: <u>good</u> fair poor		- water rinse: distilled	deionized
inner casing: <u>good</u> fair poor		- solvent rinse: acetone	hexane
well photographed: yes <u>no</u>		- air dry	

Casing Diameter: (circle one) 2" 4" 6" Other: <u>1"</u>	Casing Volume Calculation: $(\pi^2h)(7.48 \text{ gal/ft}^3)$ Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56	<u>0.045"</u>
--	--	---------------

Depth to Water (feet): <u>6.60</u>	Measuring Point Elevation (feet): _____
Depth of Well (feet): 13.41	Groundwater Surface Elevation: _____
Water Column (feet): <u>6.8</u>	LNAPL present: _____ thickness: _____
Casing Volume (gallons/liters): <u>0.306</u>	DNAPL present: _____ thickness: _____
Calculated Purge Volume (gallons/liters): <u>0.9</u>	Remarks: _____
Actual Purge Volume (gallons/liters): <u>0.85</u>	
Pump Intake Depth (feet): <u>11.5</u>	Ferrous Iron (mg/L): <u>3.30 mg/L</u>

Well Evacuation  
 Water level recovery is: very slow slow moderate fast Bailed dry: yes no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µs/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/REMARKS
12:10	0								PURGE START
12:15	0.10	19.10	5.85	2.63	-239.6	81	4.95	6.68	clear
12:20	0.25	18.30	5.64	2.28	-244.3	59	5.09	6.62	" "
12:25	0.45	18.20	5.46	2.04	-240.3	51	5.50	6.63	" "
12:30	0.50	18.20	5.43	1.95	-242.6	49	3.07	6.63	" "
12:33	0.65	18.20	5.44	1.87	-239.6	47	5.37	6.63	" "
12:36	0.85	18.20	5.44	1.89	-233.7	46	6.2	6.63	" "

Measurement and Sampling Equipment			
Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>YSI Aquaread</u>	<u>556</u>	<u>4.22.20</u>
Turbidity	<u>HF Scientific</u>	<u>Micro TPW-20000</u>	<u>4.22.20</u>
Peristaltic Pump	<u>Geotech</u>	<u>Geopump</u>	<u>N/A</u>

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
3	VOCs	40 ml glass / HCL	
<u>28</u>	1,4 - Dioxane	40 ml glass / HCL	
2	Diss. Gasses	40 ml glass / HCL	
1	TOC	250 ml HDPE / H2SO4	
1	NO3/SO4/Cl/Aik	500 ml HDPE / none	
1	Sulfide	250 ml HDPE / ZnAcetate + NaOH	

WELL No. MW-15	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE: 4-21-20
SAMPLE No. MW-15	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: STEVE TYLER /EarthCon	
SAMPLE TIME: 1000	SITE :	FIELD CONDITIONS/WEATHER: CLEAR/60s	

<b>Well Condition Inspection (circle one)</b> cover: <u>locked</u> not locked number: <u>legible</u> not legible outer casing: <u>good</u> fair poor inner casing: <u>good</u> fair poor well photographed: yes <u>no</u>	<b>Equipment Cleaning Procedures</b> - potable water and phosphate-free soap - potable water rinse - water rinse: <u>distilled</u> deionized - solvent rinse: acetone hexane - air dry
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Casing Diameter: (circle one) <u>2"</u> 4" 6" Other: _____	Casing Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$ Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56
--	---

Depth to Water (feet): <u>5.61</u> Depth of Well (feet): <u>21.81</u> Water Column (feet): <u>16.20</u> Casing Volume (gallons/liters): <u>2.64</u> Calculated Purge Volume (gallons/liters): <u>7.9</u> Actual Purge Volume (gallons/liters): <u>1.5</u> Pump Intake Depth (feet): <u>17</u>	Measuring Point Elevation (feet): <u>TOC</u> Groundwater Surface Elevation: _____ LNAPL present: <u>No 0.0</u> thickness: <u>0.0</u> DNAPL present: <u>No 0.0</u> thickness: <u>0.0</u> Remarks: _____ Ferrous Iron (mg/L): <u>DR/890</u> <u>0.01 mg/L</u>
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Well Evacuation Water level recovery is: very slow <u>slow</u> moderate fast	Bailed dry: <u>no</u>
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TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (us/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/REMARKS
	0								PURGE START
						<u>FETW</u>			
						<u>mg/L</u>			
<u>0925</u>	<u>1/4</u>	<u>17.7</u>	<u>6.59</u>	<u>1.23</u>	<u>-0163.9</u>	<u>101</u>	<u>13.41</u>	<u>5.72</u>	<u>CLEAR</u>
<u>0934</u>	<u>1/2</u>	<u>18.15</u>	<u>6.30</u>	<u>0.58</u>	<u>-0233.4</u>	<u>106</u>	<u>10.16</u>	<u>5.73</u>	<u>"</u>
<u>0935</u>	<u>3/4</u>	<u>18.24</u>	<u>6.23</u>	<u>0.56</u>	<u>-0234.1</u>	<u>106</u>	<u>5.84</u>	<u>5.74</u>	<u>"</u>
<u>0945</u>	<u>1</u>	<u>18.30</u>	<u>6.23</u>	<u>0.54</u>	<u>-0235.4</u>	<u>106</u>	<u>3.61</u>	<u>5.74</u>	<u>"</u>
<u>0954</u>	<u>1 1/4</u>	<u>18.36</u>	<u>6.21</u>	<u>0.58</u>	<u>-0221.5</u>	<u>106</u>	<u>2.81</u>	<u>5.74</u>	<u>"</u>
<u>1000</u>	<u>1 1/2</u>	<u>18.40</u>	<u>6.19</u>	<u>0.56</u>	<u>-0218.4</u>	<u>106</u>	<u>2.52</u>	<u>5.74</u>	<u>"</u>
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;">           SAMPLED @ 1000         </div>									

Measurement and Sampling Equipment			
Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>YSI AQUAREAD</u>	<u>556</u>	<u>4.21.20</u>
Turbidity	<u>HF Scientific (AMOTE)</u>	<u>Micro TPW 29000</u>	<u>4.21.20</u>
Peristaltic Pump	<u>Geotech</u>	<u>Geopump</u>	<u>059720X</u>

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
<u>3</u>	<u>VOCs</u>	<u>40 ml glass / HCL</u>	
<u>2</u>	<u>1,4 - Dioxane</u>	<u>40 ml glass / HCL</u>	
<u>2</u>	<u>Diss. Gasses</u>	<u>40 ml glass / HCL</u>	
<u>1</u>	<u>TOC</u>	<u>250 ml HDPE / H2SO4</u>	
<u>1</u>	<u>NO3/SO4/Cl/Aik</u>	<u>500 ml HDPE / none</u>	
<u>1</u>	<u>Sulfide</u>	<u>250 ml HDPE / ZnAcetate + NaOH</u>	



Groundwater Sampling Record

WELL No. MW-16	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE 4-21-20
SAMPLE No. MW-16	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: STEVE TYLER	/EarthCon
SAMPLE TIME: 1210	SITE :	FIELD CONDITIONS/WEATHER CLEAR UPPER 60'S	

Well Condition Inspection (circle one)		Equipment Cleaning Procedures	
cover: <u>locked</u> not locked	<u>legible</u> not legible	<u>potable water and phosphate-free soap</u>	
outer casing: <u>good</u> fair poor	inner casing: <u>good</u> fair poor	- potable water rinse	- water rinse: <u>distilled</u> deionized
well photographed: yes <u>no</u>		- solvent rinse: <u>acetone</u> hexane	- air dry

Casing Diameter: (circle one) 2" 4" 6" Other: \_\_\_\_\_

Casing Volume Calculation:  $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$   
 Casing Volume (gallons/ft) for: 2" = 0.163 4" = 0.653; 6" = 1.47  
 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56

Depth to Water (feet): <u>3.81</u>	Measuring Point Elevation (feet): <u>720</u>
Depth of Well (feet): <u>22.45</u>	Groundwater Surface Elevation: _____
Water Column (feet): <u>18.74</u>	LNAPL present: <u>NO</u> thickness: <u>0</u>
Casing Volume (gallons/liters): <u>3.05</u>	DNAPL present: <u>NO</u> thickness: <u>0</u>
Calculated Purge Volume (gallons/liters): <u>9.16</u>	Remarks: _____
Actual Purge Volume (gallons/liters): <u>2.5</u>	
Pump Intake Depth (feet): <u>17</u> <del>15</del> <u>(ST)</u>	Ferrous Iron (mg/L): <u>DR/890</u> <u>0.01 mg/L</u>

Well Evacuation 5/14 080990C70681

Water level recovery is: very slow slow moderate fast Bailed dry: yes no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µs/cm)	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/REMARKS
	0								PURGE START
<u>1130</u>	<u>1/4</u>					<u>mg/L</u>			
<u>1140</u>	<u>1/2</u>	<u>17.80</u>	<u>4.67</u>	<u>4.08</u>	<u>0093.8</u>	<u>101</u>	<u>2.47</u>	<u>3.80</u>	<u>clear</u>
<u>1145</u>	<u>1</u>	<u>17.80</u>	<u>4.55</u>	<u>4.11</u>	<u>0093.2</u>	<u>106</u>	<u>1.41</u>	<u>3.80</u>	<u>"</u>
<u>1154</u>	<u>1 1/2</u>	<u>17.80</u>	<u>4.47</u>	<u>4.16</u>	<u>0121.3</u>	<u>101</u>	<u>1.00</u>	<u>3.81</u>	<u>"</u>
<u>1202</u>	<u>2</u>	<u>17.80</u>	<u>4.48</u>	<u>4.21</u>	<u>0131.4</u>	<u>101</u>	<u>0.96</u>	<u>3.81</u>	<u>"</u>
<u>1210</u>	<u>2 1/2</u>	<u>17.80</u>	<u>4.46</u>	<u>4.21</u>	<u>0136.8</u>	<u>0.01</u>	<u>1.06</u>	<u>3.81</u>	<u>"</u>
						<u>101</u>		<u>3.81</u>	<u>"</u>
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> <p>SAMPLED @ 1210</p> </div>									

Measurement and Sampling Equipment

Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>AQUAREAD</u>	<u>093602X</u>	<u>4-21-20</u>
Turbidity	<u>HF Scientific LAMOTE</u>	<u>Micro TPW 20000</u>	<u>4-21-20</u>
Peristaltic Pump	<u>Geotech</u>	<u>Geopump</u>	<u>N/A</u>

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
<u>3</u>	VOCs	40 ml glass / HCL	
<u>6 2</u>	1,4 - Dioxane	40 ml glass / HCL	
<u>2</u>	Diss. Gasses	40 ml glass / HCL	
<u>1</u>	TOC	250 ml HDPE / H2SO4	
<u>1</u>	NO3/SO4/Cl/Aik	500 ml HDPE / none	
<u>1</u>	Sulfide	250 ml HDPE / ZnAcetate + NaOH	

WELL No. MW-17	PROJECT # 02.20160378.00	LOCATION: Blackville, SC	DATE 4-21-20
SAMPLE No. 14W-17	PROJECT NAME: Lennox, Blackville, SC	FIELD PERSONNEL/COMPANY: STEVE TYLER /EarthCon	
SAMPLE TIME: 1115	SITE :	FIELD CONDITIONS/WEATHER CLEAR UPPER 60's	

<b>Well Condition Inspection (circle one)</b> cover: <u>locked</u> not locked number: <u>legible</u> not legible outer casing: <u>good</u> fair poor inner casing: <u>good</u> fair poor well photographed: yes <u>no</u>	<b>Equipment Cleaning Procedures</b> <u>potable water and phosphate-free soap</u> - potable water rinse - water rinse: <del>distilled</del> deionized - solvent rinse: acetone hexane - air dry
--	--

Casing Diameter: (circle one) <u>2"</u> 4" 6" Other: _____	Casing Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$ Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47 Casing Volume (liters/ft) for: 2" = 0.618; 4" = 2.47; 6" = 5.56
---	---

Depth to Water (feet): <u>8.85</u> Depth of Well (feet): <u>30.15</u> Water Column (feet): <u>21.60</u> Casing Volume (gallons/liters): <u>3.50</u> Calculated Purge Volume (gallons/liters): <u>10.5</u> Actual Purge Volume (gallons/liters): <u>2.5</u> Pump Intake Depth (feet): <u>26.5</u> <del>23.5</del>	Measuring Point Elevation (feet): <u>TOC</u> Groundwater Surface Elevation: _____ LNAPL present: <u>No 0.0</u> thickness: <u>0.0</u> DNAPL present: <u>No 0.0</u> thickness: <u>0.0</u> Remarks: _____ Ferrous Iron (mg/L): <u>DR/890</u> <u>0.00 mg/L</u>
--	---

Well Evacuation SN 030990C70681

Water level recovery is: very slow slow moderate fast Bailed dry: yes no

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMPERATURE (°C)	pH	DISSOLVED OXYGEN (mg/L)	ORP (mV)	CONDUCTIVITY (µs/cm) <u>FE</u>	TURBIDITY (NTU)	Depth to Water (Feet)	ODOR/COLOR/ REMARKS
	0								PURGE START
1030	1/2	17.80	5.52	6.68	0004.2	158	5.91	8.85	CLEAR
1042	1	17.80	5.26	6.29	0054.7	171	4.92	8.87	"
1053	1 1/2	17.80	5.17	5.88	0074.1	162	6.32	8.88	"
1104	2	17.80	5.14	5.86	0085.1	162	5.86	8.88	"
1115	2 1/2	17.82	5.15	5.86	0087.8	0.00 <u>162</u>	4.66	8.88	"
SAMPLED @ 1115									

Measurement and Sampling Equipment			
Type	Manufacturer	Model #	Calibration Date
Water Quality	<u>SP</u> <u>AQUAREAD</u>	<u>556</u>	<u>4-21-20</u>
Turbidity	<u>HI Scientific</u>	<u>Micro TPW 20000</u>	<u>4-21-20</u>
Peristaltic Pump	<u>Geotech</u>	<u>Geopump</u>	<u>N/A</u>

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
3	VOCs	40 ml glass / HCL	
2	1,4 - Dioxane	40 ml glass / HCL	
2	Diss. Gasses	40 ml glass / HCL	
1	TOC	250 ml HDPE / H2SO4	
1	NO3/SO4/Cl/Alk	500 ml HDPE / none	
1	Sulfide	250 ml HDPE / ZnAcetate + NaOH	

## **Appendix C**

### **Groundwater Elevations Summary**

**APPENDIX C: GROUNDWATER ELEVATIONS SUMMARY**

Well Location	May-00	Apr-01	Jun-01	Jul-01	Mar-02	Jun-02	Dec-02	Jan-03	Mar-03	Jun-03	Aug-03	Feb-04
MW-1	273.81	275.70	na	na	274.80	273.04	274.85	274.97	276.00	276.34	275.87	276.20
MW-2	272.05	na	na	273.05	273.43	270.68	273.56	273.24	274.02	274.02	274.03	274.03
MW-3	273.66	na	na	274.27	273.85	272.30	273.86	273.98	274.96	275.87	275.45	275.47
MW-4	269.20	na	na	272.81	273.32	269.13	273.71	273.40	274.68	275.59	273.69	275.96
MW-5	na	na	na	na	na	na	na	na	na	na	na	na
MW-6/MW-6R	na	275.80	na	275.33	274.69	273.38	277.03	na	na	na	na	na
MW-7	na	275.98	275.03	na	275.05	273.09	274.77	275.25	276.02	276.43	276.07	276.33
MW-8	na	276.20	275.78	na	274.64	273.17	275.27	275.64	276.18	276.53	276.03	276.78
MW-9	na	na	273.95	na	273.72	271.64	274.56	273.98	275.08	275.25	274.78	275.22
MW-10	na	na	na	272.06	272.54	272.03	272.66	272.58	272.89	273.17	272.93	273.25
MW-11	na	na	na	274.41	275.86	275.66	275.84	275.12	276.03	276.09	275.87	276.18
MW-12	na	na	na	267.80	269.87	269.89	269.98	269.93	270.03	270.29	270.37	270.43
MW-13	na	na	na	na	na	na	272.50	272.47	272.59	272.80	272.83	272.92
MW-14	na	na	na	na	na	na	272.68	272.61	272.97	273.32	272.97	273.50
MW-15	na	na	na	na	na	na	na	na	na	na	na	na
MW-16	na	na	na	na	na	na	na	na	na	na	na	na
MW-17	na	na	na	na	na	na	na	na	na	na	na	na

**Notes:**

na - not available  
nm - not measured

**APPENDIX C: GROUNDWATER ELEVATIONS SUMMARY**

Well Location	Jun-04	Oct-04	Feb-05	Sep-06	Mar-07	Sep-07	Dec-07	Jan-08	Mar-08	Sep-08	Apr-09	Sep-09
MW-1	274.13	273.84	275.59	274.28	275.22	274.27	275.24	275.65	275.98	273.55	273.68	272.76
MW-2	273.11	273.86	274.03	271.64	na	na	274.12	274.38	na	273.27	274.49	273.63
MW-3	274.04	274.55	274.58	274.10	274.66	273.89	273.94	274.46	275.05	272.05	275.32	273.27
MW-4	270.31	272.75	270.90	271.97	274.72	272.62	274.22	274.35	274.70	271.14	274.27	270.64
MW-5	na	na	na	na	na	na	na	na	na	na	na	na
MW-6/MW-6R	na	na	na	na	na	na	na	na	na	na	na	na
MW-7	274.55	274.98	274.91	274.28	274.13	275.67	na	na	276.26	274.70	276.14	272.72
MW-8	274.51	275.33	276.46	274.48	276.05	274.82	na	na	276.40	273.79	276.70	272.68
MW-9	272.86	273.77	274.64	272.96	274.18	272.87	na	na	275.08	272.06	274.81	271.74
MW-10	272.40	272.95	273.20	272.98	273.53	273.50	na	na	273.70	272.69	273.59	273.38
MW-11	275.87	275.83	275.97	275.48	275.83	275.38	na	na	274.32	na	275.44	274.75
MW-12	270.17	270.42	270.61	270.67	na	na	na	na	na	na	na	na
MW-13	272.68	272.98	273.08	na	na	na	na	na	na	na	na	na
MW-14	272.46	273.02	273.33	272.97	273.57	272.99	na	na	273.86	272.83	273.64	272.31
MW-15	na	na	na	na	na	na	na	na	na	na	na	na
MW-16	na	na	na	na	na	na	na	na	na	na	na	na
MW-17	na	na	na	na	na	na	na	na	na	na	na	na

**Notes:**

na - not available  
nm - not measured



**APPENDIX C: GROUNDWATER ELEVATIONS SUMMARY**

Well Location	Mar-10	Oct-10	Sep-12	Jan-17	Oct-17	Mar-18	Oct-18	Mar-19	Oct-19	Apr-20
MW-1	276.00	274.94	273.29	276.29	274.60	276.12	276.38	275.89	272.93	276.34
MW-2	274.63	274.02	272.85	nm	272.98	274.90	274.89	274.59	271.02	275.18
MW-3	275.44	274.34	272.95	275.76	274.00	275.23	275.53	275.56	273.71	276.11
MW-4	274.30	273.19	270.80	274.83	270.51	273.56	275.24	273.11	267.87	273.54
MW-5	na	na	na	nm	272.81	274.46	274.53	273.24	271.33	274.43
MW-6/MW-6R	na	na	273.52	276.37	274.95	276.30	276.89	276.36	273.93	276.81
MW-7	275.60	275.06	272.63	276.71	274.92	276.14	276.57	275.74	272.72	276.51
MW-8	277.02	275.44	273.75	nm	274.58	276.51	276.37	276.45	275.90	276.63
MW-9	274.97	273.62	na	nm	nm	nm	nm	nm	nm	nm
MW-10	273.59	273.45	271.50	273.06	271.88	274.24	274.29	274.13	269.95	274.33
MW-11	275.30	275.14	271.54	273.40	272.30	274.14	274.15	273.99	271.15	274.32
MW-12	na	na	na	nm	nm	nm	nm	nm	nm	nm
MW-13	na	na	na	nm	nm	nm	nm	nm	nm	nm
MW-14	273.68	273.43	271.62	273.57	272.27	274.29	274.35	274.22	269.73	274.59
MW-15	na	na	na	276.41	275.49	275.82	276.73	276.70	274.35	277.28
MW-16	na	na	na	nm	273.67	274.08	274.55	274.47	272.80	274.90
MW-17	na	na	na	na	na	na	na	na	274.04	276.79

**Notes:**

na - not available  
nm - not measured

Prepared By: CDN 6/2/20

Checked By: AGL 9/8/20

**Appendix D**

**Data Validation Summary and  
Laboratory Analytical Reports – April 2020**

## **Data Validation Summary**

## MEMORANDUM

DATE: June 3, 2020  
TO: Carol Northern, EarthCon Consultants  
FROM: Kathy J. Gunderson, Senior Scientist  
SUBJECT: Quality Assurance Review  
PROJECT: Lennox International  
SAMPLING DATES: April 21-22, 2020  
PROJECT NUMBER: 02.20160378.00-202

### 1.0 Introduction

This quality assurance review presents the cursory validation of the sample analyses listed in Table 1. The analyses were performed by Pace Analytical Services, LLC. , formally Shealy Environmental Services, Inc., located in West Columbia, South Carolina.

The criteria used to qualify data are from the *Contract Laboratory Program National Functional Guidelines for Inorganic and Organic Data Review* (USEPA 2010 and 2008), the analytical methods, or the professional judgment of the validation chemist. The following laboratory deliverables were reviewed during the validation process:

- Chain-of-custody (COC) documentation to assess holding times and verify report completeness
- Laboratory quality control (QC) sample results, including method blanks, surrogate spikes, laboratory control samples (LCS), matrix spike/matrix spike duplicates (MS/MSD), and laboratory duplicates
- Analytical results to verify reporting limits
- Field QC samples to assess field blank contamination and field duplicate precision

The qualified data are summarized in Section 6 of this memorandum. Data qualifier flags have been added to the attached sample results and database files.

**Table 1—Sample Data Reviewed**

Sample ID	Laboratory ID	VOA <sup>a</sup>	Dissolved Gases <sup>b</sup>	General Chem <sup>c</sup>
MW-15	VD21078-001	X	X	X
MW-17	VD21078-002	X	X	X
MW-16	VD21078-003	X	X	X
MW-3D	VD21078-004	X	X	
MW-3	VD21078-005	X	X	X
MW-4D	VD21078-006	X	X	X
MW-8	VD21079-001	X	X	X
MW-7	VD21079-002	X	X	X
MW-1	VD21079-003	X	X	X
MW-1D	VD21079-004	X	X	X
MW-6R	VD21079-005	X	X	X
DUP-01	VD21079-006	X	X	X
Trip Blank	VD21079-007	X		
MW-2	VD22089-001	X	X	X
MW-2D	VD22089-002	X	X	X
MW-14	VD22089-003	X	X	X
MW-5	VD22089-004	X	X	X
MW-4	VD22089-005	X	X	X
MW-10	VD22089-006	X	X	X
MW-11	VD22089-007	X	X	X

<sup>a</sup> Volatile Organic Compounds by Method 8260B and 8260B SIM (USEPA 1996)

<sup>b</sup> Dissolved Gases by Method RSK175 (USEPA 1994)

<sup>c</sup> Alkalinity by Method SM 2320B; chloride, nitrate, and sulfate by Method 9056A; sulfide by method SM4500-S2 F; and TOC by method 9060A (APHA 1998 and USEPA 1996)

## 2.0 Data Validation Findings

### 2.1 Custody, Preservation, and Completeness

Sample custody was maintained as required from sample collection to receipt at the laboratory. The samples were received intact and were properly preserved. The reports are complete and contain results for the samples and tests requested on the COC forms.

### 2.2 Volatile Organic Analyses by Methods 8260B and 8260B SIM

#### 2.2.1 Holding Times

The samples were analyzed within the required holding time of 14 days from collection for preserved water samples.

#### 2.2.2 Blank Analyses

##### 2.2.2.1 Method Blanks

Method blanks were analyzed at the required frequency. Target analytes were not detected above the detection limits in the method blank samples.

### 2.2.2.2 Field Blanks

One trip blank is associated with the samples. Target analytes were not detected above the detection limits in the trip blank sample.

### 2.2.3 Surrogate Analyses

Surrogate compounds were added to samples, blanks, and QC samples as required. The recovery values are within the laboratory QC limits.

### 2.2.4 Matrix Spike/Matrix Spike Duplicate Analyses

MS/MSD or MS/duplicate analyses were reported at the project frequency of one per 20 field samples. The recovery and relative percent difference (RPD) values are within the laboratory QC limits.

### 2.2.5 Laboratory Control Sample Analyses

LCSs or LCS/LCSDs were analyzed at the required frequency of one per batch. The recovery and RPD values of target analytes are within the laboratory QC limits.

### 2.2.6 Laboratory Reporting Limits

The laboratory limits of quantitation (LOQ) are consistent with method reporting limits.

### 2.2.7 Field Duplicates

One field duplicate pair (MW-1/DUP-01) was collected. The RPD values are within the QC guideline of less than 30 for groundwater samples as shown in the table below.

Sample ID	Duplicate ID	Analyte	Units	Sample Value	Duplicate Value	RPD
MW-1	DUP-01	cis-1,2-dichloroethene	µg/L	670	660	1.5
		Ethylbenzene	µg/L	24	26	8.0
		Vinyl chloride	µg/L	24	23	4.2
		Xylenes (total)	µg/L	110	130	17

### 2.2.8 Overall Assessment of Data Usability

The usability of the data is based on the EPA guidance documents noted previously. Upon consideration of the information presented here; the data are acceptable without qualification.

## 2.3 Dissolved Gases

### 2.3.1 Holding Times

The samples were analyzed within the required holding time of 14 days from collection for preserved water samples.

## 2.3.2 Blank Analyses

### 2.3.2.1 Method Blanks

Method blanks were analyzed at the required frequency of one per batch. Dissolved gases were not detected above the detection limits in the method blanks:

### 2.3.2.2 Trip Blanks

The trip blank was not analyzed for dissolved gases.

## 2.3.3 Surrogate Analyses

Surrogate compounds are not required for dissolved gas analyses.

## 2.3.4 Matrix Spike/Matrix Spike Duplicate Analyses

No MS/MSD analyses were reported for dissolved gases; however, LCS/LCSD samples were analyzed for each batch, and the recovery and RPD values are within the laboratory QC limits.

## 2.3.5 Laboratory Control Sample Analyses

LCS/LCSDs were analyzed as required. The recovery and RPD values of target analytes are within the laboratory QC limits.

## 2.3.6 Laboratory Reporting Limits

The laboratory limits of quantitation (LOQ) are consistent with method reporting limits.

## 2.3.7 Field Duplicates

One field duplicate pair (MW-1/DUP-01) was collected. The RPD values are within the QC guideline of 30 for groundwater samples as shown in the table below.

Sample ID	Duplicate ID	Analyte	Units	Sample Value	Duplicate Value	RPD
MW-1	DUP-01	Ethene	µg/L	6.4	6.7	4.6
		Methane	µg/L	170	170	0

## 2.3.8 Overall Assessment of Data Usability

The usability of the data is based on the EPA guidance documents noted previously. Upon consideration of the information presented here; the data are acceptable without qualification.

## 2.4 General Chemistry Analyses

The field samples were analyzed for alkalinity, chloride, nitrate, sulfate, sulfide, and total organic carbon (TOC).

#### 2.4.1 Holding Times

The samples were analyzed within the method-required holding times.

#### 2.4.2 Blank Analyses

##### 2.4.2.1 Method Blanks

Method blanks were analyzed at the required frequency. Target analytes were not detected above the detection limits in the method blank samples.

#### 2.4.3 Matrix Spike/Matrix Spike Duplicate Analyses

MS/MSD analyses were reported at the project frequency of one pair per 20 field samples for chloride, nitrate, sulfate, and TOC. Duplicate analyses were reported for alkalinity and sulfide (matrix spikes are not required for these methods). The recovery and RPD values are within the laboratory QC limits.

#### 2.4.4 Laboratory Control Sample Analyses

LCSs or LCS/LCSDs were analyzed at the required frequency of one per batch. The recovery and RPD values are within the laboratory QC limits.

#### 2.4.5 Laboratory Reporting Limits

The laboratory limits of quantitation (LOQ) are consistent with method reporting limits.

#### 2.4.6 Field Duplicates

One field duplicate pair (MW-1/DUP-01) was collected. The RPD values are within the QC guideline of 30 for groundwater samples as shown in the table below.

Sample ID	Duplicate ID	Analyte	Units	Sample Value	Duplicate Value	RPD
MW-1	DUP-01	Chloride	mg/L	15	15	0
		Sulfate	mg/L	7.0	7.2	2.8
		TOC	mg/L	1.1	1.1	0

#### 2.4.7 Overall Assessment of Data Usability

The usability of the data is based on the EPA guidance documents noted previously. Upon consideration of the information presented here; the data are acceptable without qualification.

### 3.0 Assessment of Data Quality Indicators

#### 3.1 Precision

Precision is a measure of the mutual agreement among individual measurements of the same property, under prescribed similar conditions. Precision is determined through analysis of MS/MSDs, sample duplicates, and field duplicate samples. Duplicate samples are evaluated for



precision in terms of relative percent difference. Relative percent difference is defined as the difference between the duplicate results divided by the mean and expressed as a percent.

The precision of the VOC, dissolved gases, and general chemistry data is very good. The RPD values for the site-specific MS/MSDs, LCS/LCSDs, and field duplicates are within the laboratory QC limits.

### **3.2 Accuracy**

Accuracy is the degree of agreement between a measurement and the accepted reference or true value. The level of accuracy is determined by examination of surrogates, MS/MSDs, LCSs, method blanks, and field blanks. The surrogate, matrix spike, and LCS recovery values were compared to the laboratory QC limits. Method and field blanks are analyzed to identify compounds that could be introduced during the sampling, extraction, or analysis phases (i.e., laboratory contaminants) and lead to inaccurate results.

The accuracy of the VOC, dissolved gases, and general chemistry data is very good. The LCS, site-specific MS/MSDs, and surrogate recoveries are within the laboratory QC limits. The method blanks and trip blank are free of contamination.

### **3.3 Representativeness**

Representativeness is the extent to which the data reflect the actual contaminant levels present in the samples. Representativeness is assessed through method and field blanks, and proper preservation and handling. Method and field blank analyses allow for the detection of artifacts that may be reported as false positive results. Proper sample preservation and handling are necessary so that sample results reflect the actual sample concentrations.

The data are assumed to be representative because the samples were properly preserved and handled and target analytes were not detected in the method blanks or trip blank.

### **3.4 Comparability**

Comparability is a measure of how easily the data set can be compared and combined with other data sets. The data are assumed to be comparable since standard EPA methods were used to analyze the samples, the method QC criteria were generally met, and routine detection limits were reported.

### **3.5 Completeness**

Completeness is expressed as the ratio of valid results to the amount of data expected to be obtained under normal conditions. Completeness is determined by assessing the number of samples for which valid results were obtained versus the number of samples that were submitted to the laboratory for analysis. Valid results are results that are determined to be usable during the data validation review process.

The completeness of this data set is 100 percent.

## 4.0 Data Qualifier Definitions

### 4.1 Inorganic Data Qualifiers

The following data validation qualifiers were used in the review of this data set. These qualifiers are from the *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*.

- U The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- J The associated value is an estimated quantity.
- UJ The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
- R The data are unusable. (Note: Analyte may or may not be present)

### 4.2 Organic Data Qualifiers

The following data validation qualifiers were used in the review of this data set. These qualifiers are from the *Contract Laboratory Program National Functional Guidelines for Organic Data Review*.

- U The analyte was analyzed for but not detected above the reported sample quantitation limit.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.
- NJ The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the samples and meet quality control criteria. The presence or absence of the analyte cannot be verified.

## 5.0 References

USEPA. 1996. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Third Edition, Updates I, II, IIA, IIB, and III. United States Environmental Protection Agency. Office of Solid Waste. December 1996.

USEPA. 1999a. Methods and Guidance for Analysis of Water, Version 2.0. United States Environmental Protection Agency Office of Science and Technology. EPA 821-C-99-004. CD ROM. June 1999.

USEPA. 2008. Contract Laboratory Program National Functional Guidelines for Organic Data Review. U.S. Environmental Protection Agency Office of Emergency and Remedial Response. EPA540/R-99/008. June 2008.

USEPA. 2010. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. United States Environmental Protection Agency. Office of Solid Waste and Emergency Response. January 2010.

## **6.0 Summary of Data Qualification**

Data qualifier flags were not required due the quality assurance review of this data set.

Description: MW-15

Matrix: Aqueous

Date Sampled: 04/21/2020 1000

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1831	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1708	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1708	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1708	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1421	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	23		20	20	mg/L	1
Chloride		9056A	4.5		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.013	J	0.020	0.0050	mg/L	1
Sulfate		9056A	11		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/22/2020 2357	JTH		51868

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0.351 - 0.366

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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197 528.20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21078-001

Description: MW-15

Matrix: Aqueous

Date Sampled: 04/21/2020 1000

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/22/2020 2357	JTH		51868		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		100	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 0117	JTH		51867		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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AP 52820

Client: EarthCon Consultants, Inc.

Description: MW-15

Laboratory ID: VD21078-001

Date Sampled: 04/21/2020 1000

Matrix: Aqueous

Date Received: 04/21/2020

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/23/2020 1757	TML		51947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
<b>Methane</b>	<b>74-82-8</b>	<b>RSK - 175</b>	<b>6.1</b>	<b>J</b>	<b>10</b>	<b>2.5</b>	<b>ug/L</b>	<b>1</b>
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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*10/5-28-20*

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21078-002

Description: MW-17

Matrix: Aqueous

Date Sampled: 04/21/2020 1115

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1835	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1728	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1728	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1728	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1445	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	8.2		1.0	0.20	mg/L	1
Nitrate - N		9056A	1.8		0.020	0.0050	mg/L	1
Sulfate		9056A	0.20	J	1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/23/2020 0020	JTH		51868

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.71	J	1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0 - 0

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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KPS 5/28/20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21078-002

Description: MW-17

Matrix: Aqueous

Date Sampled: 04/21/2020 1115

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/23/2020 0020	JTH		51868		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		99	70-130
Toluene-d8		99	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 0141	JTH		51867		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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K9 5282



Client: EarthCon Consultants, Inc.

Description: MW-17

Laboratory ID: VD21078-002

Date Sampled: 04/21/2020 1115

Matrix: Aqueous

Date Received: 04/21/2020

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/23/2020 1813	TML		51947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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Handwritten signature: HJ 5/28/20

Client: EarthCon Consultants, Inc.

Description: MW-16

Laboratory ID: VD21078-003

Date Sampled: 04/21/2020 1210

Matrix: Aqueous

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1838	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1748	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1748	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1748	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1556	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	12		1.0	0.20	mg/L	1
Nitrate - N		9056A	5.8		0.020	0.0050	mg/L	1
Sulfate		9056A	0.35	J	1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/23/2020 0044	JTH		51868

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
<b>Chloroform</b>	<b>67-66-3</b>	<b>8260D</b>	<b>1.4</b>		<b>1.0</b>	<b>0.40</b>	<b>ug/L</b>	<b>1</b>
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0 - 0

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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APR 28 2020

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21078-003

Description: MW-16

Matrix: Aqueous

Date Sampled: 04/21/2020 1210

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1	5030B	8260D	1	04/23/2020 0044	JTH		51868	1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1
								cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1
								trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1
								1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1
								cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1
								trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1
								Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1
								2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
								Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1
								Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
								Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1
								4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
								Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
								Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1
								Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1
								1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1
								Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1
								Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1
								1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
								1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1
								1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1
								1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1
								Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1
								Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1
								Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1
								Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		98	70-130
Toluene-d8		97	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1	5030B	8260D (SIM)	1	04/23/2020 0205	JTH		51867	1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1

LOQ = Limit of Quantitation  
 ND = Not detected at or above the DL  
 H = Out of holding time  
 B = Detected in the method blank  
 N = Recovery is out of criteria  
 W = Reported on wet weight basis  
 E = Quantitation of compound exceeded the calibration range  
 P = The RPD between two GC columns exceeds 40%  
 DL = Detection Limit  
 J = Estimated result < LOQ and ≥ DL

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17522

Client: EarthCon Consultants, Inc.

Description: MW-16

Laboratory ID: VD21078-003

Date Sampled: 04/21/2020 1210

Matrix: Aqueous

Date Received: 04/21/2020

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/23/2020 1829	TML		51947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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APY 5/28/20

Client: EarthCon Consultants, Inc.

Description: MW-3D

Laboratory ID: VD21078-004

Date Sampled: 04/21/2020 1300

Matrix: Aqueous

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1845	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1808	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1808	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1808	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1620	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	12		1.0	0.20	mg/L	1
Nitrate - N		9056A	2.8		0.020	0.0050	mg/L	1
Sulfate		9056A	0.21	J	1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/23/2020 0106	JTH		51868

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
<b>Chloroform</b>	<b>67-66-3</b>	<b>8260D</b>	<b>0.69</b>	<b>J</b>	<b>1.0</b>	<b>0.40</b>	<b>ug/L</b>	<b>1</b>
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0 - 0.009

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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top 5/28/20

Client: EarthCon Consultants, Inc.

Description: MW-3D

Laboratory ID: VD21078-004

Date Sampled: 04/21/2020 1300

Matrix: Aqueous

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/23/2020 0106	JTH		51868		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		99	70-130
Toluene-d8		99	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 0230	JTH		51867		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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KJ 5-28-20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21078-004

Description: MW-3D

Matrix: Aqueous

Date Sampled: 04/21/2020 1300

Date Received: 04/21/2020

Surrogate

Q	Run 1 % Recovery	Acceptance Limits
	101	40-170

1,2-Dichloroethane-d4

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/23/2020 1845	TML		51947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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105280

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21078-005

Description: MW-3

Matrix: Aqueous

Date Sampled: 04/21/2020 1400

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1904	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1828	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1828	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1828	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1644	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	52		1.0	0.20	mg/L	1
Nitrate - N		9056A	ND		0.020	0.0050	mg/L	1
Sulfate		9056A	ND		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	0.99	J	1.0	0.99	mg/L	1
TOC		9060A	25		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	500	04/23/2020 0349	JTH		51868

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10000	2500	ug/L	1
Benzene	71-43-2	8260D	ND		500	200	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		500	200	ug/L	1
Bromoform	75-25-2	8260D	ND		500	200	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		1000	200	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		5000	1000	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		500	200	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		500	200	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		500	200	ug/L	1
Chloroethane	75-00-3	8260D	ND		1000	200	ug/L	1
Chloroform	67-66-3	8260D	ND		500	200	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		500	250	ug/L	1
Cyclohexane	110-82-7	8260D	ND		500	200	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		500	200	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		500	200	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		500	200	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		500	200	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		500	200	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		500	200	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		1000	300	ug/L	1
<b>1,1-Dichloroethane</b>	<b>75-34-3</b>	<b>8260D</b>	<b>1800</b>		<b>500</b>	<b>200</b>	<b>ug/L</b>	<b>1</b>
1,2-Dichloroethane	107-06-2	8260D	ND		500	200	ug/L	1

TOC Range: 25.291 - 25.557

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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Kp 5/28/20



Client: EarthCon Consultants, Inc.

Description: MW-3

Laboratory ID: VD21078-005

Date Sampled: 04/21/2020 1400

Matrix: Aqueous

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	500	04/23/2020 0349	JTH		51868		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	990		500	200	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	30000		500	200	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	260	J	500	200	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		500	200	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		500	200	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		500	200	ug/L	1	
Ethylbenzene	100-41-4	8260D	820		500	200	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		5000	1000	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		500	200	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		500	200	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		500	200	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		5000	1000	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		2500	200	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		500	200	ug/L	1	
Styrene	100-42-5	8260D	ND		500	210	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		500	200	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		500	200	ug/L	1	
Toluene	108-88-3	8260D	220	J	500	200	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		500	210	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		500	200	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		500	200	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		500	200	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		500	200	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		500	200	ug/L	1	
Vinyl chloride	75-01-4	8260D	1700		500	200	ug/L	1	
Xylenes (total)	1330-20-7	8260D	3300		500	200	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		101	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
2	5030B	8260D (SIM)	10	04/24/2020 0413	ALR1		51985		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	410		30	10	ug/L	2	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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AP 52820

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21078-005

Description: MW-3

Matrix: Aqueous

Date Sampled: 04/21/2020 1400

Date Received: 04/21/2020

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		109	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/23/2020 1901	TML		51947
2		RSK - 175	10	04/28/2020 1632	TML		52290

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	62		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	130		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	10000		100	25	ug/L	2
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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1952820

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21078-006

Description: MW-4D

Matrix: Aqueous

Date Sampled: 04/21/2020 1545

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1908	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1848	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1848	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1848	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1707	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	1.7		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.037		0.020	0.0050	mg/L	1
Sulfate		9056A	1.0		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0233	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0 - 0.079

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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APJ 5/28/20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21078-006

Description: MW-4D

Matrix: Aqueous

Date Sampled: 04/21/2020 1545

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0233	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
<b>Tetrachloroethene</b>	<b>127-18-4</b>	<b>8260D</b>	<b>16</b>		<b>1.0</b>	<b>0.40</b>	<b>ug/L</b>	<b>1</b>	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		98	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
2	5030B	8260D (SIM)	1	04/23/2020 2319	ALR1		51985		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	2	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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KJ 5/28/20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21078-006

Description: MW-4D

Matrix: Aqueous

Date Sampled: 04/21/2020 1545

Date Received: 04/21/2020

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		109	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/23/2020 1917	TML		51947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
<b>Methane</b>	<b>74-82-8</b>	<b>RSK - 175</b>	<b>4.4</b>	<b>J</b>	<b>10</b>	<b>2.5</b>	<b>ug/L</b>	<b>1</b>
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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Client: EarthCon Consultants, Inc.

Laboratory ID: VD21079-001

Description: MW-8

Matrix: Aqueous

Date Sampled: 04/21/2020 0950

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1915	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1908	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1908	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1908	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1819	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	8.3		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.015	J	0.020	0.0050	mg/L	1
Sulfate		9056A	7.3		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	2.0		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0256	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 1.914 - 2.043

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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KJ 6/1/20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21079-001

Description: MW-8

Matrix: Aqueous

Date Sampled: 04/21/2020 0950

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0256	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

## Surrogate

Q	Run 1 % Recovery	Acceptance Limits
	94	70-130
	99	70-130
	98	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 0343	JTH		51867		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	3.2		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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kp 5/20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21079-001

Description: MW-8

Matrix: Aqueous

Date Sampled: 04/21/2020 0950

Date Received: 04/21/2020

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1302	TML		52290
2		RSK - 175	1	04/29/2020 1053	TML		52389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
<b>Methane</b>	<b>74-82-8</b>	<b>RSK - 175</b>	<b>190</b>		<b>10</b>	<b>2.5</b>	<b>ug/L</b>	<b>1</b>
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	2

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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Description: MW-7

Matrix: Aqueous

Date Sampled: 04/21/2020 1100

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1922	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1927	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1927	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1927	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1843	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	24		20	20	mg/L	1
Chloride		9056A	5.7		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.062		0.020	0.0050	mg/L	1
Sulfate		9056A	2.8		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	1.1		1.0	0.99	mg/L	1
TOC		9060A	5.4		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	10	04/25/2020 0519	STM		52103

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		200	50	ug/L	2
Benzene	71-43-2	8260D	ND		10	4.0	ug/L	2
Bromodichloromethane	75-27-4	8260D	ND		10	4.0	ug/L	2
Bromoform	75-25-2	8260D	ND		10	4.0	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		20	4.0	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	ND		100	20	ug/L	2
Carbon disulfide	75-15-0	8260D	ND		10	4.0	ug/L	2
Carbon tetrachloride	56-23-5	8260D	ND		10	4.0	ug/L	2
Chlorobenzene	108-90-7	8260D	ND		10	4.0	ug/L	2
Chloroethane	75-00-3	8260D	ND		20	4.0	ug/L	2
Chloroform	67-66-3	8260D	ND		10	4.0	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		10	5.0	ug/L	2
Cyclohexane	110-82-7	8260D	ND		10	4.0	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		10	4.0	ug/L	2
Dibromochloromethane	124-48-1	8260D	ND		10	4.0	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		10	4.0	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	ND		10	4.0	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	ND		10	4.0	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	ND		10	4.0	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	ND		20	6.0	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	ND		10	4.0	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	ND		10	4.0	ug/L	2

TOC Range: 5.399 - 5.477

LOQ = Limit of Quantization      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-7

Matrix: Aqueous

Date Sampled: 04/21/2020 1100

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
2	5030B	8260D	10	04/25/2020 0519	STM		52103		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		10	4.0	ug/L	2	
<b>cis-1,2-Dichloroethene</b>	<b>156-59-2</b>	<b>8260D</b>	<b>560</b>		<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>	
<b>trans-1,2-Dichloroethene</b>	<b>156-60-5</b>	<b>8260D</b>	<b>4.2</b>	J	<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>	
1,2-Dichloropropane	78-87-5	8260D	ND		10	4.0	ug/L	2	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		10	4.0	ug/L	2	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		10	4.0	ug/L	2	
<b>Ethylbenzene</b>	<b>100-41-4</b>	<b>8260D</b>	<b>47</b>		<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>	
2-Hexanone	591-78-6	8260D	ND		100	20	ug/L	2	
Isopropylbenzene	98-82-8	8260D	ND		10	4.0	ug/L	2	
Methyl acetate	79-20-9	8260D	ND		10	4.0	ug/L	2	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		10	4.0	ug/L	2	
4-Methyl-2-pentanone	108-10-1	8260D	ND		100	20	ug/L	2	
Methylcyclohexane	108-87-2	8260D	ND		50	4.0	ug/L	2	
Methylene chloride	75-09-2	8260D	ND		10	4.0	ug/L	2	
Styrene	100-42-5	8260D	ND		10	4.1	ug/L	2	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		10	4.0	ug/L	2	
Tetrachloroethene	127-18-4	8260D	ND		10	4.0	ug/L	2	
Toluene	108-88-3	8260D	ND		10	4.0	ug/L	2	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		10	4.2	ug/L	2	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		10	4.0	ug/L	2	
1,1,1-Trichloroethane	71-55-6	8260D	ND		10	4.0	ug/L	2	
1,1,2-Trichloroethane	79-00-5	8260D	ND		10	4.0	ug/L	2	
Trichloroethene	79-01-6	8260D	ND		10	4.0	ug/L	2	
Trichlorofluoromethane	75-69-4	8260D	ND		10	4.0	ug/L	2	
<b>Vinyl chloride</b>	<b>75-01-4</b>	<b>8260D</b>	<b>110</b>		<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>	
<b>Xylenes (total)</b>	<b>1330-20-7</b>	<b>8260D</b>	<b>140</b>		<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>	

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		100	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 0408	JTH		51867		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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KPS 61-20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21079-002

Description: MW-7

Matrix: Aqueous

Date Sampled: 04/21/2020 1100

Date Received: 04/21/2020

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1318	TML		52290
2		RSK - 175	1	04/29/2020 1109	TML		52389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	4.2	J	10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	18		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	270		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	2

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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*Handwritten signature and date: 6/1/20*

Description: MW-1

Matrix: Aqueous

Date Sampled: 04/21/2020 1210

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1927	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 2027	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 2027	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 2027	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1907	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	15		1.0	0.20	mg/L	1
Nitrate - N		9056A	ND		0.020	0.0050	mg/L	1
Sulfate		9056A	7.0		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	1.1		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	10	04/25/2020 0543	STM		52103

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		200	50	ug/L	2
Benzene	71-43-2	8260D	ND		10	4.0	ug/L	2
Bromodichloromethane	75-27-4	8260D	ND		10	4.0	ug/L	2
Bromoform	75-25-2	8260D	ND		10	4.0	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		20	4.0	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	ND		100	20	ug/L	2
Carbon disulfide	75-15-0	8260D	ND		10	4.0	ug/L	2
Carbon tetrachloride	56-23-5	8260D	ND		10	4.0	ug/L	2
Chlorobenzene	108-90-7	8260D	ND		10	4.0	ug/L	2
Chloroethane	75-00-3	8260D	ND		20	4.0	ug/L	2
Chloroform	67-66-3	8260D	ND		10	4.0	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		10	5.0	ug/L	2
Cyclohexane	110-82-7	8260D	ND		10	4.0	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		10	4.0	ug/L	2
Dibromochloromethane	124-48-1	8260D	ND		10	4.0	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		10	4.0	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	ND		10	4.0	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	ND		10	4.0	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	ND		10	4.0	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	ND		20	6.0	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	ND		10	4.0	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	ND		10	4.0	ug/L	2

TOC Range: 1.079 - 1.163

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

Description: MW-1

Matrix: Aqueous

Date Sampled: 04/21/2020 1210

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
2	5030B	8260D	10	04/25/2020 0543	STM		52103		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		10	4.0	ug/L	2	
<b>cis-1,2-Dichloroethene</b>	<b>156-59-2</b>	<b>8260D</b>	<b>670</b>		<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		10	4.0	ug/L	2	
1,2-Dichloropropane	78-87-5	8260D	ND		10	4.0	ug/L	2	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		10	4.0	ug/L	2	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		10	4.0	ug/L	2	
<b>Ethylbenzene</b>	<b>100-41-4</b>	<b>8260D</b>	<b>24</b>		<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>	
2-Hexanone	591-78-6	8260D	ND		100	20	ug/L	2	
Isopropylbenzene	98-82-8	8260D	ND		10	4.0	ug/L	2	
Methyl acetate	79-20-9	8260D	ND		10	4.0	ug/L	2	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		10	4.0	ug/L	2	
4-Methyl-2-pentanone	108-10-1	8260D	ND		100	20	ug/L	2	
Methylcyclohexane	108-87-2	8260D	ND		50	4.0	ug/L	2	
Methylene chloride	75-09-2	8260D	ND		10	4.0	ug/L	2	
Styrene	100-42-5	8260D	ND		10	4.1	ug/L	2	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		10	4.0	ug/L	2	
Tetrachloroethene	127-18-4	8260D	ND		10	4.0	ug/L	2	
Toluene	108-88-3	8260D	ND		10	4.0	ug/L	2	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		10	4.2	ug/L	2	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		10	4.0	ug/L	2	
1,1,1-Trichloroethane	71-55-6	8260D	ND		10	4.0	ug/L	2	
1,1,2-Trichloroethane	79-00-5	8260D	ND		10	4.0	ug/L	2	
Trichloroethene	79-01-6	8260D	ND		10	4.0	ug/L	2	
Trichlorofluoromethane	75-69-4	8260D	ND		10	4.0	ug/L	2	
<b>Vinyl chloride</b>	<b>75-01-4</b>	<b>8260D</b>	<b>24</b>		<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>	
<b>Xylenes (total)</b>	<b>1330-20-7</b>	<b>8260D</b>	<b>110</b>		<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>	

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		97	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 0432	JTH		51867		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

kp6.1.20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21079-003

Description: MW-1

Matrix: Aqueous

Date Sampled: 04/21/2020 1210

Date Received: 04/21/2020

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1333	TML		52290
2		RSK - 175	1	04/29/2020 1125	TML		52389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	6.4	J	10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	170		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	2

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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 106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

KP 6-1-20

Description: MW-1D

Matrix: Aqueous

Date Sampled: 04/21/2020 1350

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1932	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 2127	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 2127	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 2127	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1931	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	2.9		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.024		0.020	0.0050	mg/L	1
Sulfate		9056A	0.73	J	1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0320	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0.05 - 0.087

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

Description: MW-1D

Matrix: Aqueous

Date Sampled: 04/21/2020 1350

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0320	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
<b>Tetrachloroethene</b>	<b>127-18-4</b>	<b>8260D</b>	<b>16</b>		<b>1.0</b>	<b>0.40</b>	<b>ug/L</b>	<b>1</b>	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
<b>Trichloroethene</b>	<b>79-01-6</b>	<b>8260D</b>	<b>4.2</b>		<b>1.0</b>	<b>0.40</b>	<b>ug/L</b>	<b>1</b>	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		99	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1418	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

6/1/20



Client: EarthCon Consultants, Inc.

Laboratory ID: VD21079-004

Description: MW-1D

Matrix: Aqueous

Date Sampled: 04/21/2020 1350

Date Received: 04/21/2020

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		104	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1349	TML		52290
2		RSK - 175	1	04/29/2020 1141	TML		52389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	2

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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KSP 6/1/20

Description: MW-6R

Matrix: Aqueous

Date Sampled: 04/21/2020 1500

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1940	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 2147	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 2147	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 2147	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1955	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	3.0		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.43		0.020	0.0050	mg/L	1
Sulfate		9056A	1.1		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	4.9		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0342	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 4.909 - 5.02

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

109 6110

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21079-005

Description: MW-6R

Matrix: Aqueous

Date Sampled: 04/21/2020 1500

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0342	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Run 1 Q	% Recovery	Acceptance Limits
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		100	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1442	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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KSP 6/1/20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21079-005

Description: MW-6R

Matrix: Aqueous

Date Sampled: 04/21/2020 1500

Date Received: 04/21/2020

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		107	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1405	TML		52290
2		RSK - 175	1	04/29/2020 1157	TML		52389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	2

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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4961-20

Description: DUP-01

Matrix: Aqueous

Date Sampled: 04/21/2020

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1946	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 2207	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 2207	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 2207	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 2019	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	15		1.0	0.20	mg/L	1
Nitrate - N		9056A	ND		0.020	0.0050	mg/L	1
Sulfate		9056A	7.2		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	1.1		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	10	04/25/2020 0606	STM		52103

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		200	50	ug/L	2
Benzene	71-43-2	8260D	ND		10	4.0	ug/L	2
Bromodichloromethane	75-27-4	8260D	ND		10	4.0	ug/L	2
Bromoform	75-25-2	8260D	ND		10	4.0	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		20	4.0	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	ND		100	20	ug/L	2
Carbon disulfide	75-15-0	8260D	ND		10	4.0	ug/L	2
Carbon tetrachloride	56-23-5	8260D	ND		10	4.0	ug/L	2
Chlorobenzene	108-90-7	8260D	ND		10	4.0	ug/L	2
Chloroethane	75-00-3	8260D	ND		20	4.0	ug/L	2
Chloroform	67-66-3	8260D	ND		10	4.0	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		10	5.0	ug/L	2
Cyclohexane	110-82-7	8260D	ND		10	4.0	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		10	4.0	ug/L	2
Dibromochloromethane	124-48-1	8260D	ND		10	4.0	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		10	4.0	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	ND		10	4.0	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	ND		10	4.0	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	ND		10	4.0	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	ND		20	6.0	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	ND		10	4.0	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	ND		10	4.0	ug/L	2

TOC Range: 1.022 - 1.114

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

Description: DUP-01

Matrix: Aqueous

Date Sampled: 04/21/2020

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	10	04/25/2020 0606	STM		52103

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1-Dichloroethene	75-35-4	8260D	ND		10	4.0	ug/L	2
<b>cis-1,2-Dichloroethene</b>	<b>156-59-2</b>	<b>8260D</b>	<b>660</b>		<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>
trans-1,2-Dichloroethene	156-60-5	8260D	ND		10	4.0	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	ND		10	4.0	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		10	4.0	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		10	4.0	ug/L	2
<b>Ethylbenzene</b>	<b>100-41-4</b>	<b>8260D</b>	<b>26</b>		<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>
2-Hexanone	591-78-6	8260D	ND		100	20	ug/L	2
Isopropylbenzene	98-82-8	8260D	ND		10	4.0	ug/L	2
Methyl acetate	79-20-9	8260D	ND		10	4.0	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		10	4.0	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	ND		100	20	ug/L	2
Methylcyclohexane	108-87-2	8260D	ND		50	4.0	ug/L	2
Methylene chloride	75-09-2	8260D	ND		10	4.0	ug/L	2
Styrene	100-42-5	8260D	ND		10	4.1	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		10	4.0	ug/L	2
Tetrachloroethene	127-18-4	8260D	ND		10	4.0	ug/L	2
Toluene	108-88-3	8260D	ND		10	4.0	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		10	4.2	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		10	4.0	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	ND		10	4.0	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	ND		10	4.0	ug/L	2
Trichloroethene	79-01-6	8260D	ND		10	4.0	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	ND		10	4.0	ug/L	2
<b>Vinyl chloride</b>	<b>75-01-4</b>	<b>8260D</b>	<b>23</b>		<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>
<b>Xylenes (total)</b>	<b>1330-20-7</b>	<b>8260D</b>	<b>130</b>		<b>10</b>	<b>4.0</b>	<b>ug/L</b>	<b>2</b>

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		96	70-130
Toluene-d8		101	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D (SIM)	1	04/23/2020 1507	BWS		51929

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

K0612

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1421	TML		52290
2		RSK - 175	1	04/29/2020 1213	TML		52389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	6.7	J	10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	170		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	2

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

KOP 6/2

Client: EarthCon Consultants, Inc.

Laboratory ID: VD21079-007

Description: TRIP BLANK

Matrix: Aqueous

Date Sampled: 04/21/2020

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0014	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1	
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1	
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1	
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1	
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1	
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1	
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1	
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1	
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1	
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1	
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1	
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1	
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1	
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1	
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1	
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1	
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1	
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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1061-20



Client: EarthCon Consultants, Inc.

Laboratory ID: VD21079-007

Description: TRIP BLANK

Matrix: Aqueous

Date Sampled: 04/21/2020

Date Received: 04/21/2020

### Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0014	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
Bromofluorobenzene		93	70-130						
1,2-Dichloroethane-d4		98	70-130						
Toluene-d8		97	70-130						

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

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Kp 6/1/20

Description: MW-2

Matrix: Aqueous

Date Sampled: 04/22/2020 1045

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1228	KFE		52328
1		(Chloride) 9056A	1	04/23/2020 2341	AMR		52063
1		(Nitrate - N) 9056A	1	04/23/2020 2341	AMR		52064
1		(Sulfate) 9056A	1	04/23/2020 2341	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 2043	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	6.8		1.0	0.20	mg/L	1
Nitrate - N		9056A	1.7		0.020	0.0050	mg/L	1
Sulfate		9056A	ND		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0406	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0.015 - 0.05

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

6/1/20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD22089-001

Description: MW-2

Matrix: Aqueous

Date Sampled: 04/22/2020 1045

Date Received: 04/22/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0406	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		101	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1013	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation  
 ND = Not detected at or above the DL  
 H = Out of holding time  
 B = Detected in the method blank  
 N = Recovery is out of criteria  
 W = Reported on wet weight basis  
 E = Quantitation of compound exceeded the calibration range  
 P = The RPD between two GC columns exceeds 40%  
 DL = Detection Limit  
 J = Estimated result < LOQ and ≥ DL

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4061-00

Client: <b>EarthCon Consultants, Inc.</b>	Laboratory ID: <b>VD22089-001</b>
Description: <b>MW-2</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>04/22/2020 1045</b>	
Date Received: <b>04/22/2020</b>	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4	103		40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1854	ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

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HP 6/1/20

Description: MW-2D

Matrix: Aqueous

Date Sampled: 04/22/2020 1145

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1234	KFE		52328
1		(Chloride) 9056A	1	04/24/2020 0001	AMR		52063
1		(Nitrate - N) 9056A	1	04/24/2020 0001	AMR		52064
1		(Sulfate) 9056A	1	04/24/2020 0001	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 2155	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	2.6		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.067		0.020	0.0050	mg/L	1
Sulfate		9056A	1.2		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0429	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0 - 0.001

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

K961-20

Description: MW-2D

Matrix: Aqueous

Date Sampled: 04/22/2020 1145

Date Received: 04/22/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0429	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		100	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1037	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

10061-20

Client: <b>EarthCon Consultants, Inc.</b>	Laboratory ID: <b>VD22089-002</b>
Description: <b>MW-2D</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>04/22/2020 1145</b>	
Date Received: <b>04/22/2020</b>	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4	103		40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1910	ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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KPS 6-1-20

Description: MW-14

Matrix: Aqueous

Date Sampled: 04/22/2020 1245

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1239	KFE		52328
1		(Chloride) 9056A	1	04/24/2020 0021	AMR		52063
1		(Nitrate - N) 9056A	1	04/24/2020 0021	AMR		52064
1		(Sulfate) 9056A	1	04/24/2020 0021	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 2306	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	2.6		1.0	0.20	mg/L	1
Nitrate - N		9056A	ND		0.020	0.0050	mg/L	1
Sulfate		9056A	4.2		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	0.95	J	1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0451	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	8.4	J	20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0.905 - 0.969

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

K97612



Description: MW-14

Matrix: Aqueous

Date Sampled: 04/22/2020 1245

Date Received: 04/22/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0451	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
<b>Toluene</b>	<b>108-88-3</b>	<b>8260D</b>	<b>3.3</b>		<b>1.0</b>	<b>0.40</b>	<b>ug/L</b>	<b>1</b>	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		98	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
2	5030B	8260D (SIM)	1	04/27/2020 1456	TML		52204		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	2	

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

KP 6/1-20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD22089-003

Description: MW-14

Matrix: Aqueous

Date Sampled: 04/22/2020 1245

Date Received: 04/22/2020

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		109	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1926	ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
<b>Methane</b>	<b>74-82-8</b>	<b>RSK - 175</b>	<b>60</b>		<b>10</b>	<b>2.5</b>	<b>ug/L</b>	<b>1</b>
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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*KJD 6-1-20*

Description: MW--5

Matrix: Aqueous

Date Sampled: 04/22/2020 1420

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1245	KFE		52328
1		(Chloride) 9056A	1	04/24/2020 0041	AMR		52063
1		(Nitrate - N) 9056A	1	04/24/2020 0041	AMR		52064
1		(Sulfate) 9056A	1	04/24/2020 0041	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 2330	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	16		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.32		0.020	0.0050	mg/L	1
Sulfate		9056A	0.58	J	1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	04/24/2020 0624	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		100	25	ug/L	1
Benzene	71-43-2	8260D	ND		5.0	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		5.0	2.0	ug/L	1
Bromoform	75-25-2	8260D	ND		5.0	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		10	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		50	10	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		5.0	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		5.0	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		5.0	2.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		10	2.0	ug/L	1
Chloroform	67-66-3	8260D	ND		5.0	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		5.0	2.5	ug/L	1
Cyclohexane	110-82-7	8260D	ND		5.0	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		5.0	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		5.0	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		5.0	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		5.0	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		5.0	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		5.0	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		10	3.0	ug/L	1
<b>1,1-Dichloroethane</b>	<b>75-34-3</b>	<b>8260D</b>	<b>2.5</b>	<b>J</b>	<b>5.0</b>	<b>2.0</b>	<b>ug/L</b>	<b>1</b>
1,2-Dichloroethane	107-06-2	8260D	ND		5.0	2.0	ug/L	1

TOC Range: 0.199 - 0.233

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

KQ 6-1-20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD22089-004

Description: MW--5

Matrix: Aqueous

Date Sampled: 04/22/2020 1420

Date Received: 04/22/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	5	04/24/2020 0624	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		5.0	2.0	ug/L	1	
<b>cis-1,2-Dichloroethene</b>	<b>156-59-2</b>	<b>8260D</b>	<b>320</b>		<b>5.0</b>	<b>2.0</b>	<b>ug/L</b>	<b>1</b>	
<b>trans-1,2-Dichloroethene</b>	<b>156-60-5</b>	<b>8260D</b>	<b>2.7</b>	<b>J</b>	<b>5.0</b>	<b>2.0</b>	<b>ug/L</b>	<b>1</b>	
1,2-Dichloropropane	78-87-5	8260D	ND		5.0	2.0	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		5.0	2.0	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		5.0	2.0	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		5.0	2.0	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		50	10	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		5.0	2.0	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		5.0	2.0	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		5.0	2.0	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		50	10	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		25	2.0	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		5.0	2.0	ug/L	1	
Styrene	100-42-5	8260D	ND		5.0	2.1	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		5.0	2.0	ug/L	1	
<b>Tetrachloroethene</b>	<b>127-18-4</b>	<b>8260D</b>	<b>110</b>		<b>5.0</b>	<b>2.0</b>	<b>ug/L</b>	<b>1</b>	
Toluene	108-88-3	8260D	ND		5.0	2.0	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		5.0	2.1	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		5.0	2.0	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		5.0	2.0	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		5.0	2.0	ug/L	1	
<b>Trichloroethene</b>	<b>79-01-6</b>	<b>8260D</b>	<b>170</b>		<b>5.0</b>	<b>2.0</b>	<b>ug/L</b>	<b>1</b>	
Trichlorofluoromethane	75-69-4	8260D	ND		5.0	2.0	ug/L	1	
<b>Vinyl chloride</b>	<b>75-01-4</b>	<b>8260D</b>	<b>5.1</b>		<b>5.0</b>	<b>2.0</b>	<b>ug/L</b>	<b>1</b>	
Xylenes (total)	1330-20-7	8260D	ND		5.0	2.0	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		99	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1126	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	9.1		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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K95 6-1-20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD22089-004

Description: MW--5

Matrix: Aqueous

Date Sampled: 04/22/2020 1420

Date Received: 04/22/2020

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		104	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1942	ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
<b>Methane</b>	<b>74-82-8</b>	<b>RSK - 175</b>	<b>2100</b>		<b>10</b>	<b>2.5</b>	<b>ug/L</b>	<b>1</b>
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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APD 6/1/20

Description: MW-4

Matrix: Aqueous

Date Sampled: 04/22/2020 1130

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1251	KFE		52328
1		(Chloride) 9056A	1	04/24/2020 0101	AMR		52063
1		(Nitrate - N) 9056A	1	04/24/2020 0101	AMR		52064
1		(Sulfate) 9056A	1	04/24/2020 0101	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 2354	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	7.7		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.048		0.020	0.0050	mg/L	1
Sulfate		9056A	0.86	J	1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0538	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0.289 - 0.311

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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K061720

Client: EarthCon Consultants, Inc.

Laboratory ID: VD22089-005

Description: MW-4

Matrix: Aqueous

Date Sampled: 04/22/2020 1130

Date Received: 04/22/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0538	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
<b>cis-1,2-Dichloroethene</b>	<b>156-59-2</b>	<b>8260D</b>	<b>6.6</b>		<b>1.0</b>	<b>0.40</b>	<b>ug/L</b>	<b>1</b>	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
<b>Tetrachloroethene</b>	<b>127-18-4</b>	<b>8260D</b>	<b>3.2</b>		<b>1.0</b>	<b>0.40</b>	<b>ug/L</b>	<b>1</b>	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
<b>1,1,2-Trichloroethane</b>	<b>79-00-5</b>	<b>8260D</b>	<b>0.61</b>	<b>J</b>	<b>1.0</b>	<b>0.40</b>	<b>ug/L</b>	<b>1</b>	
<b>Trichloroethene</b>	<b>79-01-6</b>	<b>8260D</b>	<b>4.5</b>		<b>1.0</b>	<b>0.40</b>	<b>ug/L</b>	<b>1</b>	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		99	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1151	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

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KPB 6/1/20

Client: EarthCon Consultants, Inc.

Description: MW-4

Laboratory ID: VD22089-005

Date Sampled: 04/22/2020 1130

Matrix: Aqueous

Date Received: 04/22/2020

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1958	ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
<b>Methane</b>	<b>74-82-8</b>	<b>RSK - 175</b>	<b>9.7</b>	<b>J</b>	<b>10</b>	<b>2.5</b>	<b>ug/L</b>	<b>1</b>
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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*KPB 6-1-20*



Client: EarthCon Consultants, Inc.

Description: MW-10

Laboratory ID: VD22089-006

Date Sampled: 04/22/2020 1330

Matrix: Aqueous

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1257	KFE		52328
1		(Chloride) 9056A	1	04/24/2020 0121	AMR		52063
1		(Nitrate - N) 9056A	1	04/24/2020 0121	AMR		52064
1		(Sulfate) 9056A	1	04/24/2020 0121	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/25/2020 0018	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	4.5		1.0	0.20	mg/L	1
Nitrate - N		9056A	ND		0.020	0.0050	mg/L	1
Sulfate		9056A	4.6		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	1.4		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0514	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 1.371 - 1.414

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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K961-20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD22089-006

Description: MW-10

Matrix: Aqueous

Date Sampled: 04/22/2020 1330

Date Received: 04/22/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0514	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		100	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1215	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

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KES 6:20

Client: **EarthCon Consultants, Inc.** Laboratory ID: **VD22089-006**  
 Description: **MW-10** Matrix: **Aqueous**  
 Date Sampled: **04/22/2020 1330**  
 Date Received: **04/22/2020**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		104	40-170

**Dissolved Gases**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020	2014 ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
<b>Methane</b>	<b>74-82-8</b>	<b>RSK - 175</b>	<b>32</b>		<b>10</b>	<b>2.5</b>	<b>ug/L</b>	<b>1</b>
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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*KJP 6/1/20*

Description: MW-11

Matrix: Aqueous

Date Sampled: 04/22/2020 1430

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1302	KFE		52328
1		(Chloride) 9056A	1	04/24/2020 0141	AMR		52063
1		(Nitrate - N) 9056A	1	04/24/2020 0141	AMR		52064
1		(Sulfate) 9056A	1	04/24/2020 0141	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/25/2020 0042	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	50		20	20	mg/L	1
Chloride		9056A	2.9		1.0	0.20	mg/L	1
Nitrate - N		9056A	ND		0.020	0.0050	mg/L	1
Sulfate		9056A	7.1		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	2.3		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0600	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 2.271 - 2.359

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

K96120

Description: MW-11

Matrix: Aqueous

Date Sampled: 04/22/2020 1430

Date Received: 04/22/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0600	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		100	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1240	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

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KPB 6/1/20

Client: EarthCon Consultants, Inc.

Laboratory ID: VD22089-007

Description: MW-11

Matrix: Aqueous

Date Sampled: 04/22/2020 1430

Date Received: 04/22/2020

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		104	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 2030	ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
<b>Methane</b>	<b>74-82-8</b>	<b>RSK - 175</b>	<b>140</b>		<b>10</b>	<b>2.5</b>	<b>ug/L</b>	<b>1</b>
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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MS 6/1/20

## **Laboratory Analytical Reports**



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## Report of Analysis

**EarthCon Consultants, Inc.**  
1880 West Oak Parkway  
Building 100, Suite 106  
Marietta, GA 30062  
Attention: Carol Northern

Project Name: Lennox International

Project Number: 02.20160378.00

Lot Number: **VD21078**

Date Completed: 04/29/2020

04/29/2020 3:11 PM

Approved and released by:  
Lab Director - Greenville: **Lucas Odom**



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# PACE ANALYTICAL SERVICES, LLC

SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

## **Case Narrative EarthCon Consultants, Inc. Lot Number: VD21078**

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Pace Analytical Services, LLC ("Pace") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Pace policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

# PACE ANALYTICAL SERVICES, LLC

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## Sample Summary EarthCon Consultants, Inc. Lot Number: VD21078

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-15	Aqueous	04/21/2020 1000	04/21/2020
002	MW-17	Aqueous	04/21/2020 1115	04/21/2020
003	MW-16	Aqueous	04/21/2020 1210	04/21/2020
004	MW-3D	Aqueous	04/21/2020 1300	04/21/2020
005	MW-3	Aqueous	04/21/2020 1400	04/21/2020
006	MW-4D	Aqueous	04/21/2020 1545	04/21/2020

(6 samples)

# PACE ANALYTICAL SERVICES, LLC

## Detection Summary EarthCon Consultants, Inc. Lot Number: VD21078

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-15	Aqueous	Alkalinity	SM 2320B-	23		mg/L	5
001	MW-15	Aqueous	Chloride	9056A	4.5		mg/L	5
001	MW-15	Aqueous	Nitrate - N	9056A	0.013	J	mg/L	5
001	MW-15	Aqueous	Sulfate	9056A	11		mg/L	5
001	MW-15	Aqueous	Methane	RSK - 175	6.1	J	ug/L	7
002	MW-17	Aqueous	Chloride	9056A	8.2		mg/L	8
002	MW-17	Aqueous	Nitrate - N	9056A	1.8		mg/L	8
002	MW-17	Aqueous	Sulfate	9056A	0.20	J	mg/L	8
002	MW-17	Aqueous	Chloroform	8260D	0.71	J	ug/L	8
003	MW-16	Aqueous	Chloride	9056A	12		mg/L	11
003	MW-16	Aqueous	Nitrate - N	9056A	5.8		mg/L	11
003	MW-16	Aqueous	Sulfate	9056A	0.35	J	mg/L	11
003	MW-16	Aqueous	Chloroform	8260D	1.4		ug/L	11
004	MW-3D	Aqueous	Chloride	9056A	12		mg/L	14
004	MW-3D	Aqueous	Nitrate - N	9056A	2.8		mg/L	14
004	MW-3D	Aqueous	Sulfate	9056A	0.21	J	mg/L	14
004	MW-3D	Aqueous	Chloroform	8260D	0.69	J	ug/L	14
005	MW-3	Aqueous	Chloride	9056A	52		mg/L	17
005	MW-3	Aqueous	Sulfide	SM 4500-S2 F-	0.99	J	mg/L	17
005	MW-3	Aqueous	TOC	9060A	25		mg/L	17
005	MW-3	Aqueous	1,1-Dichloroethane	8260D	1800		ug/L	17
005	MW-3	Aqueous	1,1-Dichloroethene	8260D	990		ug/L	18
005	MW-3	Aqueous	cis-1,2-Dichloroethene	8260D	30000		ug/L	18
005	MW-3	Aqueous	trans-1,2-Dichloroethene	8260D	260	J	ug/L	18
005	MW-3	Aqueous	Ethylbenzene	8260D	820		ug/L	18
005	MW-3	Aqueous	Toluene	8260D	220	J	ug/L	18
005	MW-3	Aqueous	Vinyl chloride	8260D	1700		ug/L	18
005	MW-3	Aqueous	Xylenes (total)	8260D	3300		ug/L	18
005	MW-3	Aqueous	1,4-Dioxane	8260D (SIM)	410		ug/L	18
005	MW-3	Aqueous	Ethane	RSK - 175	62		ug/L	19
005	MW-3	Aqueous	Ethene	RSK - 175	130		ug/L	19
005	MW-3	Aqueous	Methane	RSK - 175	10000		ug/L	19
006	MW-4D	Aqueous	Chloride	9056A	1.7		mg/L	20
006	MW-4D	Aqueous	Nitrate - N	9056A	0.037		mg/L	20
006	MW-4D	Aqueous	Sulfate	9056A	1.0		mg/L	20
006	MW-4D	Aqueous	Tetrachloroethene	8260D	16		ug/L	21
006	MW-4D	Aqueous	Methane	RSK - 175	4.4	J	ug/L	22

(37 detections)

Description: MW-15

Matrix: Aqueous

Date Sampled: 04/21/2020 1000

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1831	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1708	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1708	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1708	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1421	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	23		20	20	mg/L	1
Chloride		9056A	4.5		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.013	J	0.020	0.0050	mg/L	1
Sulfate		9056A	11		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/22/2020 2357	JTH		51868

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0.351 - 0.366

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-15

Matrix: Aqueous

Date Sampled: 04/21/2020 1000

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/22/2020 2357	JTH		51868		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		100	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 0117	JTH		51867		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/23/2020 1757	TML		51947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	6.1	J	10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-17

Matrix: Aqueous

Date Sampled: 04/21/2020 1115

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1835	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1728	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1728	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1728	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1445	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	8.2		1.0	0.20	mg/L	1
Nitrate - N		9056A	1.8		0.020	0.0050	mg/L	1
Sulfate		9056A	0.20	J	1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/23/2020 0020	JTH		51868

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.71	J	1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0 - 0

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

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## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/23/2020 0020	JTH		51868		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		99	70-130
Toluene-d8		99	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 0141	JTH		51867		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Q	Run 1	Acceptance
		% Recovery	Limits
1,2-Dichloroethane-d4		102	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/23/2020 1813	TML		51947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

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Description: MW-16

Matrix: Aqueous

Date Sampled: 04/21/2020 1210

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1838	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1748	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1748	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1748	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1556	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	12		1.0	0.20	mg/L	1
Nitrate - N		9056A	5.8		0.020	0.0050	mg/L	1
Sulfate		9056A	0.35	J	1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/23/2020 0044	JTH		51868

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	1.4		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0 - 0

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-16

Matrix: Aqueous

Date Sampled: 04/21/2020 1210

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/23/2020 0044	JTH		51868		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		98	70-130
Toluene-d8		97	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 0205	JTH		51867		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Q	Run 1	Acceptance
		% Recovery	Limits
1,2-Dichloroethane-d4		102	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/23/2020 1829	TML		51947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-3D

Matrix: Aqueous

Date Sampled: 04/21/2020 1300

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1845	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1808	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1808	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1808	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1620	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	12		1.0	0.20	mg/L	1
Nitrate - N		9056A	2.8		0.020	0.0050	mg/L	1
Sulfate		9056A	0.21	J	1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/23/2020 0106	JTH		51868

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.69	J	1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0 - 0.009

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Description: MW-3D

Matrix: Aqueous

Date Sampled: 04/21/2020 1300

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/23/2020 0106	JTH		51868		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		99	70-130
Toluene-d8		99	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 0230	JTH		51867		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Q	Run 1	Acceptance
		% Recovery	Limits
1,2-Dichloroethane-d4		101	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/23/2020 1845	TML		51947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-3

Matrix: Aqueous

Date Sampled: 04/21/2020 1400

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1904	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1828	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1828	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1828	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1644	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	52		1.0	0.20	mg/L	1
Nitrate - N		9056A	ND		0.020	0.0050	mg/L	1
Sulfate		9056A	ND		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	0.99	J	1.0	0.99	mg/L	1
TOC		9060A	25		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	500	04/23/2020 0349	JTH		51868

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10000	2500	ug/L	1
Benzene	71-43-2	8260D	ND		500	200	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		500	200	ug/L	1
Bromoform	75-25-2	8260D	ND		500	200	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		1000	200	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		5000	1000	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		500	200	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		500	200	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		500	200	ug/L	1
Chloroethane	75-00-3	8260D	ND		1000	200	ug/L	1
Chloroform	67-66-3	8260D	ND		500	200	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		500	250	ug/L	1
Cyclohexane	110-82-7	8260D	ND		500	200	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		500	200	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		500	200	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		500	200	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		500	200	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		500	200	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		500	200	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		1000	300	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	1800		500	200	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		500	200	ug/L	1

TOC Range: 25.291 - 25.557

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis



## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	500	04/23/2020 0349	JTH		51868		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	990		500	200	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	30000		500	200	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	260	J	500	200	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		500	200	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		500	200	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		500	200	ug/L	1	
Ethylbenzene	100-41-4	8260D	820		500	200	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		5000	1000	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		500	200	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		500	200	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		500	200	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		5000	1000	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		2500	200	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		500	200	ug/L	1	
Styrene	100-42-5	8260D	ND		500	210	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		500	200	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		500	200	ug/L	1	
Toluene	108-88-3	8260D	220	J	500	200	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		500	210	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		500	200	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		500	200	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		500	200	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		500	200	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		500	200	ug/L	1	
Vinyl chloride	75-01-4	8260D	1700		500	200	ug/L	1	
Xylenes (total)	1330-20-7	8260D	3300		500	200	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		101	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
2	5030B	8260D (SIM)	10	04/24/2020 0413	ALR1		51985		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	410		30	10	ug/L	2	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Q	Run 2	Acceptance
		% Recovery	Limits
1,2-Dichloroethane-d4		109	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/23/2020 1901	TML		51947
2		RSK - 175	10	04/28/2020 1632	TML		52290

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	62		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	130		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	10000		100	25	ug/L	2
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-4D

Matrix: Aqueous

Date Sampled: 04/21/2020 1545

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1908	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1848	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1848	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1848	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1707	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	1.7		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.037		0.020	0.0050	mg/L	1
Sulfate		9056A	1.0		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0233	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0 - 0.079

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

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## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0233	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	16		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		98	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
2	5030B	8260D (SIM)	1	04/23/2020 2319	ALR1		51985		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	2	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		109	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/23/2020 1917	TML		51947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	4.4	J	10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

## QC Summary

# Inorganic non-metals - MB

Sample ID: VQ51823-001

Matrix: Aqueous

Batch: 51823

Analytical Method: SM 2320B-2011

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Alkalinity	ND		1	20	20	mg/L	04/22/2020 1817

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ51823-002

Matrix: Aqueous

Batch: 51823

Analytical Method: SM 2320B-2011

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Alkalinity	100	100		1	101	90-110	04/22/2020 1825

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - Duplicate

Sample ID: VD21078-003DU

Matrix: Aqueous

Batch: 51823

Analytical Method: SM 2320B-2011

Parameter	Sample Amount (mg/L)	Result (mg/L)	Q	Dil	% RPD	% RPD Limit	Analysis Date
Alkalinity	ND	ND		1	0.00	20	04/22/2020 1841

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ51896-001

Matrix: Aqueous

Batch: 51896

Analytical Method: 9056A

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Chloride	ND		1	1.0	0.20	mg/L	04/22/2020 1210

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ51896-002

Matrix: Aqueous

Batch: 51896

Analytical Method: 9056A

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Chloride	20	20		1	101	80-120	04/22/2020 1249

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ51897-001

Matrix: Aqueous

Batch: 51897

Analytical Method: 9056A

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrate - N	ND		1	0.020	0.0050	mg/L	04/22/2020 1210

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ51897-002

Matrix: Aqueous

Batch: 51897

Analytical Method: 9056A

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Nitrate - N	0.80	0.83		1	104	80-120	04/22/2020 1249

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ51900-001

Matrix: Aqueous

Batch: 51900

Analytical Method: 9056A

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Sulfate	ND		1	1.0	0.20	mg/L	04/22/2020 1210

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ51900-002

Matrix: Aqueous

Batch: 51900

Analytical Method: 9056A

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfate	20	20		1	101	80-120	04/22/2020 1249

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ52045-001

Matrix: Aqueous

Batch: 52045

Analytical Method: 9060A

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
TOC	ND		1	1.0	0.42	mg/L	04/24/2020 1334

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ52045-002

Matrix: Aqueous

Batch: 52045

Analytical Method: 9060A

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TOC	20	19		1	93	90-110	04/24/2020 1357

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MS

Sample ID: VD21078-002MS

Matrix: Aqueous

Batch: 52045

Analytical Method: 9060A

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TOC	ND	20	19		1	94	70-130	04/24/2020 1508

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MSD

Sample ID: VD21078-002MD

Matrix: Aqueous

Batch: 52045

Analytical Method: 9060A

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
TOC	ND	20	19		1	96	2.1	70-130	20	04/24/2020 1532

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ52362-001

Matrix: Aqueous

Batch: 52362

Analytical Method: SM 4500-S2 F-2011

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Sulfide	ND		1	1.0	0.99	mg/L	04/28/2020 2159

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ52362-002

Matrix: Aqueous

Batch: 52362

Analytical Method: SM 4500-S2 F-2011

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfide	10	10		1	100	80-120	04/28/2020 2159

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCSD

Sample ID: VQ52362-003

Matrix: Aqueous

Batch: 52362

Analytical Method: SM 4500-S2 F-2011

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Sulfide	10	10		1	100	0.00	80-120	20	04/28/2020 2159

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - MB

Sample ID: VQ51867-001

Matrix: Aqueous

Batch: 51867

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
1,4-Dioxane	ND		1	3.0	1.0	ug/L	04/22/2020 2230
Surrogate	Q	% Rec	Acceptance Limit				
1,2-Dichloroethane-d4		99	40-170				

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - LCS

Sample ID: VQ51867-002

Matrix: Aqueous

Batch: 51867

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dioxane	50	48		1	96	70-130	04/22/2020 2128
Surrogate	Q	% Rec				Acceptance Limit	
1,2-Dichloroethane-d4		101				40-170	

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MB

Sample ID: VQ51868-001

Matrix: Aqueous

Batch: 51868

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	20	5.0	ug/L	04/22/2020 2009
Benzene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Bromodichloromethane	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Bromoform	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Bromomethane (Methyl bromide)	ND		1	2.0	0.40	ug/L	04/22/2020 2009
2-Butanone (MEK)	ND		1	10	2.0	ug/L	04/22/2020 2009
Carbon disulfide	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Carbon tetrachloride	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Chlorobenzene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Chloroethane	ND		1	2.0	0.40	ug/L	04/22/2020 2009
Chloroform	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Chloromethane (Methyl chloride)	ND		1	1.0	0.50	ug/L	04/22/2020 2009
Cyclohexane	ND		1	1.0	0.40	ug/L	04/22/2020 2009
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Dibromochloromethane	ND		1	1.0	0.40	ug/L	04/22/2020 2009
1,2-Dibromoethane (EDB)	ND		1	1.0	0.40	ug/L	04/22/2020 2009
1,2-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
1,3-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
1,4-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Dichlorodifluoromethane	ND		1	2.0	0.60	ug/L	04/22/2020 2009
1,1-Dichloroethane	ND		1	1.0	0.40	ug/L	04/22/2020 2009
1,2-Dichloroethane	ND		1	1.0	0.40	ug/L	04/22/2020 2009
1,1-Dichloroethene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
cis-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
trans-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
1,2-Dichloropropane	ND		1	1.0	0.40	ug/L	04/22/2020 2009
cis-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
trans-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Ethylbenzene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
2-Hexanone	ND		1	10	2.0	ug/L	04/22/2020 2009
Isopropylbenzene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Methyl acetate	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Methyl tertiary butyl ether (MTBE)	ND		1	1.0	0.40	ug/L	04/22/2020 2009
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	04/22/2020 2009
Methylcyclohexane	ND		1	5.0	0.40	ug/L	04/22/2020 2009
Methylene chloride	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Styrene	ND		1	1.0	0.41	ug/L	04/22/2020 2009
1,1,2,2-Tetrachloroethane	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Tetrachloroethene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Toluene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	04/22/2020 2009
1,2,4-Trichlorobenzene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
1,1,1-Trichloroethane	ND		1	1.0	0.40	ug/L	04/22/2020 2009
1,1,2-Trichloroethane	ND		1	1.0	0.40	ug/L	04/22/2020 2009

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MB

Sample ID: VQ51868-001

Matrix: Aqueous

Batch: 51868

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Trichlorofluoromethane	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Vinyl chloride	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Xylenes (total)	ND		1	1.0	0.40	ug/L	04/22/2020 2009
Surrogate	Q	% Rec	Acceptance Limit				
Bromofluorobenzene		94	70-130				
1,2-Dichloroethane-d4		96	70-130				
Toluene-d8		98	70-130				

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - LCS

Sample ID: VQ51868-002

Matrix: Aqueous

Batch: 51868

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acetone	100	100		1	103	60-140	04/22/2020 1814
Benzene	50	54		1	107	70-130	04/22/2020 1814
Bromodichloromethane	50	53		1	106	70-130	04/22/2020 1814
Bromoform	50	49		1	97	70-130	04/22/2020 1814
Bromomethane (Methyl bromide)	50	46		1	93	70-130	04/22/2020 1814
2-Butanone (MEK)	100	100		1	104	70-130	04/22/2020 1814
Carbon disulfide	50	55		1	110	70-130	04/22/2020 1814
Carbon tetrachloride	50	48		1	95	70-130	04/22/2020 1814
Chlorobenzene	50	53		1	105	70-130	04/22/2020 1814
Chloroethane	50	46		1	91	70-130	04/22/2020 1814
Chloroform	50	49		1	99	70-130	04/22/2020 1814
Chloromethane (Methyl chloride)	50	46		1	92	60-140	04/22/2020 1814
Cyclohexane	50	55		1	110	70-130	04/22/2020 1814
1,2-Dibromo-3-chloropropane (DBCP)	50	52		1	104	70-130	04/22/2020 1814
Dibromochloromethane	50	54		1	107	70-130	04/22/2020 1814
1,2-Dibromoethane (EDB)	50	51		1	103	70-130	04/22/2020 1814
1,2-Dichlorobenzene	50	52		1	103	70-130	04/22/2020 1814
1,3-Dichlorobenzene	50	52		1	104	70-130	04/22/2020 1814
1,4-Dichlorobenzene	50	52		1	103	70-130	04/22/2020 1814
Dichlorodifluoromethane	50	42		1	84	60-140	04/22/2020 1814
1,1-Dichloroethane	50	51		1	102	70-130	04/22/2020 1814
1,2-Dichloroethane	50	50		1	100	70-130	04/22/2020 1814
1,1-Dichloroethene	50	54		1	109	70-130	04/22/2020 1814
cis-1,2-Dichloroethene	50	51		1	102	70-130	04/22/2020 1814
trans-1,2-Dichloroethene	50	51		1	102	70-130	04/22/2020 1814
1,2-Dichloropropane	50	53		1	107	70-130	04/22/2020 1814
cis-1,3-Dichloropropene	50	56		1	112	70-130	04/22/2020 1814
trans-1,3-Dichloropropene	50	55		1	109	70-130	04/22/2020 1814
Ethylbenzene	50	54		1	108	70-130	04/22/2020 1814
2-Hexanone	100	98		1	98	70-130	04/22/2020 1814
Isopropylbenzene	50	55		1	109	70-130	04/22/2020 1814
Methyl acetate	50	48		1	96	70-130	04/22/2020 1814
Methyl tertiary butyl ether (MTBE)	50	53		1	107	70-130	04/22/2020 1814
4-Methyl-2-pentanone	100	110		1	113	70-130	04/22/2020 1814
Methylcyclohexane	50	51		1	102	70-130	04/22/2020 1814
Methylene chloride	50	49		1	98	70-130	04/22/2020 1814
Styrene	50	55		1	109	70-130	04/22/2020 1814
1,1,2,2-Tetrachloroethane	50	50		1	99	70-130	04/22/2020 1814
Tetrachloroethene	50	55		1	110	70-130	04/22/2020 1814
Toluene	50	53		1	107	70-130	04/22/2020 1814
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	50		1	100	70-130	04/22/2020 1814
1,2,4-Trichlorobenzene	50	51		1	103	70-130	04/22/2020 1814
1,1,1-Trichloroethane	50	52		1	103	70-130	04/22/2020 1814
1,1,2-Trichloroethane	50	51		1	101	70-130	04/22/2020 1814

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - LCS

Sample ID: VQ51868-002

Matrix: Aqueous

Batch: 51868

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Trichloroethene	50	55		1	109	70-130	04/22/2020 1814
Trichlorofluoromethane	50	46		1	91	70-130	04/22/2020 1814
Vinyl chloride	50	49		1	98	70-130	04/22/2020 1814
Xylenes (total)	100	110		1	108	70-130	04/22/2020 1814
Surrogate	Q	% Rec			Acceptance Limit		
Bromofluorobenzene		98			70-130		
1,2-Dichloroethane-d4		96			70-130		
Toluene-d8		97			70-130		

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - MB

Sample ID: VQ51985-001

Matrix: Aqueous

Batch: 51985

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
1,4-Dioxane	ND		1	3.0	1.0	ug/L	04/23/2020 2147
Surrogate	Q	% Rec	Acceptance Limit				
1,2-Dichloroethane-d4		103	40-170				

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - LCS

Sample ID: VQ51985-002

Matrix: Aqueous

Batch: 51985

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dioxane	50	46		1	91	70-130	04/23/2020 2047
Surrogate	Q	% Rec	Acceptance Limit				
1,2-Dichloroethane-d4		97	40-170				

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - MS

Sample ID: VD21078-005MS

Matrix: Aqueous

Batch: 51985

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dioxane	410	500	860		10	90	70-130	04/24/2020 0437
Surrogate	Q	% Rec	Acceptance Limit					
1,2-Dichloroethane-d4		115	40-170					

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - MSD

Sample ID: VD21078-005MD

Matrix: Aqueous

Batch: 51985

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
1,4-Dioxane	410	500	890		10	96	3.4	70-130	20	04/24/2020 0502
Surrogate	Q	% Rec	Acceptance Limit							
1,2-Dichloroethane-d4		119	40-170							

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MB

Sample ID: VQ52001-001

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	20	5.0	ug/L	04/23/2020 2330
Benzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Bromodichloromethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Bromoform	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Bromomethane (Methyl bromide)	ND		1	2.0	0.40	ug/L	04/23/2020 2330
2-Butanone (MEK)	ND		1	10	2.0	ug/L	04/23/2020 2330
Carbon disulfide	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Carbon tetrachloride	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Chlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Chloroethane	ND		1	2.0	0.40	ug/L	04/23/2020 2330
Chloroform	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Chloromethane (Methyl chloride)	ND		1	1.0	0.50	ug/L	04/23/2020 2330
Cyclohexane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Dibromochloromethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dibromoethane (EDB)	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,3-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,4-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Dichlorodifluoromethane	ND		1	2.0	0.60	ug/L	04/23/2020 2330
1,1-Dichloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dichloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,1-Dichloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
cis-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
trans-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dichloropropane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
cis-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
trans-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Ethylbenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
2-Hexanone	ND		1	10	2.0	ug/L	04/23/2020 2330
Isopropylbenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Methyl acetate	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Methyl tertiary butyl ether (MTBE)	ND		1	1.0	0.40	ug/L	04/23/2020 2330
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	04/23/2020 2330
Methylcyclohexane	ND		1	5.0	0.40	ug/L	04/23/2020 2330
Methylene chloride	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Styrene	ND		1	1.0	0.41	ug/L	04/23/2020 2330
1,1,2,2-Tetrachloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Tetrachloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Toluene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	04/23/2020 2330
1,2,4-Trichlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,1,1-Trichloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,1,2-Trichloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MB

Sample ID: VQ52001-001

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Trichlorofluoromethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Vinyl chloride	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Xylenes (total)	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Surrogate	Q	% Rec	Acceptance Limit				
Bromofluorobenzene		96	70-130				
1,2-Dichloroethane-d4		98	70-130				
Toluene-d8		98	70-130				

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - LCS

Sample ID: VQ52001-002

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acetone	100	140		1	135	60-140	04/23/2020 2228
Benzene	50	52		1	103	70-130	04/23/2020 2228
Bromodichloromethane	50	51		1	103	70-130	04/23/2020 2228
Bromoform	50	47		1	93	70-130	04/23/2020 2228
Bromomethane (Methyl bromide)	50	45		1	89	70-130	04/23/2020 2228
2-Butanone (MEK)	100	110		1	113	70-130	04/23/2020 2228
Carbon disulfide	50	53		1	106	70-130	04/23/2020 2228
Carbon tetrachloride	50	46		1	92	70-130	04/23/2020 2228
Chlorobenzene	50	50		1	100	70-130	04/23/2020 2228
Chloroethane	50	45		1	89	70-130	04/23/2020 2228
Chloroform	50	48		1	96	70-130	04/23/2020 2228
Chloromethane (Methyl chloride)	50	41		1	83	60-140	04/23/2020 2228
Cyclohexane	50	52		1	104	70-130	04/23/2020 2228
1,2-Dibromo-3-chloropropane (DBCP)	50	51		1	101	70-130	04/23/2020 2228
Dibromochloromethane	50	52		1	104	70-130	04/23/2020 2228
1,2-Dibromoethane (EDB)	50	50		1	99	70-130	04/23/2020 2228
1,2-Dichlorobenzene	50	51		1	101	70-130	04/23/2020 2228
1,3-Dichlorobenzene	50	51		1	101	70-130	04/23/2020 2228
1,4-Dichlorobenzene	50	50		1	100	70-130	04/23/2020 2228
Dichlorodifluoromethane	50	42		1	85	60-140	04/23/2020 2228
1,1-Dichloroethane	50	49		1	97	70-130	04/23/2020 2228
1,2-Dichloroethane	50	49		1	99	70-130	04/23/2020 2228
1,1-Dichloroethene	50	52		1	104	70-130	04/23/2020 2228
cis-1,2-Dichloroethene	50	49		1	98	70-130	04/23/2020 2228
trans-1,2-Dichloroethene	50	49		1	98	70-130	04/23/2020 2228
1,2-Dichloropropane	50	52		1	103	70-130	04/23/2020 2228
cis-1,3-Dichloropropene	50	53		1	106	70-130	04/23/2020 2228
trans-1,3-Dichloropropene	50	52		1	104	70-130	04/23/2020 2228
Ethylbenzene	50	53		1	106	70-130	04/23/2020 2228
2-Hexanone	100	100		1	101	70-130	04/23/2020 2228
Isopropylbenzene	50	53		1	107	70-130	04/23/2020 2228
Methyl acetate	50	46		1	93	70-130	04/23/2020 2228
Methyl tertiary butyl ether (MTBE)	50	52		1	104	70-130	04/23/2020 2228
4-Methyl-2-pentanone	100	110		1	113	70-130	04/23/2020 2228
Methylcyclohexane	50	51		1	102	70-130	04/23/2020 2228
Methylene chloride	50	47		1	93	70-130	04/23/2020 2228
Styrene	50	52		1	104	70-130	04/23/2020 2228
1,1,2,2-Tetrachloroethane	50	50		1	100	70-130	04/23/2020 2228
Tetrachloroethene	50	53		1	107	70-130	04/23/2020 2228
Toluene	50	52		1	104	70-130	04/23/2020 2228
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	48		1	96	70-130	04/23/2020 2228
1,2,4-Trichlorobenzene	50	51		1	101	70-130	04/23/2020 2228
1,1,1-Trichloroethane	50	51		1	102	70-130	04/23/2020 2228
1,1,2-Trichloroethane	50	50		1	99	70-130	04/23/2020 2228

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - LCS

Sample ID: VQ52001-002

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Trichloroethene	50	53		1	106	70-130	04/23/2020 2228
Trichlorofluoromethane	50	45		1	91	70-130	04/23/2020 2228
Vinyl chloride	50	46		1	92	70-130	04/23/2020 2228
Xylenes (total)	100	100		1	105	70-130	04/23/2020 2228
Surrogate	Q	% Rec			Acceptance Limit		
Bromofluorobenzene		91			70-130		
1,2-Dichloroethane-d4		91			70-130		
Toluene-d8		90			70-130		

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Dissolved Gases - MB

Sample ID: VQ51947-001

Matrix: Aqueous

Batch: 51947

Analytical Method: RSK - 175

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ethane	ND		1	10	2.5	ug/L	04/23/2020 1357
Ethene	ND		1	10	2.5	ug/L	04/23/2020 1357
Methane	ND		1	10	2.5	ug/L	04/23/2020 1357
Propane	ND		1	15	5.0	ug/L	04/23/2020 1357

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Dissolved Gases - LCS

Sample ID: VQ51947-002

Matrix: Aqueous

Batch: 51947

Analytical Method: RSK - 175

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Ethane	550	510		1	93	70-130	04/23/2020 1254
Ethene	520	480		1	92	70-130	04/23/2020 1254
Methane	300	260		1	89	70-130	04/23/2020 1254
Propane	810	640		1	79	70-130	04/23/2020 1254

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Dissolved Gases - LCSD

Sample ID: VQ51947-003

Matrix: Aqueous

Batch: 51947

Analytical Method: RSK - 175

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Ethane	550	510		1	92	0.58	70-130	30	04/23/2020 1338
Ethene	520	470		1	92	0.51	70-130	30	04/23/2020 1338
Methane	300	260		1	89	0.32	70-130	30	04/23/2020 1338
Propane	810	640		1	79	0.72	70-130	30	04/23/2020 1338

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Dissolved Gases - MB

Sample ID: VQ52290-001

Matrix: Aqueous

Batch: 52290

Analytical Method: RSK - 175

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Methane	ND		1	10	2.5	ug/L	04/28/2020 1158

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Dissolved Gases - LCS

Sample ID: VQ52290-002

Matrix: Aqueous

Batch: 52290

Analytical Method: RSK - 175

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Methane	300	250		1	84	70-130	04/28/2020 1119

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Dissolved Gases - LCSD

Sample ID: VQ52290-003

Matrix: Aqueous

Batch: 52290

Analytical Method: RSK - 175

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Methane	300	330		1	111	27	70-130	30	04/28/2020 1139

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Chain of Custody  
and  
Miscellaneous Documents



# PACE ANALYTICAL SERVICES, LLC

Shealy Environmental Services, Inc.  
Document Number: M09018C-14

Page 1 of 1  
Effective Date: 8/2/2018

## Sample Receipt Checklist (SRC)

Client: EARTHCON

Cooler Inspected by/date: JSH / 04/21/2020

Lot #: VD21078

Means of receipt: <input type="checkbox"/> SESI <input checked="" type="checkbox"/> Client <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Other:	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1. Were custody seals present on the cooler?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	2. If custody seals were present, were they intact and unbroken?
pH Strip ID: 20-0209 Chlorine Strip ID: NA Tested by: JSH	
Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA 3.6 / 3.6 °C NA / NA °C NA / NA °C NA / NA °C	
Method: <input checked="" type="checkbox"/> Temperature Blank <input type="checkbox"/> Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C	
Method of coolant: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Ice Packs <input type="checkbox"/> Dry Ice <input type="checkbox"/> None	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	4. Is the commercial courier's packing slip attached to this form?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. Were proper custody procedures (relinquished/received) followed?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. Were sample IDs listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7. Were sample IDs listed on all sample containers?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8. Was collection date & time listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9. Was collection date & time listed on all sample containers?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10. Did all container label information (ID, date, time) agree with the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. Were tests to be performed listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	13. Was adequate sample volume available?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	14. Were all samples received within 1/2 the holding time or 48 hours, whichever comes first?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (1/4" or 6mm in diameter) in any of the VOA vials?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	19. Were all applicable NH <sub>3</sub> /TKN/cyanide/phenol/625 (< 0.5mg/l.) samples free of residual chlorine?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	21. Was the quote number listed on the container label? If yes, Quote # NA
<b>Sample Preservation</b> (Must be completed for any sample(s) incorrectly preserved or with headspace.)	
Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA	
Time of preservation NA. If more than one preservative is needed, please note in the comments below.	
Sample(s) NA were received with bubbles >6 mm in diameter.	
Sample(s) NA were received with TRC > 0.5 mg/L (If #19 is na) and were adjusted accordingly in sample receiving with sodium thiosulfate (Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ) with Shealy ID: NA	
SR barcode labels applied by: JSH Date: 04/21/2020	
Comments:	



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## Report of Analysis

**EarthCon Consultants, Inc.**  
1880 West Oak Parkway  
Building 100, Suite 106  
Marietta, GA 30062  
Attention: Carol Northern

Project Name: Lennox International

Project Number: 02.20160378.00

Lot Number: **VD21079**

Date Completed: 04/29/2020

04/29/2020 3:17 PM

Approved and released by:  
Lab Director - Greenville: **Lucas Odom**



The electronic signature above is the equivalent of a handwritten signature.  
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# PACE ANALYTICAL SERVICES, LLC

SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

## **Case Narrative EarthCon Consultants, Inc. Lot Number: VD21079**

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Pace Analytical Services, LLC ("Pace") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Pace policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

# PACE ANALYTICAL SERVICES, LLC

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## Sample Summary EarthCon Consultants, Inc. Lot Number: VD21079

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-8	Aqueous	04/21/2020 0950	04/21/2020
002	MW-7	Aqueous	04/21/2020 1100	04/21/2020
003	MW-1	Aqueous	04/21/2020 1210	04/21/2020
004	MW-1D	Aqueous	04/21/2020 1350	04/21/2020
005	MW-6R	Aqueous	04/21/2020 1500	04/21/2020
006	DUP-01	Aqueous	04/21/2020	04/21/2020
007	TRIP BLANK	Aqueous	04/21/2020	04/21/2020

(7 samples)



# PACE ANALYTICAL SERVICES, LLC

## Detection Summary EarthCon Consultants, Inc. Lot Number: VD21079

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-8	Aqueous	Chloride	9056A	8.3		mg/L	7
001	MW-8	Aqueous	Nitrate - N	9056A	0.015	J	mg/L	7
001	MW-8	Aqueous	Sulfate	9056A	7.3		mg/L	7
001	MW-8	Aqueous	TOC	9060A	2.0		mg/L	7
001	MW-8	Aqueous	1,4-Dioxane	8260D (SIM)	3.2		ug/L	8
001	MW-8	Aqueous	Methane	RSK - 175	190		ug/L	9
002	MW-7	Aqueous	Alkalinity	SM 2320B-	24		mg/L	10
002	MW-7	Aqueous	Chloride	9056A	5.7		mg/L	10
002	MW-7	Aqueous	Nitrate - N	9056A	0.062		mg/L	10
002	MW-7	Aqueous	Sulfate	9056A	2.8		mg/L	10
002	MW-7	Aqueous	Sulfide	SM 4500-S2 F-	1.1		mg/L	10
002	MW-7	Aqueous	TOC	9060A	5.4		mg/L	10
002	MW-7	Aqueous	cis-1,2-Dichloroethene	8260D	560		ug/L	11
002	MW-7	Aqueous	trans-1,2-Dichloroethene	8260D	4.2	J	ug/L	11
002	MW-7	Aqueous	Ethylbenzene	8260D	47		ug/L	11
002	MW-7	Aqueous	Vinyl chloride	8260D	110		ug/L	11
002	MW-7	Aqueous	Xylenes (total)	8260D	140		ug/L	11
002	MW-7	Aqueous	Ethane	RSK - 175	4.2	J	ug/L	12
002	MW-7	Aqueous	Ethene	RSK - 175	18		ug/L	12
002	MW-7	Aqueous	Methane	RSK - 175	270		ug/L	12
003	MW-1	Aqueous	Chloride	9056A	15		mg/L	13
003	MW-1	Aqueous	Sulfate	9056A	7.0		mg/L	13
003	MW-1	Aqueous	TOC	9060A	1.1		mg/L	13
003	MW-1	Aqueous	cis-1,2-Dichloroethene	8260D	670		ug/L	14
003	MW-1	Aqueous	Ethylbenzene	8260D	24		ug/L	14
003	MW-1	Aqueous	Vinyl chloride	8260D	24		ug/L	14
003	MW-1	Aqueous	Xylenes (total)	8260D	110		ug/L	14
003	MW-1	Aqueous	Ethene	RSK - 175	6.4	J	ug/L	15
003	MW-1	Aqueous	Methane	RSK - 175	170		ug/L	15
004	MW-1D	Aqueous	Chloride	9056A	2.9		mg/L	16
004	MW-1D	Aqueous	Nitrate - N	9056A	0.024		mg/L	16
004	MW-1D	Aqueous	Sulfate	9056A	0.73	J	mg/L	16
004	MW-1D	Aqueous	Tetrachloroethene	8260D	16		ug/L	17
004	MW-1D	Aqueous	Trichloroethene	8260D	4.2		ug/L	17
005	MW-6R	Aqueous	Chloride	9056A	3.0		mg/L	19
005	MW-6R	Aqueous	Nitrate - N	9056A	0.43		mg/L	19
005	MW-6R	Aqueous	Sulfate	9056A	1.1		mg/L	19
005	MW-6R	Aqueous	TOC	9060A	4.9		mg/L	19
006	DUP-01	Aqueous	Chloride	9056A	15		mg/L	22
006	DUP-01	Aqueous	Sulfate	9056A	7.2		mg/L	22
006	DUP-01	Aqueous	TOC	9060A	1.1		mg/L	22
006	DUP-01	Aqueous	cis-1,2-Dichloroethene	8260D	660		ug/L	23
006	DUP-01	Aqueous	Ethylbenzene	8260D	26		ug/L	23
006	DUP-01	Aqueous	Vinyl chloride	8260D	23		ug/L	23
006	DUP-01	Aqueous	Xylenes (total)	8260D	130		ug/L	23

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## Detection Summary (Continued)

Lot Number: VD21079

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Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
006	DUP-01	Aqueous	Ethene	RSK - 175	6.7	J	ug/L	24
006	DUP-01	Aqueous	Methane	RSK - 175	170		ug/L	24

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(47 detections)

Description: MW-8

Matrix: Aqueous

Date Sampled: 04/21/2020 0950

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1915	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1908	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1908	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1908	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1819	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	8.3		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.015	J	0.020	0.0050	mg/L	1
Sulfate		9056A	7.3		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	2.0		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0256	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 1.914 - 2.043

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-8

Matrix: Aqueous

Date Sampled: 04/21/2020 0950

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0256	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		99	70-130
Toluene-d8		98	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 0343	JTH		51867		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	3.2		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Run 1		Acceptance Limits
	Q	% Recovery	
1,2-Dichloroethane-d4		100	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1302	TML		52290
2		RSK - 175	1	04/29/2020 1053	TML		52389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	190		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	2

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-7

Matrix: Aqueous

Date Sampled: 04/21/2020 1100

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1922	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 1927	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 1927	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 1927	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1843	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	24		20	20	mg/L	1
Chloride		9056A	5.7		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.062		0.020	0.0050	mg/L	1
Sulfate		9056A	2.8		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	1.1		1.0	0.99	mg/L	1
TOC		9060A	5.4		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	10	04/25/2020 0519	STM		52103

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		200	50	ug/L	2
Benzene	71-43-2	8260D	ND		10	4.0	ug/L	2
Bromodichloromethane	75-27-4	8260D	ND		10	4.0	ug/L	2
Bromoform	75-25-2	8260D	ND		10	4.0	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		20	4.0	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	ND		100	20	ug/L	2
Carbon disulfide	75-15-0	8260D	ND		10	4.0	ug/L	2
Carbon tetrachloride	56-23-5	8260D	ND		10	4.0	ug/L	2
Chlorobenzene	108-90-7	8260D	ND		10	4.0	ug/L	2
Chloroethane	75-00-3	8260D	ND		20	4.0	ug/L	2
Chloroform	67-66-3	8260D	ND		10	4.0	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		10	5.0	ug/L	2
Cyclohexane	110-82-7	8260D	ND		10	4.0	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		10	4.0	ug/L	2
Dibromochloromethane	124-48-1	8260D	ND		10	4.0	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		10	4.0	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	ND		10	4.0	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	ND		10	4.0	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	ND		10	4.0	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	ND		20	6.0	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	ND		10	4.0	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	ND		10	4.0	ug/L	2

TOC Range: 5.399 - 5.477

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
2	5030B	8260D	10	04/25/2020 0519	STM		52103		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		10	4.0	ug/L	2	
cis-1,2-Dichloroethene	156-59-2	8260D	560		10	4.0	ug/L	2	
trans-1,2-Dichloroethene	156-60-5	8260D	4.2	J	10	4.0	ug/L	2	
1,2-Dichloropropane	78-87-5	8260D	ND		10	4.0	ug/L	2	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		10	4.0	ug/L	2	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		10	4.0	ug/L	2	
Ethylbenzene	100-41-4	8260D	47		10	4.0	ug/L	2	
2-Hexanone	591-78-6	8260D	ND		100	20	ug/L	2	
Isopropylbenzene	98-82-8	8260D	ND		10	4.0	ug/L	2	
Methyl acetate	79-20-9	8260D	ND		10	4.0	ug/L	2	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		10	4.0	ug/L	2	
4-Methyl-2-pentanone	108-10-1	8260D	ND		100	20	ug/L	2	
Methylcyclohexane	108-87-2	8260D	ND		50	4.0	ug/L	2	
Methylene chloride	75-09-2	8260D	ND		10	4.0	ug/L	2	
Styrene	100-42-5	8260D	ND		10	4.1	ug/L	2	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		10	4.0	ug/L	2	
Tetrachloroethene	127-18-4	8260D	ND		10	4.0	ug/L	2	
Toluene	108-88-3	8260D	ND		10	4.0	ug/L	2	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		10	4.2	ug/L	2	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		10	4.0	ug/L	2	
1,1,1-Trichloroethane	71-55-6	8260D	ND		10	4.0	ug/L	2	
1,1,2-Trichloroethane	79-00-5	8260D	ND		10	4.0	ug/L	2	
Trichloroethene	79-01-6	8260D	ND		10	4.0	ug/L	2	
Trichlorofluoromethane	75-69-4	8260D	ND		10	4.0	ug/L	2	
Vinyl chloride	75-01-4	8260D	110		10	4.0	ug/L	2	
Xylenes (total)	1330-20-7	8260D	140		10	4.0	ug/L	2	

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		100	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 0408	JTH		51867		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Description: MW-7

Matrix: Aqueous

Date Sampled: 04/21/2020 1100

Date Received: 04/21/2020

Surrogate	Run 1		Acceptance Limits
	Q	% Recovery	
1,2-Dichloroethane-d4		102	40-170

## Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1318	TML		52290
2		RSK - 175	1	04/29/2020 1109	TML		52389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	4.2	J	10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	18		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	270		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	2

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Description: MW-1

Matrix: Aqueous

Date Sampled: 04/21/2020 1210

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1927	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 2027	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 2027	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 2027	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1907	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	15		1.0	0.20	mg/L	1
Nitrate - N		9056A	ND		0.020	0.0050	mg/L	1
Sulfate		9056A	7.0		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	1.1		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	10	04/25/2020 0543	STM		52103

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		200	50	ug/L	2
Benzene	71-43-2	8260D	ND		10	4.0	ug/L	2
Bromodichloromethane	75-27-4	8260D	ND		10	4.0	ug/L	2
Bromoform	75-25-2	8260D	ND		10	4.0	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		20	4.0	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	ND		100	20	ug/L	2
Carbon disulfide	75-15-0	8260D	ND		10	4.0	ug/L	2
Carbon tetrachloride	56-23-5	8260D	ND		10	4.0	ug/L	2
Chlorobenzene	108-90-7	8260D	ND		10	4.0	ug/L	2
Chloroethane	75-00-3	8260D	ND		20	4.0	ug/L	2
Chloroform	67-66-3	8260D	ND		10	4.0	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		10	5.0	ug/L	2
Cyclohexane	110-82-7	8260D	ND		10	4.0	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		10	4.0	ug/L	2
Dibromochloromethane	124-48-1	8260D	ND		10	4.0	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		10	4.0	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	ND		10	4.0	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	ND		10	4.0	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	ND		10	4.0	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	ND		20	6.0	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	ND		10	4.0	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	ND		10	4.0	ug/L	2

TOC Range: 1.079 - 1.163

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

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Description: MW-1

Matrix: Aqueous

Date Sampled: 04/21/2020 1210

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
2	5030B	8260D	10	04/25/2020 0543	STM		52103			
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run		
1,1-Dichloroethene	75-35-4	8260D	ND		10	4.0	ug/L	2		
cis-1,2-Dichloroethene	156-59-2	8260D	670		10	4.0	ug/L	2		
trans-1,2-Dichloroethene	156-60-5	8260D	ND		10	4.0	ug/L	2		
1,2-Dichloropropane	78-87-5	8260D	ND		10	4.0	ug/L	2		
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		10	4.0	ug/L	2		
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		10	4.0	ug/L	2		
Ethylbenzene	100-41-4	8260D	24		10	4.0	ug/L	2		
2-Hexanone	591-78-6	8260D	ND		100	20	ug/L	2		
Isopropylbenzene	98-82-8	8260D	ND		10	4.0	ug/L	2		
Methyl acetate	79-20-9	8260D	ND		10	4.0	ug/L	2		
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		10	4.0	ug/L	2		
4-Methyl-2-pentanone	108-10-1	8260D	ND		100	20	ug/L	2		
Methylcyclohexane	108-87-2	8260D	ND		50	4.0	ug/L	2		
Methylene chloride	75-09-2	8260D	ND		10	4.0	ug/L	2		
Styrene	100-42-5	8260D	ND		10	4.1	ug/L	2		
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		10	4.0	ug/L	2		
Tetrachloroethene	127-18-4	8260D	ND		10	4.0	ug/L	2		
Toluene	108-88-3	8260D	ND		10	4.0	ug/L	2		
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		10	4.2	ug/L	2		
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		10	4.0	ug/L	2		
1,1,1-Trichloroethane	71-55-6	8260D	ND		10	4.0	ug/L	2		
1,1,2-Trichloroethane	79-00-5	8260D	ND		10	4.0	ug/L	2		
Trichloroethene	79-01-6	8260D	ND		10	4.0	ug/L	2		
Trichlorofluoromethane	75-69-4	8260D	ND		10	4.0	ug/L	2		
Vinyl chloride	75-01-4	8260D	24		10	4.0	ug/L	2		
Xylenes (total)	1330-20-7	8260D	110		10	4.0	ug/L	2		

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		97	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260D (SIM)	1	04/23/2020 0432	JTH		51867			
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run		
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1		

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Run 1		Acceptance Limits
	Q	% Recovery	
1,2-Dichloroethane-d4		102	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1333	TML		52290
2		RSK - 175	1	04/29/2020 1125	TML		52389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	6.4	J	10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	170		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	2

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-1D

Matrix: Aqueous

Date Sampled: 04/21/2020 1350

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1932	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 2127	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 2127	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 2127	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1931	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	2.9		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.024		0.020	0.0050	mg/L	1
Sulfate		9056A	0.73	J	1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0320	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0.05 - 0.087

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

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## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0320	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	16		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	4.2		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
Bromofluorobenzene		98	70-130						
1,2-Dichloroethane-d4		101	70-130						
Toluene-d8		99	70-130						

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1418	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Q	Run 1	Acceptance
		% Recovery	Limits
1,2-Dichloroethane-d4		104	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1349	TML		52290
2		RSK - 175	1	04/29/2020 1141	TML		52389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	2

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1940	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 2147	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 2147	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 2147	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 1955	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	3.0		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.43		0.020	0.0050	mg/L	1
Sulfate		9056A	1.1		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	4.9		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0342	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 4.909 - 5.02

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0342	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		100	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1442	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Run 1		Acceptance Limits
	Q	% Recovery	
1,2-Dichloroethane-d4		107	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1405	TML		52290
2		RSK - 175	1	04/29/2020 1157	TML		52389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	2

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: DUP-01

Matrix: Aqueous

Date Sampled: 04/21/2020

Date Received: 04/21/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/22/2020 1946	KFE		51823
1		(Chloride) 9056A	1	04/22/2020 2207	AMR		51896
1		(Nitrate - N) 9056A	1	04/22/2020 2207	AMR		51897
1		(Sulfate) 9056A	1	04/22/2020 2207	AMR		51900
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 2019	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	15		1.0	0.20	mg/L	1
Nitrate - N		9056A	ND		0.020	0.0050	mg/L	1
Sulfate		9056A	7.2		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	1.1		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	10	04/25/2020 0606	STM		52103

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		200	50	ug/L	2
Benzene	71-43-2	8260D	ND		10	4.0	ug/L	2
Bromodichloromethane	75-27-4	8260D	ND		10	4.0	ug/L	2
Bromoform	75-25-2	8260D	ND		10	4.0	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		20	4.0	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	ND		100	20	ug/L	2
Carbon disulfide	75-15-0	8260D	ND		10	4.0	ug/L	2
Carbon tetrachloride	56-23-5	8260D	ND		10	4.0	ug/L	2
Chlorobenzene	108-90-7	8260D	ND		10	4.0	ug/L	2
Chloroethane	75-00-3	8260D	ND		20	4.0	ug/L	2
Chloroform	67-66-3	8260D	ND		10	4.0	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		10	5.0	ug/L	2
Cyclohexane	110-82-7	8260D	ND		10	4.0	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		10	4.0	ug/L	2
Dibromochloromethane	124-48-1	8260D	ND		10	4.0	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		10	4.0	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	ND		10	4.0	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	ND		10	4.0	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	ND		10	4.0	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	ND		20	6.0	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	ND		10	4.0	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	ND		10	4.0	ug/L	2

TOC Range: 1.022 - 1.114

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: DUP-01

Matrix: Aqueous

Date Sampled: 04/21/2020

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
2	5030B	8260D	10	04/25/2020 0606	STM		52103		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		10	4.0	ug/L	2	
cis-1,2-Dichloroethene	156-59-2	8260D	660		10	4.0	ug/L	2	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		10	4.0	ug/L	2	
1,2-Dichloropropane	78-87-5	8260D	ND		10	4.0	ug/L	2	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		10	4.0	ug/L	2	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		10	4.0	ug/L	2	
Ethylbenzene	100-41-4	8260D	26		10	4.0	ug/L	2	
2-Hexanone	591-78-6	8260D	ND		100	20	ug/L	2	
Isopropylbenzene	98-82-8	8260D	ND		10	4.0	ug/L	2	
Methyl acetate	79-20-9	8260D	ND		10	4.0	ug/L	2	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		10	4.0	ug/L	2	
4-Methyl-2-pentanone	108-10-1	8260D	ND		100	20	ug/L	2	
Methylcyclohexane	108-87-2	8260D	ND		50	4.0	ug/L	2	
Methylene chloride	75-09-2	8260D	ND		10	4.0	ug/L	2	
Styrene	100-42-5	8260D	ND		10	4.1	ug/L	2	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		10	4.0	ug/L	2	
Tetrachloroethene	127-18-4	8260D	ND		10	4.0	ug/L	2	
Toluene	108-88-3	8260D	ND		10	4.0	ug/L	2	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		10	4.2	ug/L	2	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		10	4.0	ug/L	2	
1,1,1-Trichloroethane	71-55-6	8260D	ND		10	4.0	ug/L	2	
1,1,2-Trichloroethane	79-00-5	8260D	ND		10	4.0	ug/L	2	
Trichloroethene	79-01-6	8260D	ND		10	4.0	ug/L	2	
Trichlorofluoromethane	75-69-4	8260D	ND		10	4.0	ug/L	2	
Vinyl chloride	75-01-4	8260D	23		10	4.0	ug/L	2	
Xylenes (total)	1330-20-7	8260D	130		10	4.0	ug/L	2	

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		96	70-130
Toluene-d8		101	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1507	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Description: DUP-01

Matrix: Aqueous

Date Sampled: 04/21/2020

Date Received: 04/21/2020

Surrogate	Q	Run 1	Acceptance
		% Recovery	Limits
1,2-Dichloroethane-d4		103	40-170

## Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1421	TML		52290
2		RSK - 175	1	04/29/2020 1213	TML		52389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	6.7	J	10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	170		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	2

LOQ = Limit of Quantitation

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Description: TRIP BLANK

Matrix: Aqueous

Date Sampled: 04/21/2020

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0014	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1	
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1	
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1	
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1	
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1	
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1	
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1	
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1	
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1	
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1	
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1	
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1	
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1	
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1	
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1	
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1	
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1	
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Description: TRIP BLANK

Matrix: Aqueous

Date Sampled: 04/21/2020

Date Received: 04/21/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0014	STM		52001		
Parameter		CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloro-1,2,2-Trifluoroethane		76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene		120-82-1	8260D	ND		1.0	0.40	ug/L	1
1,1,1-Trichloroethane		71-55-6	8260D	ND		1.0	0.40	ug/L	1
1,1,2-Trichloroethane		79-00-5	8260D	ND		1.0	0.40	ug/L	1
Trichloroethene		79-01-6	8260D	ND		1.0	0.40	ug/L	1
Trichlorofluoromethane		75-69-4	8260D	ND		1.0	0.40	ug/L	1
Vinyl chloride		75-01-4	8260D	ND		1.0	0.40	ug/L	1
Xylenes (total)		1330-20-7	8260D	ND		1.0	0.40	ug/L	1
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
Bromofluorobenzene		93	70-130						
1,2-Dichloroethane-d4		98	70-130						
Toluene-d8		97	70-130						

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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## QC Summary

# Inorganic non-metals - MB

Sample ID: VQ51823-001

Matrix: Aqueous

Batch: 51823

Analytical Method: SM 2320B-2011

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Alkalinity	ND		1	20	20	mg/L	04/22/2020 1817

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ51823-002

Matrix: Aqueous

Batch: 51823

Analytical Method: SM 2320B-2011

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Alkalinity	100	100		1	101	90-110	04/22/2020 1825

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ51896-001

Matrix: Aqueous

Batch: 51896

Analytical Method: 9056A

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Chloride	ND		1	1.0	0.20	mg/L	04/22/2020 1210

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ51896-002

Matrix: Aqueous

Batch: 51896

Analytical Method: 9056A

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Chloride	20	20		1	101	80-120	04/22/2020 1249

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MS

Sample ID: VD21079-003MS

Matrix: Aqueous

Batch: 51896

Analytical Method: 9056A

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Chloride	15	20	35		1	100	80-120	04/22/2020 2047

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MSD

Sample ID: VD21079-003MD

Matrix: Aqueous

Batch: 51896

Analytical Method: 9056A

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Chloride	15	20	34		1	96	1.8	80-120	20	04/22/2020 2107

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ51897-001

Matrix: Aqueous

Batch: 51897

Analytical Method: 9056A

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrate - N	ND		1	0.020	0.0050	mg/L	04/22/2020 1210

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ51897-002

Matrix: Aqueous

Batch: 51897

Analytical Method: 9056A

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Nitrate - N	0.80	0.83		1	104	80-120	04/22/2020 1249

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MS

Sample ID: VD21079-003MS

Matrix: Aqueous

Batch: 51897

Analytical Method: 9056A

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Nitrate - N	ND	0.80	0.82		1	102	80-120	04/22/2020 2047

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MSD

Sample ID: VD21079-003MD

Matrix: Aqueous

Batch: 51897

Analytical Method: 9056A

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Nitrate - N	ND	0.80	0.79		1	99	3.7	80-120	20	04/22/2020 2107

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ51900-001

Matrix: Aqueous

Batch: 51900

Analytical Method: 9056A

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Sulfate	ND		1	1.0	0.20	mg/L	04/22/2020 1210

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ51900-002

Matrix: Aqueous

Batch: 51900

Analytical Method: 9056A

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfate	20	20		1	101	80-120	04/22/2020 1249

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MS

Sample ID: VD21079-003MS

Matrix: Aqueous

Batch: 51900

Analytical Method: 9056A

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfate	7.0	20	28		1	103	80-120	04/22/2020 2047

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MSD

Sample ID: VD21079-003MD

Matrix: Aqueous

Batch: 51900

Analytical Method: 9056A

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Sulfate	7.0	20	27		1	100	2.6	80-120	20	04/22/2020 2107

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ52045-001

Matrix: Aqueous

Batch: 52045

Analytical Method: 9060A

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
TOC	ND		1	1.0	0.42	mg/L	04/24/2020 1334

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ52045-002

Matrix: Aqueous

Batch: 52045

Analytical Method: 9060A

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TOC	20	19		1	93	90-110	04/24/2020 1357

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ52362-001

Matrix: Aqueous

Batch: 52362

Analytical Method: SM 4500-S2 F-2011

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Sulfide	ND		1	1.0	0.99	mg/L	04/28/2020 2159

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ52362-002

Matrix: Aqueous

Batch: 52362

Analytical Method: SM 4500-S2 F-2011

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfide	10	10		1	100	80-120	04/28/2020 2159

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCSD

Sample ID: VQ52362-003

Matrix: Aqueous

Batch: 52362

Analytical Method: SM 4500-S2 F-2011

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Sulfide	10	10		1	100	0.00	80-120	20	04/28/2020 2159

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - MB

Sample ID: VQ51867-001

Matrix: Aqueous

Batch: 51867

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
1,4-Dioxane	ND		1	3.0	1.0	ug/L	04/22/2020 2230
Surrogate	Q	% Rec	Acceptance Limit				
1,2-Dichloroethane-d4		99	40-170				

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - LCS

Sample ID: VQ51867-002

Matrix: Aqueous

Batch: 51867

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dioxane	50	48		1	96	70-130	04/22/2020 2128
Surrogate	Q	% Rec				Acceptance Limit	
1,2-Dichloroethane-d4		101				40-170	

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - MB

Sample ID: VQ51929-001

Matrix: Aqueous

Batch: 51929

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
1,4-Dioxane	ND		1	3.0	1.0	ug/L	04/23/2020 0935
Surrogate	Q	% Rec	Acceptance Limit				
1,2-Dichloroethane-d4		104	40-170				

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - LCS

Sample ID: VQ51929-002

Matrix: Aqueous

Batch: 51929

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dioxane	50	53		1	106	70-130	04/23/2020 0829
Surrogate	Q	% Rec				Acceptance Limit	
1,2-Dichloroethane-d4		120				40-170	

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MB

Sample ID: VQ52001-001

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	20	5.0	ug/L	04/23/2020 2330
Benzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Bromodichloromethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Bromoform	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Bromomethane (Methyl bromide)	ND		1	2.0	0.40	ug/L	04/23/2020 2330
2-Butanone (MEK)	ND		1	10	2.0	ug/L	04/23/2020 2330
Carbon disulfide	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Carbon tetrachloride	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Chlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Chloroethane	ND		1	2.0	0.40	ug/L	04/23/2020 2330
Chloroform	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Chloromethane (Methyl chloride)	ND		1	1.0	0.50	ug/L	04/23/2020 2330
Cyclohexane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Dibromochloromethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dibromoethane (EDB)	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,3-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,4-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Dichlorodifluoromethane	ND		1	2.0	0.60	ug/L	04/23/2020 2330
1,1-Dichloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dichloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,1-Dichloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
cis-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
trans-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dichloropropane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
cis-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
trans-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Ethylbenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
2-Hexanone	ND		1	10	2.0	ug/L	04/23/2020 2330
Isopropylbenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Methyl acetate	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Methyl tertiary butyl ether (MTBE)	ND		1	1.0	0.40	ug/L	04/23/2020 2330
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	04/23/2020 2330
Methylcyclohexane	ND		1	5.0	0.40	ug/L	04/23/2020 2330
Methylene chloride	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Styrene	ND		1	1.0	0.41	ug/L	04/23/2020 2330
1,1,2,2-Tetrachloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Tetrachloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Toluene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	04/23/2020 2330
1,2,4-Trichlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,1,1-Trichloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,1,2-Trichloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MB

Sample ID: VQ52001-001

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Trichlorofluoromethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Vinyl chloride	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Xylenes (total)	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Surrogate	Q	% Rec	Acceptance Limit				
Bromofluorobenzene		96	70-130				
1,2-Dichloroethane-d4		98	70-130				
Toluene-d8		98	70-130				

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - LCS

Sample ID: VQ52001-002

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acetone	100	140		1	135	60-140	04/23/2020 2228
Benzene	50	52		1	103	70-130	04/23/2020 2228
Bromodichloromethane	50	51		1	103	70-130	04/23/2020 2228
Bromoform	50	47		1	93	70-130	04/23/2020 2228
Bromomethane (Methyl bromide)	50	45		1	89	70-130	04/23/2020 2228
2-Butanone (MEK)	100	110		1	113	70-130	04/23/2020 2228
Carbon disulfide	50	53		1	106	70-130	04/23/2020 2228
Carbon tetrachloride	50	46		1	92	70-130	04/23/2020 2228
Chlorobenzene	50	50		1	100	70-130	04/23/2020 2228
Chloroethane	50	45		1	89	70-130	04/23/2020 2228
Chloroform	50	48		1	96	70-130	04/23/2020 2228
Chloromethane (Methyl chloride)	50	41		1	83	60-140	04/23/2020 2228
Cyclohexane	50	52		1	104	70-130	04/23/2020 2228
1,2-Dibromo-3-chloropropane (DBCP)	50	51		1	101	70-130	04/23/2020 2228
Dibromochloromethane	50	52		1	104	70-130	04/23/2020 2228
1,2-Dibromoethane (EDB)	50	50		1	99	70-130	04/23/2020 2228
1,2-Dichlorobenzene	50	51		1	101	70-130	04/23/2020 2228
1,3-Dichlorobenzene	50	51		1	101	70-130	04/23/2020 2228
1,4-Dichlorobenzene	50	50		1	100	70-130	04/23/2020 2228
Dichlorodifluoromethane	50	42		1	85	60-140	04/23/2020 2228
1,1-Dichloroethane	50	49		1	97	70-130	04/23/2020 2228
1,2-Dichloroethane	50	49		1	99	70-130	04/23/2020 2228
1,1-Dichloroethene	50	52		1	104	70-130	04/23/2020 2228
cis-1,2-Dichloroethene	50	49		1	98	70-130	04/23/2020 2228
trans-1,2-Dichloroethene	50	49		1	98	70-130	04/23/2020 2228
1,2-Dichloropropane	50	52		1	103	70-130	04/23/2020 2228
cis-1,3-Dichloropropene	50	53		1	106	70-130	04/23/2020 2228
trans-1,3-Dichloropropene	50	52		1	104	70-130	04/23/2020 2228
Ethylbenzene	50	53		1	106	70-130	04/23/2020 2228
2-Hexanone	100	100		1	101	70-130	04/23/2020 2228
Isopropylbenzene	50	53		1	107	70-130	04/23/2020 2228
Methyl acetate	50	46		1	93	70-130	04/23/2020 2228
Methyl tertiary butyl ether (MTBE)	50	52		1	104	70-130	04/23/2020 2228
4-Methyl-2-pentanone	100	110		1	113	70-130	04/23/2020 2228
Methylcyclohexane	50	51		1	102	70-130	04/23/2020 2228
Methylene chloride	50	47		1	93	70-130	04/23/2020 2228
Styrene	50	52		1	104	70-130	04/23/2020 2228
1,1,2,2-Tetrachloroethane	50	50		1	100	70-130	04/23/2020 2228
Tetrachloroethene	50	53		1	107	70-130	04/23/2020 2228
Toluene	50	52		1	104	70-130	04/23/2020 2228
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	48		1	96	70-130	04/23/2020 2228
1,2,4-Trichlorobenzene	50	51		1	101	70-130	04/23/2020 2228
1,1,1-Trichloroethane	50	51		1	102	70-130	04/23/2020 2228
1,1,2-Trichloroethane	50	50		1	99	70-130	04/23/2020 2228

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - LCS

Sample ID: VQ52001-002

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Trichloroethene	50	53		1	106	70-130	04/23/2020 2228
Trichlorofluoromethane	50	45		1	91	70-130	04/23/2020 2228
Vinyl chloride	50	46		1	92	70-130	04/23/2020 2228
Xylenes (total)	100	100		1	105	70-130	04/23/2020 2228
Surrogate	Q	% Rec			Acceptance Limit		
Bromofluorobenzene		91			70-130		
1,2-Dichloroethane-d4		91			70-130		
Toluene-d8		90			70-130		

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MB

Sample ID: VQ52103-001

Matrix: Aqueous

Batch: 52103

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	20	5.0	ug/L	04/24/2020 2227
Benzene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Bromodichloromethane	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Bromoform	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Bromomethane (Methyl bromide)	ND		1	2.0	0.40	ug/L	04/24/2020 2227
2-Butanone (MEK)	ND		1	10	2.0	ug/L	04/24/2020 2227
Carbon disulfide	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Carbon tetrachloride	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Chlorobenzene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Chloroethane	ND		1	2.0	0.40	ug/L	04/24/2020 2227
Chloroform	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Chloromethane (Methyl chloride)	ND		1	1.0	0.50	ug/L	04/24/2020 2227
Cyclohexane	ND		1	1.0	0.40	ug/L	04/24/2020 2227
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Dibromochloromethane	ND		1	1.0	0.40	ug/L	04/24/2020 2227
1,2-Dibromoethane (EDB)	ND		1	1.0	0.40	ug/L	04/24/2020 2227
1,2-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
1,3-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
1,4-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Dichlorodifluoromethane	ND		1	2.0	0.60	ug/L	04/24/2020 2227
1,1-Dichloroethane	ND		1	1.0	0.40	ug/L	04/24/2020 2227
1,2-Dichloroethane	ND		1	1.0	0.40	ug/L	04/24/2020 2227
1,1-Dichloroethene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
cis-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
trans-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
1,2-Dichloropropane	ND		1	1.0	0.40	ug/L	04/24/2020 2227
cis-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
trans-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Ethylbenzene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
2-Hexanone	ND		1	10	2.0	ug/L	04/24/2020 2227
Isopropylbenzene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Methyl acetate	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Methyl tertiary butyl ether (MTBE)	ND		1	1.0	0.40	ug/L	04/24/2020 2227
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	04/24/2020 2227
Methylcyclohexane	ND		1	5.0	0.40	ug/L	04/24/2020 2227
Methylene chloride	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Styrene	ND		1	1.0	0.41	ug/L	04/24/2020 2227
1,1,2,2-Tetrachloroethane	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Tetrachloroethene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Toluene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	04/24/2020 2227
1,2,4-Trichlorobenzene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
1,1,1-Trichloroethane	ND		1	1.0	0.40	ug/L	04/24/2020 2227
1,1,2-Trichloroethane	ND		1	1.0	0.40	ug/L	04/24/2020 2227

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MB

Sample ID: VQ52103-001

Matrix: Aqueous

Batch: 52103

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Trichlorofluoromethane	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Vinyl chloride	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Xylenes (total)	ND		1	1.0	0.40	ug/L	04/24/2020 2227
Surrogate	Q	% Rec	Acceptance Limit				
Bromofluorobenzene		91	70-130				
1,2-Dichloroethane-d4		97	70-130				
Toluene-d8		96	70-130				

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - LCS

Sample ID: VQ52103-002

Matrix: Aqueous

Batch: 52103

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acetone	100	110		1	113	60-140	04/24/2020 2124
Benzene	50	49		1	98	70-130	04/24/2020 2124
Bromodichloromethane	50	48		1	96	70-130	04/24/2020 2124
Bromoform	50	42		1	84	70-130	04/24/2020 2124
Bromomethane (Methyl bromide)	50	45		1	90	70-130	04/24/2020 2124
2-Butanone (MEK)	100	100		1	100	70-130	04/24/2020 2124
Carbon disulfide	50	52		1	103	70-130	04/24/2020 2124
Carbon tetrachloride	50	44		1	88	70-130	04/24/2020 2124
Chlorobenzene	50	47		1	94	70-130	04/24/2020 2124
Chloroethane	50	45		1	89	70-130	04/24/2020 2124
Chloroform	50	45		1	91	70-130	04/24/2020 2124
Chloromethane (Methyl chloride)	50	44		1	88	60-140	04/24/2020 2124
Cyclohexane	50	55		1	109	70-130	04/24/2020 2124
1,2-Dibromo-3-chloropropane (DBCP)	50	48		1	96	70-130	04/24/2020 2124
Dibromochloromethane	50	48		1	95	70-130	04/24/2020 2124
1,2-Dibromoethane (EDB)	50	46		1	92	70-130	04/24/2020 2124
1,2-Dichlorobenzene	50	46		1	92	70-130	04/24/2020 2124
1,3-Dichlorobenzene	50	46		1	91	70-130	04/24/2020 2124
1,4-Dichlorobenzene	50	46		1	91	70-130	04/24/2020 2124
Dichlorodifluoromethane	50	42		1	85	60-140	04/24/2020 2124
1,1-Dichloroethane	50	47		1	94	70-130	04/24/2020 2124
1,2-Dichloroethane	50	47		1	95	70-130	04/24/2020 2124
1,1-Dichloroethene	50	50		1	100	70-130	04/24/2020 2124
cis-1,2-Dichloroethene	50	47		1	93	70-130	04/24/2020 2124
trans-1,2-Dichloroethene	50	46		1	93	70-130	04/24/2020 2124
1,2-Dichloropropane	50	49		1	98	70-130	04/24/2020 2124
cis-1,3-Dichloropropene	50	49		1	99	70-130	04/24/2020 2124
trans-1,3-Dichloropropene	50	48		1	97	70-130	04/24/2020 2124
Ethylbenzene	50	49		1	97	70-130	04/24/2020 2124
2-Hexanone	100	85		1	85	70-130	04/24/2020 2124
Isopropylbenzene	50	49		1	98	70-130	04/24/2020 2124
Methyl acetate	50	45		1	90	70-130	04/24/2020 2124
Methyl tertiary butyl ether (MTBE)	50	49		1	99	70-130	04/24/2020 2124
4-Methyl-2-pentanone	100	110		1	106	70-130	04/24/2020 2124
Methylcyclohexane	50	48		1	96	70-130	04/24/2020 2124
Methylene chloride	50	46		1	92	70-130	04/24/2020 2124
Styrene	50	48		1	95	70-130	04/24/2020 2124
1,1,2,2-Tetrachloroethane	50	46		1	92	70-130	04/24/2020 2124
Tetrachloroethene	50	49		1	98	70-130	04/24/2020 2124
Toluene	50	48		1	95	70-130	04/24/2020 2124
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	47		1	94	70-130	04/24/2020 2124
1,2,4-Trichlorobenzene	50	46		1	92	70-130	04/24/2020 2124
1,1,1-Trichloroethane	50	49		1	98	70-130	04/24/2020 2124
1,1,2-Trichloroethane	50	45		1	90	70-130	04/24/2020 2124

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - LCS

Sample ID: VQ52103-002

Matrix: Aqueous

Batch: 52103

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Trichloroethene	50	49		1	98	70-130	04/24/2020 2124
Trichlorofluoromethane	50	46		1	91	70-130	04/24/2020 2124
Vinyl chloride	50	46		1	92	70-130	04/24/2020 2124
Xylenes (total)	100	97		1	97	70-130	04/24/2020 2124
Surrogate	Q	% Rec			Acceptance Limit		
Bromofluorobenzene		89			70-130		
1,2-Dichloroethane-d4		92			70-130		
Toluene-d8		89			70-130		

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Dissolved Gases - MB

Sample ID: VQ52290-001

Matrix: Aqueous

Batch: 52290

Analytical Method: RSK - 175

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ethane	ND		1	10	2.5	ug/L	04/28/2020 1158
Ethene	ND		1	10	2.5	ug/L	04/28/2020 1158
Methane	ND		1	10	2.5	ug/L	04/28/2020 1158

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Dissolved Gases - LCS

Sample ID: VQ52290-002

Matrix: Aqueous

Batch: 52290

Analytical Method: RSK - 175

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Ethane	550	480		1	87	70-130	04/28/2020 1119
Ethene	520	450		1	87	70-130	04/28/2020 1119
Methane	300	250		1	84	70-130	04/28/2020 1119

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Dissolved Gases - LCSD

Sample ID: VQ52290-003

Matrix: Aqueous

Batch: 52290

Analytical Method: RSK - 175

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Ethane	550	560		1	101	14	70-130	30	04/28/2020 1139
Ethene	520	510		1	99	13	70-130	30	04/28/2020 1139
Methane	300	330		1	111	27	70-130	30	04/28/2020 1139

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Dissolved Gases - MB

Sample ID: VQ52389-001

Matrix: Aqueous

Batch: 52389

Analytical Method: RSK - 175

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Propane	ND		1	15	5.0	ug/L	04/29/2020 0917

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Dissolved Gases - LCS

Sample ID: VQ52389-002

Matrix: Aqueous

Batch: 52389

Analytical Method: RSK - 175

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Propane	810	600		1	74	70-130	04/29/2020 0841

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Dissolved Gases - LCSD

Sample ID: VQ52389-003

Matrix: Aqueous

Batch: 52389

Analytical Method: RSK - 175

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Propane	810	590		1	73	1.9	70-130	30	04/29/2020 0855

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Chain of Custody  
and  
Miscellaneous Documents



# PACE ANALYTICAL SERVICES, LLC

Shealy Environmental Services, Inc.  
Document Number: MIS0018C-14

Page 1 of 1  
Effective Date: 8/2/2018

## Sample Receipt Checklist (SRC)

Client: **EARTHCON** Cooler Inspected by/date: **JSH / 04/21/2020** Lot #: **VD21079**

Means of receipt: <input type="checkbox"/> SESI <input checked="" type="checkbox"/> Client <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Other: _____	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1. Were custody seals present on the cooler?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	2. If custody seals were present, were they intact and unbroken?
pH Strip ID: <b>20-0209</b> Chlorine Strip ID: <b>NA</b> Tested by: <b>JSH</b>	
Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: <b>NA</b> <b>3.2 / 3.2 °C NA / NA °C NA / NA °C NA / NA °C</b>	
Method: <input checked="" type="checkbox"/> Temperature Blank <input type="checkbox"/> Against Bottles IR Gun ID: <b>6</b> IR Gun Correction Factor: <b>0</b> °C	
Method of coolant: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Ice Packs <input type="checkbox"/> Dry Ice <input type="checkbox"/> None	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: <b>phone / email / face-to-face</b> (circle one).
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	4. Is the commercial courier's packing slip attached to this form?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. Were proper custody procedures (relinquished/received) followed?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. Were sample IDs listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7. Were sample IDs listed on all sample containers?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8. Was collection date & time listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9. Was collection date & time listed on all sample containers?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10. Did all container label information (ID, date, time) agree with the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. Were tests to be performed listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	13. Was adequate sample volume available?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼" or 6mm in diameter) in any of the VOA vials?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	19. Were all applicable NH <sub>3</sub> /TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	21. Was the quote number listed on the container label? If yes, Quote # <b>NA</b>
<b>Sample Preservation</b> (Must be completed for any sample(s) incorrectly preserved or with headspace.)	
Sample(s) <b>NA</b> were received incorrectly preserved and were adjusted accordingly in sample receiving with <b>NA</b> mL of circle one: H <sub>2</sub> SO <sub>4</sub> , HNO <sub>3</sub> , HCl, NaOH using SR # <b>NA</b> . Time of preservation <b>NA</b> . If more than one preservative is needed, please note in the comments below.	
Sample(s) <b>NA</b> were received with bubbles >6 mm in diameter.	
Samples(s) <b>NA</b> were received with TRC > 0.5 mg/L. (If #19 is <i>no</i> ) and were adjusted accordingly in sample receiving with sodium thiosulfate (Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub> ) with Shealy ID: <b>NA</b> .	
SR barcode labels applied by: <b>JSH</b> Date: <b>04/21/2020</b>	
Comments: _____ _____ _____ _____	



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## Report of Analysis

**EarthCon Consultants, Inc.**  
1880 West Oak Parkway  
Building 100, Suite 106  
Marietta, GA 30062  
Attention: Carol Northern

Project Name: Lennox International

Project Number: 02.20160378.00

Lot Number: **VD22089**

Date Completed: 04/29/2020

04/29/2020 3:20 PM

Approved and released by:  
Lab Director - Greenville: **Lucas Odom**



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Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)  
106 Vantage Point Drive West Columbia, SC 29172  
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com



# PACE ANALYTICAL SERVICES, LLC

SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

**Case Narrative**  
**EarthCon Consultants, Inc.**  
**Lot Number: VD22089**

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Pace Analytical Services, LLC ("Pace") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Pace policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

# PACE ANALYTICAL SERVICES, LLC

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## Sample Summary EarthCon Consultants, Inc. Lot Number: VD22089

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Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-2	Aqueous	04/22/2020 1045	04/22/2020
002	MW-2D	Aqueous	04/22/2020 1145	04/22/2020
003	MW-14	Aqueous	04/22/2020 1245	04/22/2020
004	MW--5	Aqueous	04/22/2020 1420	04/22/2020
005	MW-4	Aqueous	04/22/2020 1130	04/22/2020
006	MW-10	Aqueous	04/22/2020 1330	04/22/2020
007	MW-11	Aqueous	04/22/2020 1430	04/22/2020

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(7 samples)

# PACE ANALYTICAL SERVICES, LLC

## Detection Summary EarthCon Consultants, Inc. Lot Number: VD22089

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-2	Aqueous	Chloride	9056A	6.8		mg/L	6
001	MW-2	Aqueous	Nitrate - N	9056A	1.7		mg/L	6
002	MW-2D	Aqueous	Chloride	9056A	2.6		mg/L	9
002	MW-2D	Aqueous	Nitrate - N	9056A	0.067		mg/L	9
002	MW-2D	Aqueous	Sulfate	9056A	1.2		mg/L	9
003	MW-14	Aqueous	Chloride	9056A	2.6		mg/L	12
003	MW-14	Aqueous	Sulfate	9056A	4.2		mg/L	12
003	MW-14	Aqueous	TOC	9060A	0.95	J	mg/L	12
003	MW-14	Aqueous	Acetone	8260D	8.4	J	ug/L	12
003	MW-14	Aqueous	Toluene	8260D	3.3		ug/L	13
003	MW-14	Aqueous	Methane	RSK - 175	60		ug/L	14
004	MW--5	Aqueous	Chloride	9056A	16		mg/L	15
004	MW--5	Aqueous	Nitrate - N	9056A	0.32		mg/L	15
004	MW--5	Aqueous	Sulfate	9056A	0.58	J	mg/L	15
004	MW--5	Aqueous	1,1-Dichloroethane	8260D	2.5	J	ug/L	15
004	MW--5	Aqueous	cis-1,2-Dichloroethene	8260D	320		ug/L	16
004	MW--5	Aqueous	trans-1,2-Dichloroethene	8260D	2.7	J	ug/L	16
004	MW--5	Aqueous	Tetrachloroethene	8260D	110		ug/L	16
004	MW--5	Aqueous	Trichloroethene	8260D	170		ug/L	16
004	MW--5	Aqueous	Vinyl chloride	8260D	5.1		ug/L	16
004	MW--5	Aqueous	1,4-Dioxane	8260D (SIM)	9.1		ug/L	16
004	MW--5	Aqueous	Methane	RSK - 175	2100		ug/L	17
005	MW-4	Aqueous	Chloride	9056A	7.7		mg/L	18
005	MW-4	Aqueous	Nitrate - N	9056A	0.048		mg/L	18
005	MW-4	Aqueous	Sulfate	9056A	0.86	J	mg/L	18
005	MW-4	Aqueous	cis-1,2-Dichloroethene	8260D	6.6		ug/L	19
005	MW-4	Aqueous	Tetrachloroethene	8260D	3.2		ug/L	19
005	MW-4	Aqueous	1,1,2-Trichloroethane	8260D	0.61	J	ug/L	19
005	MW-4	Aqueous	Trichloroethene	8260D	4.5		ug/L	19
005	MW-4	Aqueous	Methane	RSK - 175	9.7	J	ug/L	20
006	MW-10	Aqueous	Chloride	9056A	4.5		mg/L	21
006	MW-10	Aqueous	Sulfate	9056A	4.6		mg/L	21
006	MW-10	Aqueous	TOC	9060A	1.4		mg/L	21
006	MW-10	Aqueous	Methane	RSK - 175	32		ug/L	23
007	MW-11	Aqueous	Alkalinity	SM 2320B-	50		mg/L	24
007	MW-11	Aqueous	Chloride	9056A	2.9		mg/L	24
007	MW-11	Aqueous	Sulfate	9056A	7.1		mg/L	24
007	MW-11	Aqueous	TOC	9060A	2.3		mg/L	24
007	MW-11	Aqueous	Methane	RSK - 175	140		ug/L	26

(39 detections)

Description: MW-2

Matrix: Aqueous

Date Sampled: 04/22/2020 1045

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1228	KFE		52328
1		(Chloride) 9056A	1	04/23/2020 2341	AMR		52063
1		(Nitrate - N) 9056A	1	04/23/2020 2341	AMR		52064
1		(Sulfate) 9056A	1	04/23/2020 2341	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 2043	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	6.8		1.0	0.20	mg/L	1
Nitrate - N		9056A	1.7		0.020	0.0050	mg/L	1
Sulfate		9056A	ND		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0406	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0.015 - 0.05

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

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Description: MW-2

Matrix: Aqueous

Date Sampled: 04/22/2020 1045

Date Received: 04/22/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0406	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		101	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1013	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Run 1		Acceptance Limits
	Q	% Recovery	
1,2-Dichloroethane-d4		103	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1854	ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-2D

Matrix: Aqueous

Date Sampled: 04/22/2020 1145

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1234	KFE		52328
1		(Chloride) 9056A	1	04/24/2020 0001	AMR		52063
1		(Nitrate - N) 9056A	1	04/24/2020 0001	AMR		52064
1		(Sulfate) 9056A	1	04/24/2020 0001	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 2155	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	2.6		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.067		0.020	0.0050	mg/L	1
Sulfate		9056A	1.2		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0429	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0 - 0.001

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

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## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0429	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		100	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1037	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Q	Run 1	Acceptance
		% Recovery	Limits
1,2-Dichloroethane-d4		103	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1910	ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-14

Matrix: Aqueous

Date Sampled: 04/22/2020 1245

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1239	KFE		52328
1		(Chloride) 9056A	1	04/24/2020 0021	AMR		52063
1		(Nitrate - N) 9056A	1	04/24/2020 0021	AMR		52064
1		(Sulfate) 9056A	1	04/24/2020 0021	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 2306	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	2.6		1.0	0.20	mg/L	1
Nitrate - N		9056A	ND		0.020	0.0050	mg/L	1
Sulfate		9056A	4.2		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	0.95	J	1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0451	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	8.4	J	20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0.905 - 0.969

LOQ = Limit of Quantitation    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    DL = Detection Limit  
 ND = Not detected at or above the DL    N = Recovery is out of criteria    P = The RPD between two GC columns exceeds 40%    J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time    W = Reported on wet weight basis

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## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0451	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	3.3		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		98	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
2	5030B	8260D (SIM)	1	04/27/2020 1456	TML		52204		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	2	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Q	Run 2	Acceptance
		% Recovery	Limits
1,2-Dichloroethane-d4		109	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1926	ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	60		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

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Description: MW--5

Matrix: Aqueous

Date Sampled: 04/22/2020 1420

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1245	KFE		52328
1		(Chloride) 9056A	1	04/24/2020 0041	AMR		52063
1		(Nitrate - N) 9056A	1	04/24/2020 0041	AMR		52064
1		(Sulfate) 9056A	1	04/24/2020 0041	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 2330	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	16		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.32		0.020	0.0050	mg/L	1
Sulfate		9056A	0.58	J	1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	04/24/2020 0624	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		100	25	ug/L	1
Benzene	71-43-2	8260D	ND		5.0	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		5.0	2.0	ug/L	1
Bromoform	75-25-2	8260D	ND		5.0	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		10	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		50	10	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		5.0	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		5.0	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		5.0	2.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		10	2.0	ug/L	1
Chloroform	67-66-3	8260D	ND		5.0	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		5.0	2.5	ug/L	1
Cyclohexane	110-82-7	8260D	ND		5.0	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		5.0	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		5.0	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		5.0	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		5.0	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		5.0	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		5.0	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		10	3.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	2.5	J	5.0	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		5.0	2.0	ug/L	1

TOC Range: 0.199 - 0.233

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	5	04/24/2020 0624	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		5.0	2.0	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	320		5.0	2.0	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	2.7	J	5.0	2.0	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		5.0	2.0	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		5.0	2.0	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		5.0	2.0	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		5.0	2.0	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		50	10	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		5.0	2.0	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		5.0	2.0	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		5.0	2.0	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		50	10	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		25	2.0	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		5.0	2.0	ug/L	1	
Styrene	100-42-5	8260D	ND		5.0	2.1	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		5.0	2.0	ug/L	1	
Tetrachloroethene	127-18-4	8260D	110		5.0	2.0	ug/L	1	
Toluene	108-88-3	8260D	ND		5.0	2.0	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		5.0	2.1	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		5.0	2.0	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		5.0	2.0	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		5.0	2.0	ug/L	1	
Trichloroethene	79-01-6	8260D	170		5.0	2.0	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		5.0	2.0	ug/L	1	
Vinyl chloride	75-01-4	8260D	5.1		5.0	2.0	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		5.0	2.0	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		99	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1126	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	9.1		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		104	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1942	ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	2100		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-4

Matrix: Aqueous

Date Sampled: 04/22/2020 1130

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1251	KFE		52328
1		(Chloride) 9056A	1	04/24/2020 0101	AMR		52063
1		(Nitrate - N) 9056A	1	04/24/2020 0101	AMR		52064
1		(Sulfate) 9056A	1	04/24/2020 0101	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/24/2020 2354	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	7.7		1.0	0.20	mg/L	1
Nitrate - N		9056A	0.048		0.020	0.0050	mg/L	1
Sulfate		9056A	0.86	J	1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	ND		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0538	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 0.289 - 0.311

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

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## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0538	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	6.6		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	3.2		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	0.61	J	1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	4.5		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		99	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1151	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Run 1		Acceptance Limits
	Q	% Recovery	
1,2-Dichloroethane-d4		103	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 1958	ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	9.7	J	10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-10

Matrix: Aqueous

Date Sampled: 04/22/2020 1330

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1257	KFE		52328
1		(Chloride) 9056A	1	04/24/2020 0121	AMR		52063
1		(Nitrate - N) 9056A	1	04/24/2020 0121	AMR		52064
1		(Sulfate) 9056A	1	04/24/2020 0121	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/25/2020 0018	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	ND		20	20	mg/L	1
Chloride		9056A	4.5		1.0	0.20	mg/L	1
Nitrate - N		9056A	ND		0.020	0.0050	mg/L	1
Sulfate		9056A	4.6		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	1.4		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0514	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 1.371 - 1.414

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-10

Matrix: Aqueous

Date Sampled: 04/22/2020 1330

Date Received: 04/22/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0514	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		100	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1215	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Q	Run 1	Acceptance
		% Recovery	Limits
1,2-Dichloroethane-d4		104	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020	2014 ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	32		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-11

Matrix: Aqueous

Date Sampled: 04/22/2020 1430

Date Received: 04/22/2020

## Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2020 1302	KFE		52328
1		(Chloride) 9056A	1	04/24/2020 0141	AMR		52063
1		(Nitrate - N) 9056A	1	04/24/2020 0141	AMR		52064
1		(Sulfate) 9056A	1	04/24/2020 0141	AMR		52061
1		(Sulfide) SM 4500-S2 F-2011	1	04/28/2020 2159	HET		52362
1		(TOC) 9060A	1	04/25/2020 0042	DMA		52045

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity		SM 2320B-	50		20	20	mg/L	1
Chloride		9056A	2.9		1.0	0.20	mg/L	1
Nitrate - N		9056A	ND		0.020	0.0050	mg/L	1
Sulfate		9056A	7.1		1.0	0.20	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F-	ND		1.0	0.99	mg/L	1
TOC		9060A	2.3		1.0	0.42	mg/L	1

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	04/24/2020 0600	STM		52001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1

TOC Range: 2.271 - 2.359

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis

Description: MW-11

Matrix: Aqueous

Date Sampled: 04/22/2020 1430

Date Received: 04/22/2020

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D	1	04/24/2020 0600	STM		52001		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1	
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1	
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1	
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1	
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1	
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1	
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1	
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1	
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1	
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1	
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1	
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1	
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1	
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1	
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1	
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1	
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1	
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1	
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1	
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1	
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1	
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1	
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1	
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		100	70-130

## Volatile Organic Compounds by GC/MS (SIM)

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260D (SIM)	1	04/23/2020 1240	BWS		51929		
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run	
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	1.0	ug/L	1	

LOQ = Limit of Quantitation

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

ND = Not detected at or above the DL

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

J = Estimated result &lt; LOQ and ≥ DL

H = Out of holding time

W = Reported on wet weight basis

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Surrogate	Q	Run 1	Acceptance
		% Recovery	Limits
1,2-Dichloroethane-d4		104	40-170

### Dissolved Gases

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	04/28/2020 2030	ALR1		52349

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	140		10	2.5	ug/L	1
Propane	74-98-6	RSK - 175	ND		15	5.0	ug/L	1

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL  
 H = Out of holding time      W = Reported on wet weight basis



## QC Summary

# Inorganic non-metals - MB

Sample ID: VQ52045-001

Matrix: Aqueous

Batch: 52045

Analytical Method: 9060A

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
TOC	ND		1	1.0	0.42	mg/L	04/24/2020 1334

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ52045-002

Matrix: Aqueous

Batch: 52045

Analytical Method: 9060A

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TOC	20	19		1	93	90-110	04/24/2020 1357

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MS

Sample ID: VD22089-001MS

Matrix: Aqueous

Batch: 52045

Analytical Method: 9060A

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TOC	ND	20	18		1	92	70-130	04/24/2020 2107

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MSD

Sample ID: VD22089-001MD

Matrix: Aqueous

Batch: 52045

Analytical Method: 9060A

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
TOC	ND	20	19		1	94	2.0	70-130	20	04/24/2020 2131

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ52061-001

Matrix: Aqueous

Batch: 52061

Analytical Method: 9056A

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Sulfate	ND		1	1.0	0.20	mg/L	04/23/2020 1339

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ52061-002

Matrix: Aqueous

Batch: 52061

Analytical Method: 9056A

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfate	20	20		1	101	80-120	04/23/2020 1419

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ52063-001

Matrix: Aqueous

Batch: 52063

Analytical Method: 9056A

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Chloride	ND		1	1.0	0.20	mg/L	04/23/2020 1339

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ52063-002

Matrix: Aqueous

Batch: 52063

Analytical Method: 9056A

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Chloride	20	20		1	100	80-120	04/23/2020 1419

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ52064-001

Matrix: Aqueous

Batch: 52064

Analytical Method: 9056A

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrate - N	ND		1	0.020	0.0050	mg/L	04/23/2020 1339

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ52064-002

Matrix: Aqueous

Batch: 52064

Analytical Method: 9056A

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Nitrate - N	0.80	0.82		1	102	80-120	04/23/2020 1419

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ52328-001

Matrix: Aqueous

Batch: 52328

Analytical Method: SM 2320B-2011

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Alkalinity	ND		1	20	20	mg/L	04/28/2020 1206

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ52328-002

Matrix: Aqueous

Batch: 52328

Analytical Method: SM 2320B-2011

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Alkalinity	100	100		1	100	90-110	04/28/2020 1224

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - MB

Sample ID: VQ52362-001

Matrix: Aqueous

Batch: 52362

Analytical Method: SM 4500-S2 F-2011

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Sulfide	ND		1	1.0	0.99	mg/L	04/28/2020 2159

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCS

Sample ID: VQ52362-002

Matrix: Aqueous

Batch: 52362

Analytical Method: SM 4500-S2 F-2011

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfide	10	10		1	100	80-120	04/28/2020 2159

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Inorganic non-metals - LCSD

Sample ID: VQ52362-003

Matrix: Aqueous

Batch: 52362

Analytical Method: SM 4500-S2 F-2011

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Sulfide	10	10		1	100	0.00	80-120	20	04/28/2020 2159

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - MB

Sample ID: VQ51929-001

Matrix: Aqueous

Batch: 51929

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
1,4-Dioxane	ND		1	3.0	1.0	ug/L	04/23/2020 0935
Surrogate	Q	% Rec	Acceptance Limit				
1,2-Dichloroethane-d4		104	40-170				

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - LCS

Sample ID: VQ51929-002

Matrix: Aqueous

Batch: 51929

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dioxane	50	53		1	106	70-130	04/23/2020 0829
Surrogate	Q	% Rec	Acceptance Limit				
1,2-Dichloroethane-d4	120	40-170					

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - Duplicate

Sample ID: VD22089-001DU

Matrix: Aqueous

Batch: 51929

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Sample Amount (ug/L)	Result (ug/L)	Q	Dil	% RPD	% RPD Limit	Analysis Date
1,4-Dioxane	ND	ND		1	0.00	20	04/23/2020 1556
Surrogate	Q	% Rec					
1,2-Dichloroethane-d4	106	40-170					

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - MS

Sample ID: VD22089-002MS

Matrix: Aqueous

Batch: 51929

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dioxane	ND	50	46		1	93	70-130	04/23/2020 1620
Surrogate	Q	% Rec	Acceptance Limit					
1,2-Dichloroethane-d4		116	40-170					

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MB

Sample ID: VQ52001-001

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	20	5.0	ug/L	04/23/2020 2330
Benzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Bromodichloromethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Bromoform	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Bromomethane (Methyl bromide)	ND		1	2.0	0.40	ug/L	04/23/2020 2330
2-Butanone (MEK)	ND		1	10	2.0	ug/L	04/23/2020 2330
Carbon disulfide	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Carbon tetrachloride	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Chlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Chloroethane	ND		1	2.0	0.40	ug/L	04/23/2020 2330
Chloroform	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Chloromethane (Methyl chloride)	ND		1	1.0	0.50	ug/L	04/23/2020 2330
Cyclohexane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Dibromochloromethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dibromoethane (EDB)	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,3-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,4-Dichlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Dichlorodifluoromethane	ND		1	2.0	0.60	ug/L	04/23/2020 2330
1,1-Dichloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dichloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,1-Dichloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
cis-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
trans-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,2-Dichloropropane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
cis-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
trans-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Ethylbenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
2-Hexanone	ND		1	10	2.0	ug/L	04/23/2020 2330
Isopropylbenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Methyl acetate	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Methyl tertiary butyl ether (MTBE)	ND		1	1.0	0.40	ug/L	04/23/2020 2330
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	04/23/2020 2330
Methylcyclohexane	ND		1	5.0	0.40	ug/L	04/23/2020 2330
Methylene chloride	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Styrene	ND		1	1.0	0.41	ug/L	04/23/2020 2330
1,1,2,2-Tetrachloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Tetrachloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Toluene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	04/23/2020 2330
1,2,4-Trichlorobenzene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,1,1-Trichloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
1,1,2-Trichloroethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MB

Sample ID: VQ52001-001

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Trichlorofluoromethane	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Vinyl chloride	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Xylenes (total)	ND		1	1.0	0.40	ug/L	04/23/2020 2330
Surrogate	Q	% Rec	Acceptance Limit				
Bromofluorobenzene		96	70-130				
1,2-Dichloroethane-d4		98	70-130				
Toluene-d8		98	70-130				

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - LCS

Sample ID: VQ52001-002

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acetone	100	140		1	135	60-140	04/23/2020 2228
Benzene	50	52		1	103	70-130	04/23/2020 2228
Bromodichloromethane	50	51		1	103	70-130	04/23/2020 2228
Bromoform	50	47		1	93	70-130	04/23/2020 2228
Bromomethane (Methyl bromide)	50	45		1	89	70-130	04/23/2020 2228
2-Butanone (MEK)	100	110		1	113	70-130	04/23/2020 2228
Carbon disulfide	50	53		1	106	70-130	04/23/2020 2228
Carbon tetrachloride	50	46		1	92	70-130	04/23/2020 2228
Chlorobenzene	50	50		1	100	70-130	04/23/2020 2228
Chloroethane	50	45		1	89	70-130	04/23/2020 2228
Chloroform	50	48		1	96	70-130	04/23/2020 2228
Chloromethane (Methyl chloride)	50	41		1	83	60-140	04/23/2020 2228
Cyclohexane	50	52		1	104	70-130	04/23/2020 2228
1,2-Dibromo-3-chloropropane (DBCP)	50	51		1	101	70-130	04/23/2020 2228
Dibromochloromethane	50	52		1	104	70-130	04/23/2020 2228
1,2-Dibromoethane (EDB)	50	50		1	99	70-130	04/23/2020 2228
1,2-Dichlorobenzene	50	51		1	101	70-130	04/23/2020 2228
1,3-Dichlorobenzene	50	51		1	101	70-130	04/23/2020 2228
1,4-Dichlorobenzene	50	50		1	100	70-130	04/23/2020 2228
Dichlorodifluoromethane	50	42		1	85	60-140	04/23/2020 2228
1,1-Dichloroethane	50	49		1	97	70-130	04/23/2020 2228
1,2-Dichloroethane	50	49		1	99	70-130	04/23/2020 2228
1,1-Dichloroethene	50	52		1	104	70-130	04/23/2020 2228
cis-1,2-Dichloroethene	50	49		1	98	70-130	04/23/2020 2228
trans-1,2-Dichloroethene	50	49		1	98	70-130	04/23/2020 2228
1,2-Dichloropropane	50	52		1	103	70-130	04/23/2020 2228
cis-1,3-Dichloropropene	50	53		1	106	70-130	04/23/2020 2228
trans-1,3-Dichloropropene	50	52		1	104	70-130	04/23/2020 2228
Ethylbenzene	50	53		1	106	70-130	04/23/2020 2228
2-Hexanone	100	100		1	101	70-130	04/23/2020 2228
Isopropylbenzene	50	53		1	107	70-130	04/23/2020 2228
Methyl acetate	50	46		1	93	70-130	04/23/2020 2228
Methyl tertiary butyl ether (MTBE)	50	52		1	104	70-130	04/23/2020 2228
4-Methyl-2-pentanone	100	110		1	113	70-130	04/23/2020 2228
Methylcyclohexane	50	51		1	102	70-130	04/23/2020 2228
Methylene chloride	50	47		1	93	70-130	04/23/2020 2228
Styrene	50	52		1	104	70-130	04/23/2020 2228
1,1,2,2-Tetrachloroethane	50	50		1	100	70-130	04/23/2020 2228
Tetrachloroethene	50	53		1	107	70-130	04/23/2020 2228
Toluene	50	52		1	104	70-130	04/23/2020 2228
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	48		1	96	70-130	04/23/2020 2228
1,2,4-Trichlorobenzene	50	51		1	101	70-130	04/23/2020 2228
1,1,1-Trichloroethane	50	51		1	102	70-130	04/23/2020 2228
1,1,2-Trichloroethane	50	50		1	99	70-130	04/23/2020 2228

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - LCS

Sample ID: VQ52001-002

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Trichloroethene	50	53		1	106	70-130	04/23/2020 2228
Trichlorofluoromethane	50	45		1	91	70-130	04/23/2020 2228
Vinyl chloride	50	46		1	92	70-130	04/23/2020 2228
Xylenes (total)	100	100		1	105	70-130	04/23/2020 2228
Surrogate	Q	% Rec			Acceptance Limit		
Bromofluorobenzene		91			70-130		
1,2-Dichloroethane-d4		91			70-130		
Toluene-d8		90			70-130		

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MS

Sample ID: VD22089-004MS

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acetone	ND	500	580	5		115	60-140	04/24/2020 0757
Benzene	ND	250	300	5		122	70-130	04/24/2020 0757
Bromodichloromethane	ND	250	290	5		116	70-130	04/24/2020 0757
Bromoform	ND	250	230	5		93	70-130	04/24/2020 0757
Bromomethane (Methyl bromide)	ND	250	250	5		101	70-130	04/24/2020 0757
2-Butanone (MEK)	ND	500	580	5		116	70-130	04/24/2020 0757
Carbon disulfide	ND	250	290	5		117	70-130	04/24/2020 0757
Carbon tetrachloride	ND	250	280	5		112	70-130	04/24/2020 0757
Chlorobenzene	ND	250	290	5		116	70-130	04/24/2020 0757
Chloroethane	ND	250	260	5		103	70-130	04/24/2020 0757
Chloroform	ND	250	280	5		112	70-130	04/24/2020 0757
Chloromethane (Methyl chloride)	ND	250	230	5		94	60-140	04/24/2020 0757
Cyclohexane	ND	250	320	5		126	70-130	04/24/2020 0757
1,2-Dibromo-3-chloropropane (DBCP)	ND	250	280	5		113	70-130	04/24/2020 0757
Dibromochloromethane	ND	250	280	5		111	70-130	04/24/2020 0757
1,2-Dibromoethane (EDB)	ND	250	280	5		110	70-130	04/24/2020 0757
1,2-Dichlorobenzene	ND	250	280	5		114	70-130	04/24/2020 0757
1,3-Dichlorobenzene	ND	250	280	5		112	70-130	04/24/2020 0757
1,4-Dichlorobenzene	ND	250	280	5		112	70-130	04/24/2020 0757
Dichlorodifluoromethane	ND	250	240	5		96	60-140	04/24/2020 0757
1,1-Dichloroethane	2.5	250	290	5		115	70-130	04/24/2020 0757
1,2-Dichloroethane	ND	250	280	5		113	70-130	04/24/2020 0757
1,1-Dichloroethene	ND	250	310	5		126	70-130	04/24/2020 0757
cis-1,2-Dichloroethene	320	250	610	5		117	70-130	04/24/2020 0757
trans-1,2-Dichloroethene	2.7	250	300	5		117	70-130	04/24/2020 0757
1,2-Dichloropropane	ND	250	300	5		120	70-130	04/24/2020 0757
cis-1,3-Dichloropropene	ND	250	290	5		116	70-130	04/24/2020 0757
trans-1,3-Dichloropropene	ND	250	280	5		111	70-130	04/24/2020 0757
Ethylbenzene	ND	250	310	5		122	70-130	04/24/2020 0757
2-Hexanone	ND	500	560	5		112	70-130	04/24/2020 0757
Isopropylbenzene	ND	250	310	5		125	70-130	04/24/2020 0757
Methyl acetate	ND	250	250	5		101	70-130	04/24/2020 0757
Methyl tertiary butyl ether (MTBE)	ND	250	290	5		117	70-130	04/24/2020 0757
4-Methyl-2-pentanone	ND	500	630	5		127	70-130	04/24/2020 0757
Methylcyclohexane	ND	250	300	5		121	70-130	04/24/2020 0757
Methylene chloride	ND	250	280	5		111	70-130	04/24/2020 0757
Styrene	ND	250	300	5		119	70-130	04/24/2020 0757
1,1,2,2-Tetrachloroethane	ND	250	270	5		110	70-130	04/24/2020 0757
Tetrachloroethene	110	250	420	5		125	70-130	04/24/2020 0757
Toluene	ND	250	300	5		119	70-130	04/24/2020 0757
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	250	290	5		117	70-130	04/24/2020 0757
1,2,4-Trichlorobenzene	ND	250	280	5		111	70-130	04/24/2020 0757
1,1,1-Trichloroethane	ND	250	310	5		125	70-130	04/24/2020 0757
1,1,2-Trichloroethane	ND	250	280	5		110	70-130	04/24/2020 0757

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MS

Sample ID: VD22089-004MS

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Trichloroethene	170	250	490		5	127	70-130	04/24/2020 0757
Trichlorofluoromethane	ND	250	260		5	102	70-130	04/24/2020 0757
Vinyl chloride	5.1	250	270		5	106	70-130	04/24/2020 0757
Xylenes (total)	ND	500	600		5	120	70-130	04/24/2020 0757
Surrogate	Q	% Rec	Acceptance Limit					
Bromofluorobenzene		99	70-130					
1,2-Dichloroethane-d4		100	70-130					
Toluene-d8		99	70-130					

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MSD

Sample ID: VD22089-004MD

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	500	520		5	104	11	60-140	20	04/24/2020 0820
Benzene	ND	250	280		5	112	8.3	70-130	20	04/24/2020 0820
Bromodichloromethane	ND	250	270		5	107	7.9	70-130	20	04/24/2020 0820
Bromoform	ND	250	210		5	85	9.3	70-130	20	04/24/2020 0820
Bromomethane (Methyl bromide)	ND	250	240		5	97	4.0	70-130	20	04/24/2020 0820
2-Butanone (MEK)	ND	500	530		5	107	8.0	70-130	20	04/24/2020 0820
Carbon disulfide	ND	250	260		5	105	11	70-130	20	04/24/2020 0820
Carbon tetrachloride	ND	250	250		5	101	10	70-130	20	04/24/2020 0820
Chlorobenzene	ND	250	260		5	106	8.9	70-130	20	04/24/2020 0820
Chloroethane	ND	250	250		5	98	5.2	70-130	20	04/24/2020 0820
Chloroform	ND	250	260		5	104	7.9	70-130	20	04/24/2020 0820
Chloromethane (Methyl chloride)	ND	250	230		5	92	1.8	60-140	20	04/24/2020 0820
Cyclohexane	ND	250	290		5	115	9.0	70-130	20	04/24/2020 0820
1,2-Dibromo-3-chloropropane (DBCP)	ND	250	260		5	103	9.0	70-130	20	04/24/2020 0820
Dibromochloromethane	ND	250	250		5	102	8.7	70-130	20	04/24/2020 0820
1,2-Dibromoethane (EDB)	ND	250	250		5	102	7.9	70-130	20	04/24/2020 0820
1,2-Dichlorobenzene	ND	250	260		5	103	9.6	70-130	20	04/24/2020 0820
1,3-Dichlorobenzene	ND	250	260		5	105	7.0	70-130	20	04/24/2020 0820
1,4-Dichlorobenzene	ND	250	260		5	104	7.9	70-130	20	04/24/2020 0820
Dichlorodifluoromethane	ND	250	240		5	94	2.2	60-140	20	04/24/2020 0820
1,1-Dichloroethane	2.5	250	270		5	106	8.2	70-130	20	04/24/2020 0820
1,2-Dichloroethane	ND	250	260		5	104	8.2	70-130	20	04/24/2020 0820
1,1-Dichloroethene	ND	250	290		5	116	8.5	70-130	20	04/24/2020 0820
cis-1,2-Dichloroethene	320	250	580		5	106	4.7	70-130	20	04/24/2020 0820
trans-1,2-Dichloroethene	2.7	250	270		5	107	9.0	70-130	20	04/24/2020 0820
1,2-Dichloropropane	ND	250	280		5	111	8.1	70-130	20	04/24/2020 0820
cis-1,3-Dichloropropene	ND	250	270		5	107	8.2	70-130	20	04/24/2020 0820
trans-1,3-Dichloropropene	ND	250	260		5	103	7.9	70-130	20	04/24/2020 0820
Ethylbenzene	ND	250	280		5	111	9.2	70-130	20	04/24/2020 0820
2-Hexanone	ND	500	510		5	102	9.1	70-130	20	04/24/2020 0820
Isopropylbenzene	ND	250	280		5	113	9.6	70-130	20	04/24/2020 0820
Methyl acetate	ND	250	230		5	91	10	70-130	20	04/24/2020 0820
Methyl tertiary butyl ether (MTBE)	ND	250	260		5	106	9.7	70-130	20	04/24/2020 0820
4-Methyl-2-pentanone	ND	500	570		5	114	10	70-130	20	04/24/2020 0820
Methylcyclohexane	ND	250	280		5	110	9.7	70-130	20	04/24/2020 0820
Methylene chloride	ND	250	250		5	100	10	70-130	20	04/24/2020 0820
Styrene	ND	250	270		5	108	9.0	70-130	20	04/24/2020 0820
1,1,2,2-Tetrachloroethane	ND	250	250		5	101	8.3	70-130	20	04/24/2020 0820
Tetrachloroethene	110	250	410		5	120	3.1	70-130	20	04/24/2020 0820
Toluene	ND	250	280		5	111	7.5	70-130	20	04/24/2020 0820
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	250	270		5	107	9.4	70-130	20	04/24/2020 0820
1,2,4-Trichlorobenzene	ND	250	260		5	103	6.9	70-130	20	04/24/2020 0820
1,1,1-Trichloroethane	ND	250	280		5	112	10	70-130	20	04/24/2020 0820
1,1,2-Trichloroethane	ND	250	250		5	102	8.1	70-130	20	04/24/2020 0820

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS - MSD

Sample ID: VD22089-004MD

Matrix: Aqueous

Batch: 52001

Prep Method: 5030B

Analytical Method: 8260D

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	170	250	470		5	118	4.9	70-130	20	04/24/2020 0820
Trichlorofluoromethane	ND	250	250		5	101	1.3	70-130	20	04/24/2020 0820
Vinyl chloride	5.1	250	260		5	103	2.8	70-130	20	04/24/2020 0820
Xylenes (total)	ND	500	550		5	110	8.1	70-130	20	04/24/2020 0820
Surrogate	Q	% Rec	Acceptance Limit							
Bromofluorobenzene		94	70-130							
1,2-Dichloroethane-d4		96	70-130							
Toluene-d8		96	70-130							

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - MB

Sample ID: VQ52204-001

Matrix: Aqueous

Batch: 52204

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
1,4-Dioxane	ND		1	3.0	1.0	ug/L	04/27/2020 1421
Surrogate	Q	% Rec	Acceptance Limit				
1,2-Dichloroethane-d4		108	40-170				

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - LCS

Sample ID: VQ52204-002

Matrix: Aqueous

Batch: 52204

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dioxane	50	49		1	99	70-130	04/27/2020 1307
Surrogate	Q	% Rec				Acceptance Limit	
1,2-Dichloroethane-d4		116				40-170	

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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# Volatile Organic Compounds by GC/MS (SIM) - LCSD

Sample ID: VQ52204-003

Matrix: Aqueous

Batch: 52204

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
1,4-Dioxane	50	46		1	92	7.8	70-130	20	04/27/2020 1332
Surrogate	Q	% Rec	Acceptance Limit						
1,2-Dichloroethane-d4		114	40-170						

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

# Dissolved Gases - MB

Sample ID: VQ52349-001

Matrix: Aqueous

Batch: 52349

Analytical Method: RSK - 175

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ethane	ND		1	10	2.5	ug/L	04/28/2020 1838
Ethene	ND		1	10	2.5	ug/L	04/28/2020 1838
Methane	ND		1	10	2.5	ug/L	04/28/2020 1838
Propane	ND		1	15	5.0	ug/L	04/28/2020 1838

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com



# Dissolved Gases - LCS

Sample ID: VQ52349-002

Matrix: Aqueous

Batch: 52349

Analytical Method: RSK - 175

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Ethane	550	500		1	90	70-130	04/28/2020 1755
Ethene	520	460		1	90	70-130	04/28/2020 1755
Methane	300	260		1	88	70-130	04/28/2020 1755
Propane	810	620		1	77	70-130	04/28/2020 1755

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

# Dissolved Gases - LCSD

Sample ID: VQ52349-003

Matrix: Aqueous

Batch: 52349

Analytical Method: RSK - 175

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Ethane	550	500		1	91	0.83	70-130	30	04/28/2020 1809
Ethene	520	470		1	90	0.78	70-130	30	04/28/2020 1809
Methane	300	260		1	88	0.63	70-130	30	04/28/2020 1809
Propane	810	630		1	78	1.2	70-130	30	04/28/2020 1809

LOQ = Limit of Quantitation

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and  $\geq$  DL

+ = RPD is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the DL

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Chain of Custody  
and  
Miscellaneous Documents



**Chain of Custody Record**

**SHEALY ENVIRONMENTAL SERVICES, INC.**  
 106 Vantage Point Drive • West Columbia, SC 29172  
 Telephone No. 803-791-9700 Fax No. 803-791-9111  
 www.shealylab.com

**Number 107648**

Client: <b>EMERSON CONSULTANTS</b> Address: <b>1880 West Oak Pkwy</b> City: <b>Marietta</b> State: <b>GA</b> Zip Code: <b>30062</b> Project Name: <b>Lennox International</b> Project No.: <b>02-20160378.00</b> Sample ID / Description: (Containers for each sample may be combined on one tab.)		Report to Contact: <b>Cecil Northington</b> Sampler's Signature: <i>[Signature]</i> Printed Name: <b>Tiffany Moser</b>		Telephone No. / E-mail: <b>770-913-2100 cnorthington@emerson.com</b> Quote No.: Analysis (Attach tab if more space is needed)	
Matrix: Aerosols <input type="checkbox"/> Gases <input type="checkbox"/> Liquids <input type="checkbox"/> Particulates <input type="checkbox"/> Solids <input type="checkbox"/> Vapors <input type="checkbox"/>		No. of Containers by Preservative Type: HCL <input type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> H3PO4 <input type="checkbox"/> None <input type="checkbox"/>		Page: of LID: <b>VD22089</b> Remarks:	
Turn Around Time Required (Prior lab approval required for expedited TAT.) <input type="checkbox"/> Standard <input type="checkbox"/> Rush (Specify)	Sample Disposal: <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Recycle or Lab	Possible Hazard Identification: <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Poison <input type="checkbox"/> Irritant <input type="checkbox"/> Skin Irritant <input type="checkbox"/> L1 (toxic)			
1. Relinquished by: <i>[Signature]</i> 4/22/20 10:45 2. Relinquished by: <i>[Signature]</i> 4/22/20 11:45 3. Relinquished by: 4. Relinquished by: Note: All samples are retained for four weeks from receipt unless other arrangements are made.	1. Received by: 2. Received by: 3. Received by: 4. Laboratory received by: <i>[Signature]</i>	Date: 4/22/20 Date: 4/22/20 Date: Date:	Time: 10:45 Time: 11:45 Time: Time:	Date: Date: Date: Date: 4/22/20	Time: Time: Time: Time: 16:55

# PACE ANALYTICAL SERVICES, LLC

Shealy Environmental Services, Inc.  
Document Number: ME0018C-14

Page 1 of 1  
Effective Date: 8/2/2018

## Sample Receipt Checklist (SRC)

Client: Earthcon Cooler Inspected by/date: BMG / 04/22/2020 Lot #: VD22089

Means of receipt: <input type="checkbox"/> SESI <input checked="" type="checkbox"/> Client <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Other: _____	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1. Were custody seals present on the cooler?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	2. If custody seals were present, were they intact and unbroken?
pH Strip ID: <u>20-0209</u> Chlorine Strip ID: <u>20-0279</u> Tested by: <u>BMG</u>	
Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: <u>NA</u> <u>5.3 / 5.3 °C NA / NA °C NA / NA °C NA / NA °C</u>	
Method: <input checked="" type="checkbox"/> Temperature Blank <input type="checkbox"/> Against Bottles IR Gun ID: <u>6</u> IR Gun Correction Factor: <u>0</u> °C	
Method of coolant: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Ice Packs <input type="checkbox"/> Dry Ice <input type="checkbox"/> None	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	4. Is the commercial courier's packing slip attached to this form?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. Were proper custody procedures (relinquished/received) followed?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. Were sample IDs listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7. Were sample IDs listed on all sample containers?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8. Was collection date & time listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9. Was collection date & time listed on all sample containers?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10. Did all container label information (ID, date, time) agree with the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. Were tests to be performed listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	13. Was adequate sample volume available?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼" or 6mm in diameter) in any of the VOA vials?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	19. Were all applicable NH <sub>3</sub> /TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	21. Was the quote number listed on the container label? If yes, Quote # <u>NA</u>
<b>Sample Preservation</b> (Must be completed for any sample(s) incorrectly preserved or with headspace.)	
Sample(s) <u>NA</u> were received incorrectly preserved and were adjusted accordingly in sample receiving with <u>NA</u> mL of circle one: H <sub>2</sub> SO <sub>4</sub> , HNO <sub>3</sub> , HCl, NaOH using SR # <u>NA</u>	
Time of preservation <u>NA</u> . If more than one preservative is needed, please note in the comments below.	
Sample(s) <u>NA</u> were received with bubbles >6 mm in diameter.	
Sample(s) <u>NA</u> were received with TRC > 0.5 mg/L (If #19 is no) and were adjusted accordingly in sample receiving with sodium thiosulfate (Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ) with Shealy ID: <u>NA</u>	
SR barcode labels applied by: <u>BMG</u> Date: <u>04/22/2020</u>	
Comments: _____ _____ _____ _____	

## **Appendix E**

### **Groundwater Historical Data Summary**



















## **Appendix F**

### **Ricker Method® Plume Stability Analysis Input Data and Metrics Summary**

**Ricker Method® Plume Stability Analysis Input Data**



## PCE Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002	Mar. 2003
MW-1	79	<2.0	16	5.6	4.6	18	4.4
MW-2	6.9	8	NS (7.4)	7.1	7.2	8.8	4
MW-3	4,700	<2.0	NS (198)	297	125	147	709
MW-4	2.4	<2.0	NS (2.6)	NS (2.8)	3.1	1.2	<2.0
MW-5	NA	2,230	NS (1,327)	872	2,470	1,850	1,120
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	7,860	5.1	16,400	11,700	1,280
MW-8	NA	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0	3.3	NS (2.7)
MW-10	NA	NA	NA	8.6	8.7	NS (13)	17
MW-11	NA	NA	NA	NA	<2.0	NS (2.0)	NS (2.0)
MW-12	NA	NA	NA	NA	<2.0	<2.0	<2.0
MW-13	NA	NA	NA	NA	NA	NA	NA
MW-14	NA	NA	NA	NA	NA	NA	NA
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## PCE Upper Shallow Input Data

Well ID	Sep. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006
MW-1	<2.0	6	<2.0	18	0.94	<1.0	<1.0
MW-2	3.6	4	4.4	4.2	2.7	1.3	NS (1.3)
MW-3	41	273	251	455	763	108	187
MW-4	<2.0	1.7	1.8	<5.0 (3.5)	5.3	<1.0	<1.0
MW-5	1,570	1,330	2,710	800	253	336	275
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NS (7,273)	13,200	12,300	6,440	6,560	6,060	2,900
MW-8	NA	<2.0	<2.0	51	<5.0	1.9	<1.0
MW-9	<2.0	<2.0	<2.0	<5.0 (1.7)	1.5	<1.0	<1.0
MW-10	4.4	11	6	2.6	1.5	2.7	4.1
MW-11	<2.0	<2.0	<2.0	<5.0 (1.5)	1.1	<1.0	NS (1.0)
MW-12	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-13	<2.0	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)
MW-14	<2.0	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

## PCE Upper Shallow Input Data

Well ID	Mar. 2007	Sep. 2007	Mar. 2008	Sep. 2008	Mar. 2009	Sep. 2009	Mar. 2010
MW-1	8.6	<5.0	<20 (3.0)	<1.0	<2.0	<20 (1.5)	<1.0
MW-2	NS (1.3)	NS (1.3)	NS (1.3)	NS (1.3)	NS (1.3)	NS (1.3)	1.3
MW-3	35	<100	290	760	1,500	320	290
MW-4	2.1	2.4	<1.0	11	<1.0	4	<1.0
MW-5	326	<20	290	<1.0	<10 (1.0)	<10 (1.0)	<1.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	3,530	<100	41	<1.0	<10 (1.0)	<10 (1.0)	<1.0
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	4.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-10	7.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

## PCE Upper Shallow Input Data

Well ID	Sep. 2010	Sep. 2012	Sep. 2014	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018
MW-1	<1.0	<100 (1.0)	<1.0	<20 (3.1)	<10 (3.7)	<5.0 (4.0)	<20 (4.5)
MW-2	<1.0	<5.0 (1.0)	<1.0	4.8	<1.0	<1.0	<1.0
MW-3	380	<2,500 (191)	2.4	<200 (2.4)	<100 (2.4)	<200 (2.4)	<500 (2.4)
MW-4	3.1	<5.0 (3.5)	4	0.67	2.4	4.6	2
MW-5	<1.0	70	NS (93)	120	110	85	130
MW-6R	NA	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	<1.0	<100 (1.0)	<1.0	<5.0 (2.0)	<20 (2.3)	<20 (2.4)	<50 (2.7)
MW-8	<1.0	<5.0 (1.0)	<1.0	NS (1.0)	<1.0	<1.0	<1.0
MW-9	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	NA	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	NA	NA	NA	NA	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

## PCE Upper Shallow Input Data

Well ID	Mar. 2019	Oct. 2019	Apr. 2020
MW-1	4.9	<20 (4.9)	<10 (4.9)
MW-2	<1.0	<1.0	<1.0
MW-3	<200 (2.4)	<200 (2.4)	<500 (2.4)
MW-4	2.4	3.3	3.2
MW-5	130	19	110
MW-6R	<1.0	<1.0	<1.0
MW-7	<5.0 (2.9)	3.1	<10 (3.1)
MW-8	<1.0	<1.0	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0
MW-11	<1.0	NS (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	<1.0	<1.0
MW-15	<1.0	<1.0	<1.0
MW-16	<1.0	<1.0	<1.0
MW-17	NA	<1.0	<1.0

**Notes:**


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## TCE Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002	Mar. 2003
MW-1	60	29	24	8.9	8	14	5
MW-2	<2.0	2	NS (2.0)	<2.0	<2.0	<2.0	<2.0
MW-3	60	<2.0	NS (58)	87	2,180	1,610	3,870
MW-4	7.4	<2.0	NS (2.1)	NS (2.2)	2.2	<2.0	<2.0
MW-5	NA	1,970	NS (1,451)	1,190	3,380	2,360	1,560
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	4,150	9.6	3,690	7,700	1,030
MW-8	NA	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0	2.8	NS (2.4)
MW-10	NA	NA	NA	3.6	3.5	1.2	3.3
MW-11	NA	NA	NA	NA	<2.0	NS (2.0)	NS (2.0)
MW-12	NA	NA	NA	NA	<2.0	<2.0	<2.0
MW-13	NA	NA	NA	NA	NA	NA	NA
MW-14	NA	NA	NA	NA	NA	NA	NA
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## TCE Upper Shallow Input Data

Well ID	Sep. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006
MW-1	<2.0	4.2	1.5	9.1	2.4	<1.0	1.5
MW-2	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)
MW-3	51	185	197	181	521	185	77
MW-4	<2.0	1.6	<2.0	<5.0 (2.5)	3	<1.0	<1.0
MW-5	1,630	1,640	2,540	1,870	1,530	878	722
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NS (3,152)	5,250	5,900	3,090	5,390	4,640	3,220
MW-8	NA	<2.0	<2.0	40	<5.0	<1.0	<1.0
MW-9	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-10	<2.0	2.4	1.4	1	1.4	<1.0	1.1
MW-11	<2.0	<2.0	<2.0	<5.0 (1.2)	0.44	<1.0	NS (1.0)
MW-12	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-13	<2.0	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)
MW-14	<2.0	2.6	NS (2.3)	2.1	2.2	1.7	NS (1.6)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## TCE Upper Shallow Input Data

Well ID	Mar. 2007	Sep. 2007	Mar. 2008	Sep. 2008	Mar. 2009	Sep. 2009	Mar. 2010
MW-1	14	<5.0	<20 (3.0)	<1.0	<2.0	<20 (1.5)	<1.0
MW-2	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0
MW-3	484	2,400	1,000	2,900	5,600	1,400	1,000
MW-4	4.4	2.2	<1.0	19	<1.0	5	<1.0
MW-5	690	<20	560	<1.0	<10 (1.0)	<10 (1.0)	<1.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	5,850	1,300	250	38	<10	<10 (5.5)	<1.0
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-10	24	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.5)	NS (1.4)	NS (1.3)	NS (1.2)	NS (1.1)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well



## TCE Upper Shallow Input Data

Well ID	Sep. 2010	Sep. 2012	Sep. 2014	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018
MW-1	<1.0	<100 (1.0)	<1.0	<20 (3.9)	<10 (4.6)	<5.0	<20 (5.8)
MW-2	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-3	1,600	<2,500 (808)	18	<200 (18)	<100 (18)	<200 (18)	<500 (18)
MW-4	3.3	<5.0 (4.1)	4.9	1.3	5.3	5.9	4.7
MW-5	<1.0	244	NS (211)	170	190	230	220
MW-6R	NA	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	<1.0	<100 (1.0)	<1.0	<5.0 (3.6)	<20 (4.3)	<20 (4.7)	<50 (5.3)
MW-8	<1.0	<5.0 (1.0)	<1.0	NS (1.0)	<1.0	<1.0	<1.0
MW-9	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	NA	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	NA	NA	NA	NA	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

## TCE Upper Shallow Input Data

Well ID	Mar. 2019	Oct. 2019	Apr. 2020
MW-1	6.3	<20 (6.3)	<10 (6.3)
MW-2	<1.0	<1.0	<1.0
MW-3	<200 (18)	<200 (18)	<500 (18)
MW-4	4.6	5.3	4.5
MW-5	250	160	170
MW-6R	<1.0	<1.0	<1.0
MW-7	<5.0	6.4	<10 (6.4)
MW-8	<1.0	<1.0	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0
MW-11	<1.0	NS (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	<1.0	<1.0
MW-15	<1.0	<1.0	<1.0
MW-16	<1.0	<1.0	<1.0
MW-17	NA	<1.0	<1.0

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

	Interpolated between two sampling events.
	Well not installed. Extrapolated from a sampling event.
	Non-Sampled Well

## cis-1,2-DCE Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002	Mar. 2003	Sep. 2003
MW-1	18,000	17,600	10,600	8,580	5,090	6,550	8,820	6,130
MW-2	<2.0	<2.0	NS (2.0)	<2.0	<2.0	<2.0	<2.0	<2.0
MW-3	660	2,540	NS (1,895)	1,570	6,800	20,600	17,700	2,760
MW-4	4.5	<2.0	NS (3.2)	NS (3.7)	4.3	<2.0	<2.0	1.2
MW-5	NA	<2.0	NS (424)	636	1,280	1,290	978	1,110
MW-6R	NA	NA	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	5,880	10,900	4,140	8,480	2,480	NS (4,581)
MW-8	NA	NA	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0	<2.0	NS (2.0)	<2.0
MW-10	NA	NA	NA	2.3	5.5	4.3	1.7	3.4
MW-11	NA	NA	NA	NA	<2.0	NS (2.0)	NS (2.0)	<2.0
MW-12	NA	NA	NA	NA	<2.0	<2.0	<2.0	<2.0
MW-13	NA	NA	NA	NA	NA	NA	NA	37
MW-14	NA	NA	NA	NA	NA	NA	NA	<2.0
MW-15	NA	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.



Interpolated between two sampling events.



Well not installed. Extrapolated from a sampling event.



Non-Sampled Well

## cis-1,2-DCE Upper Shallow Input Data

Well ID	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007
MW-1	12,300	5,200	8,200	12,400	5,280	7,530	3,120	700
MW-2	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)	NS (1.0)	NS (1.0)
MW-3	1,600	1,920	2,060	3,500	2,840	2,450	13,100	29,000
MW-4	2.3	<2.0	<5.0 (2.2)	2.5	<1.0	1.2	10	2.7
MW-5	1,120	2,000	1,860	3,010	2,850	2,620	3,060	3,500
MW-6R	NA	NA	NA	NA	NA	NA	NA	NA
MW-7	6,660	6,500	2,690	5,290	2,930	2,480	5,810	21,000
MW-8	<2.0	<2.0	21	<5.0	<1.0	<1.0	12	<1.0
MW-9	<2.0	<2.0	<5.0 (1.1)	0.28	<1.0	<1.0	7.7	<1.0
MW-10	1.5	2	1	1.9	<1.0	1.3	20	<1.0
MW-11	<2.0	<2.0	<5.0 (1.2)	0.32	<1.0	NS (1.0)	NS (1.0)	NS (1.0)
MW-12	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	NS (1.0)	NS (1.0)
MW-13	12	NS (7.4)	3	2.7	1.7	NS	NS	NS
MW-14	<2.0	NS (1.5)	<5.0 (1.0)	0.54	<1.0	NS (1.0)	NS (1.0)	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

	Interpolated between two sampling events.
	Well not installed. Extrapolated from a sampling event.
	Non-Sampled Well

## cis-1,2-DCE Upper Shallow Input Data

Well ID	Mar. 2008	Sep. 2008	Mar. 2009	Sep. 2009	Mar. 2010	Sep. 2010	Sep. 2012	Sep. 2014
MW-1	4,800	2,200	2,800	6,500	5,300	1,200	1,650	734
MW-2	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-3	21,000	46,000	42,000	45,000	45,000	41,000	46,100	9,460
MW-4	<1.0	11	<1.0	5.8	<1.0	2.6	<5.0 (3.7)	4.8
MW-5	2,200	2,800	2,400	2,000	2,100	1,600	750	NS (773)
MW-6R	NA	NA	NA	NA	NA	NA	<5.0 (1.0)	<1.0
MW-7	3,900	7,300	550	340	870	850	1,890	200
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-11	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)	NS (1.0)	<5.0 (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS	NS	NS	NS	NS	NS	NS	NS
MW-14	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)	NS (1.0)	<5.0 (1.0)	<1.0
MW-15	NA	NA	NA	NA	NA	NA	<5.0 (1.0)	<1.0
MW-16	NA	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## cis-1,2-DCE Upper Shallow Input Data

Well ID	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018	Mar. 2019	Oct. 2019	Apr. 2020
MW-1	1,800	1,100	420	890	1,400	1,000	670
MW-2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-3	11,000	7,300	16,000	24,000	15,000	24,000	30,000
MW-4	1.1	6.8	6.8	5.9	4.1	7.2	6.6
MW-5	800	490	280	300	320	450	320
MW-6R	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	640	1,100	1,700	3,100	440	810	560
MW-8	NS (1.0)	<1.0	<1.0	<1.0	<1.0	2.5	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	0.97	<1.0
MW-11	<1.0	<1.0	<1.0	<1.0	<1.0	NS (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS	NS	NS	NS	NS	NS	NS
MW-14	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	<1.0	<1.0

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.



Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

## trans-1,2-DCE Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002	Mar. 2003
MW-1	60	361	78	54	24	80	48
MW-2	<2.0	<2.0	NS (2.0)	<2.0	<2.0	<2.0	<2.0
MW-3	14	40	NS (15)	<2.0	123	240	190
MW-4	<2.0	<2.0	NS (2.0)	NS (2.0)	<2.0	<2.0	<2.0
MW-5	NA	6	NS (7.1)	7.6	22	21	24
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	69	54	46	103	62
MW-8	NA	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0	<2.0	NS (2.0)
MW-10	NA	NA	NA	<2.0	<2.0	<2.0	<2.0
MW-11	NA	NA	NA	NA	<2.0	NS (2.0)	NS (2.0)
MW-12	NA	NA	NA	NA	<2.0	<2.0	<2.0
MW-13	NA	NA	NA	NA	NA	NA	NA
MW-14	NA	NA	NA	NA	NA	NA	NA
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.



Interpolated between two sampling events.



Well not installed. Extrapolated from a sampling event.



Non-Sampled Well

## trans-1,2-DCE Upper Shallow Input Data

Well ID	Sep. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006
MW-1	15	153	49	58	133	<1.0	32
MW-2	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)
MW-3	88	53	35	31	19	35	36
MW-4	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-5	16	14	21	26	26	17	20
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NS (80)	97	150	35	44	<1.0	16
MW-8	NA	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-9	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-10	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-11	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)
MW-12	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-13	<2.0	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)
MW-14	<2.0	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well



## trans-1,2-DCE Upper Shallow Input Data

Well ID	Mar. 2007	Sep. 2007	Mar. 2008	Sep. 2008	Mar. 2009	Sep. 2009	Mar. 2010
MW-1	14	<5.0	22	<1.0	15	28	21
MW-2	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0
MW-3	140	220	170	300	370	320	270
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	20	24	16	18	15	14	10
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	24	<100 (16)	<20 (8.7)	<1.0	<10 (1.0)	<10 (1.0)	<1.0
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## trans-1,2-DCE Upper Shallow Input Data

Well ID	Sep. 2010	Sep. 2012	Sep. 2014	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018
MW-1	5.6	<100 (5.0)	4.3	<20 (9.6)	11	2	<20 (3.6)
MW-2	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-3	320	<2,500 (249)	179	85	53	170	270
MW-4	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	9.2	<25 (9.2)	NS (9.2)	9.2	6.6	2.6	3.4
MW-6R	NA	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	<1.0	<100 (1.3)	1.6	<5.0 (3.8)	<20 (4.4)	<20 (4.8)	<50 (5.4)
MW-8	<1.0	<5.0 (1.0)	<1.0	NS (1.0)	<1.0	<1.0	<1.0
MW-9	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	NA	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	NA	NA	NA	NA	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## trans-1,2-DCE Upper Shallow Input Data

Well ID	Mar. 2019	Oct. 2019	Apr. 2020
MW-1	4.8	<20 (4.8)	<10 (4.8)
MW-2	<1.0	<1.0	<1.0
MW-3	120	250	260
MW-4	<1.0	<1.0	<1.0
MW-5	2.9	3.9	2.7
MW-6R	<1.0	<1.0	<1.0
MW-7	<5.0	6.3	4.2
MW-8	<1.0	<1.0	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0
MW-11	<1.0	NS (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	<1.0	<1.0
MW-15	<1.0	<1.0	<1.0
MW-16	<1.0	<1.0	<1.0
MW-17	NA	<1.0	<1.0

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

	Interpolated between two sampling events.
	Well not installed. Extrapolated from a sampling event.
	Non-Sampled Well

## 1,1-DCE Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002
MW-1	26	68	27	<2.0	12	19
MW-2	<2.0	<2.0	NS (2.0)	<2.0	<2.0	<2.0
MW-3	40	247	NS (194)	167	1,220	2,560
MW-4	<2.0	<2.0	NS (2.0)	NS (2.0)	<2.0	<2.0
MW-5	NA	2.9	NS (3.3)	3.5	5	5.5
MW-6R	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	2.9	24	12	22
MW-8	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0	<2.0
MW-10	NA	NA	NA	<2.0	<2.0	<2.0
MW-11	NA	NA	NA	NA	<2.0	NS (2.0)
MW-12	NA	NA	NA	NA	<2.0	<2.0
MW-13	NA	NA	NA	NA	NA	NA
MW-14	NA	NA	NA	NA	NA	NA
MW-15	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

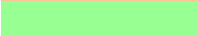
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,1-DCE Upper Shallow Input Data

Well ID	Mar. 2003	Sep. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005
MW-1	20	1.3	25	18	16	18
MW-2	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0
MW-3	2,740	176	480	270	189	186
MW-4	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0
MW-5	<2.0	2.6	4.4	5.1	6	7.9
MW-6R	NA	NA	NA	NA	NA	NA
MW-7	5.1	NS (6.5)	7.9	12	7.5	13
MW-8	NA	NA	<2.0	<2.0	<5.0	<5.0
MW-9	NS (2.0)	<2.0	<2.0	<2.0	<5.0	<5.0
MW-10	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0
MW-11	NS (2.0)	<2.0	<2.0	<2.0	<5.0	<5.0
MW-12	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0
MW-13	NA	<2.0	<2.0	NS (3.5)	<5.0	<5.0
MW-14	NA	<2.0	<2.0	NS (3.5)	<5.0	<5.0
MW-15	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

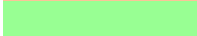
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,1-DCE Upper Shallow Input Data

Well ID	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Mar. 2008	Sep. 2008
MW-1	<1.0	18	14	<5.0	<20 (3.0)	<1.0
MW-2	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-3	195	164	954	2,300	1,700	3,000
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	<1.0	8.2	<10 (6.4)	<20 (4.6)	<10 (2.8)	<1.0
MW-6R	NA	NA	NA	NA	NA	NA
MW-7	<1.0	8.6	15	<100 (10)	<20 (5.8)	<1.0
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-12	<1.0	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

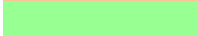
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,1-DCE Upper Shallow Input Data

Well ID	Mar. 2009	Sep. 2009	Mar. 2010	Sep. 2010	Sep. 2012	Sep. 2014
MW-1	5.3	<20 (3.1)	<1.0	2	<100 (1.9)	1.8
MW-2	NS (1.0)	NS (1.0)	<1.0	<1.0	<5.0	<1.0
MW-3	3,800	2,500	2,400	2,100	<2,500 (1,357)	616
MW-4	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0
MW-5	<10 (2.6)	<10 (4.3)	5.9	<1.0	<25 (2.2)	NS (3.5)
MW-6R	NA	NA	NA	NA	<5.0	<1.0
MW-7	<10 (1.0)	<10 (1.0)	<1.0	<1.0	<100 (1.0)	<1.0
MW-8	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0
MW-9	<1.0	<1.0	<1.0	<1.0	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0
MW-11	NS (1.0)	<1.0	NS (1.7)	NS (2.3)	<5.0	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	<1.0	NS (1.7)	NS (2.3)	<5.0	<1.0
MW-15	NA	NA	NA	NA	<5.0	<1.0
MW-16	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

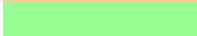
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,1-DCE Upper Shallow Input Data

Well ID	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018	Mar. 2019	Oct. 2019
MW-1	<20 (1.2)	<10 (1.1)	<5.0 (1.0)	<20 (1.0)	<10 (1.0)	<20 (1.0)
MW-2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-3	420	330	690	950	540	840
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	<5.0	<10 (6.0)	6.6	1.7	<5.0	<5.0
MW-6R	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	<5.0	<20 (5.0)	<20 (5.0)	<50 (5.0)	<5.0	<5.0
MW-8	NS (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	<1.0	<1.0	<1.0	<1.0	<1.0	NS (1.0)
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	NA	<1.0	<1.0	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	<1.0

**Notes:**

All concentrations in µg/l

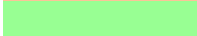
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well



## 1,1-DCE Upper Shallow Input Data

Well ID	Apr. 2020
MW-1	<10 (1.0)
MW-2	<1.0
MW-3	990
MW-4	<1.0
MW-5	<5.0
MW-6R	<1.0
MW-7	<10 (5.0)
MW-8	<1.0
MW-9	NS (1.0)
MW-10	<1.0
MW-11	<1.0
MW-12	NS (1.0)
MW-13	NS (1.0)
MW-14	<1.0
MW-15	<1.0
MW-16	<1.0
MW-17	<1.0

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.



Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

## Vinyl Chloride Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002
MW-1	49	<2.0	105	76	29	65
MW-2	<2.0 (1.0)	<2.0 (1.0)	NS (1.0)	<2.0 (1.0)	<2.0 (1.0)	<2.0 (1.0)
MW-3	63	325	NS (110)	<2.0	1,420	1,260
MW-4	<2.0 (1.0)	<2.0 (1.0)	NS (1.0)	NS (1.0)	<2.0 (1.0)	<2.0 (1.0)
MW-5	NA	<2.0	NS (6.7)	9.1	8	7.5
MW-6R	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	190	69	240	294
MW-8	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0 (1.0)	<2.0 (1.0)
MW-10	NA	NA	NA	<2.0 (1.0)	<2.0 (1.0)	<2.0 (1.0)
MW-11	NA	NA	NA	NA	<2.0 (1.0)	NS (1.0)
MW-12	NA	NA	NA	NA	<2.0 (1.0)	<2.0 (1.0)
MW-13	NA	NA	NA	NA	NA	NA
MW-14	NA	NA	NA	NA	NA	NA
MW-15	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

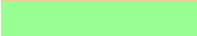
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Vinyl Chloride Upper Shallow Input Data

Well ID	Mar. 2003	Sep. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005
MW-1	110	5.8	120	77	86	112
MW-2	<2.0 (1.0)	<2.0 (1.0)	<2.0 (1.0)	<2.0 (1.0)	<5.0 (1.0)	<5.0 (1.0)
MW-3	1,810	136	195	154	99	63
MW-4	<2.0 (1.0)	<2.0 (1.0)	<2.0 (1.0)	<2.0 (1.0)	<5.0 (1.0)	<5.0 (1.0)
MW-5	1.2	2.6	7.9	7.3	7	7
MW-6R	NA	NA	NA	NA	NA	NA
MW-7	103	NS (373)	641	137	104	156
MW-8	NA	NA	<2.0 (1.0)	<2.0 (1.0)	<5.0 (1.0)	<5.0 (1.0)
MW-9	NS (1.0)	<2.0 (1.0)	<2.0 (1.0)	<2.0 (1.0)	<5.0 (1.0)	<5.0 (1.0)
MW-10	<2.0 (1.0)	<2.0 (1.0)	<2.0 (1.0)	<2.0 (1.0)	<5.0 (1.0)	<5.0 (1.0)
MW-11	NS (1.0)	<2.0 (1.0)	<2.0 (1.0)	<2.0 (1.0)	<5.0 (1.0)	<5.0 (1.0)
MW-12	<2.0 (1.0)	<2.0 (1.0)	<2.0 (1.0)	<2.0 (1.0)	<5.0 (1.0)	<5.0 (1.0)
MW-13	NA	<2.0 (1.0)	<2.0 (1.0)	NS (1.0)	<5.0 (1.0)	<5.0 (1.0)
MW-14	NA	<2.0 (1.0)	<2.0 (1.0)	NS (1.0)	<5.0 (1.0)	<5.0 (1.0)
MW-15	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Vinyl Chloride Upper Shallow Input Data

Well ID	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Mar. 2008	Sep. 2008
MW-1	75	104	59	19	86	32
MW-2	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-3	154	259	817	1,400	1,100	1,600
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	7.3	9.3	12	79	43	160
MW-6R	NA	NA	NA	NA	NA	NA
MW-7	120	81	132	350	170	400
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-12	<1.0	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

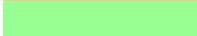
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Vinyl Chloride Upper Shallow Input Data

Well ID	Mar. 2009	Sep. 2009	Mar. 2010	Sep. 2010	Sep. 2012	Sep. 2014
MW-1	98	150	170	28	<100 (25)	22
MW-2	NS (1.0)	NS (1.0)	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-3	1,700	710	1,700	2,200	<2,500 (1,454)	709
MW-4	<1.0	<1.0	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-5	<10	480	9.2	81	<25	NS (17)
MW-6R	NA	NA	NA	NA	<5.0 (1.0)	<1.0
MW-7	340	450	730	140	472	319
MW-8	<1.0	<1.0	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-9	<1.0	<1.0	<1.0	<1.0	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-11	NS (1.0)	<1.0	NS (1.0)	NS (1.0)	<5.0 (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	<1.0	NS (1.0)	NS (1.0)	<5.0 (1.0)	<1.0
MW-15	NA	NA	NA	NA	<5.0 (1.0)	<1.0
MW-16	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

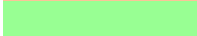
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Vinyl Chloride Upper Shallow Input Data

Well ID	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018	Mar. 2019	Oct. 2019
MW-1	67	58	8.4	56	33	38
MW-2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-3	700	520	1,200	2,000	900	1,800
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	6.6	6.7	3.4	5.7	3.5	9.1
MW-6R	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	200	710	460	510	200	120
MW-8	NS (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	<1.0	<1.0	<1.0	<1.0	<1.0	NS (1.0)
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	NA	<1.0	<1.0	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	<1.0

**Notes:**


All concentrations in µg/l

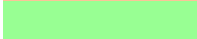
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Vinyl Chloride Upper Shallow Input Data

Well ID	Apr. 2019
MW-1	24
MW-2	<1.0
MW-3	1,700
MW-4	<1.0
MW-5	5.1
MW-6R	<1.0
MW-7	110
MW-8	<1.0
MW-9	NS (1.0)
MW-10	<1.0
MW-11	<1.0
MW-12	NS (1.0)
MW-13	NS (1.0)
MW-14	<1.0
MW-15	<1.0
MW-16	<1.0
MW-17	<1.0

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.



Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

## 1,1,2-TCA Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002	Mar. 2003	Sep. 2003
MW-1	<2.0	<2.0	<2.0	<2.0	<2.0	12	<2.0	<2.0
MW-2	<2.0	<2.0	NS (2.0)	<2.0	<2.0	<2.0	<2.0	<2.0
MW-3	20	<2.0	NS (53)	78	727	231	1,670	105
MW-4	<2.0	<2.0	NS (2.0)	NS (2.0)	<2.0	<2.0	<2.0	<2.0
MW-5	NA	<2.0	NS (2.4)	2.5	1.2	<2.0	<2.0	1.6
MW-6R	NA	NA	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	<2.0	<2.0	7.7	12	<2.0	NS (2.0)
MW-8	NA	NA	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0	<2.0	NS (2.0)	<2.0
MW-10	NA	NA	NA	<2.0	<2.0	<2.0	<2.0	<2.0
MW-11	NA	NA	NA	NA	<2.0	NS (2.0)	NS (2.0)	<2.0
MW-12	NA	NA	NA	NA	<2.0	<2.0	<2.0	<2.0
MW-13	NA	NA	NA	NA	NA	NA	NA	<2.0
MW-14	NA	NA	NA	NA	NA	NA	NA	<2.0
MW-15	NA	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

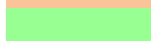
<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.



Interpolated between two sampling events.



Well not installed. Extrapolated from a sampling event.



Non-Sampled Well



## 1,1,2-TCA Upper Shallow Input Data

Well ID	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007
MW-1	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	<10 (1.0)	<5.0 (1.0)
MW-2	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)	NS (1.0)	NS (1.0)
MW-3	144	<2.0	90	<5.0	73	22	407	1,200
MW-4	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	<1.0	<1.0
MW-5	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	<10 (1.0)	<20 (1.0)
MW-6R	NA	NA	NA	NA	NA	NA	NA	NA
MW-7	<2.0	<2.0	3.9	<5.0 (2.4)	<1.0	3.2	4.9	<100 (3.6)
MW-8	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	<1.0	<1.0
MW-9	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	<1.0	<1.0
MW-10	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	<1.0	<1.0
MW-11	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)	NS (1.0)	NS (1.0)
MW-12	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	NS (1.0)	NS (1.0)
MW-13	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)	NS (1.0)	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l


NA: Well not installed or abandoned.


<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,1,2-TCA Upper Shallow Input Data

Well ID	Mar. 2008	Sep. 2008	Mar. 2009	Sep. 2009	Mar. 2010	Sep. 2010	Sep. 2012	Sep. 2014
MW-1	<20 (1.0)	<1.0	<2.0	<20 (1.5)	<1.0	<1.0	<100 (1.0)	<1.0
MW-2	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-3	690	3,200	4,200	3,800	3,100	2,700	2,860	88
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-5	<10 (1.0)	<1.0	<10 (1.0)	<10 (1.0)	<1.0	<1.0	<25 (1.3)	NS (1.6)
MW-6R	NA	NA	NA	NA	NA	NA	<5.0 (1.0)	<1.0
MW-7	<20 (2.3)	<1.0	<10 (1.0)	<10 (1.0)	<1.0	<1.0	<100 (1.0)	<1.0
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-11	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)	NS (1.0)	<5.0 (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)	NS (1.0)	<5.0 (1.0)	<1.0
MW-15	NA	NA	NA	NA	NA	NA	<5.0 (1.0)	<1.0
MW-16	NA	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

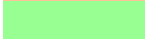
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,1,2-TCA Upper Shallow Input Data

Well ID	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018	Mar. 2019	Oct. 2019	Apr. 2020
MW-1	<20 (1.0)	<10 (1.0)	<5.0 (1.0)	<20 (1.0)	<10 (1.0)	<20 (1.0)	<10 (1.0)
MW-2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-3	<200 (88)	<100 (88)	<200 (88)	<500 (88)	<200 (88)	<200 (88)	<500 (88)
MW-4	<1.0	0.84	0.99	0.67	0.67	0.81	0.61
MW-5	<5.0 (1.9)	<10 (2.0)	2.1	1	<5.0 (1.0)	<5.0 (1.0)	<5.0 (1.0)
MW-6R	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	<5.0 (1.0)	<20 (1.0)	<20 (1.0)	<50 (1.0)	<5.0 (1.0)	<5.0 (1.0)	<10 (1.0)
MW-8	NS (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	<1.0	<1.0	<1.0	<1.0	<1.0	NS (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	<1.0	<1.0

**Notes:**


All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,1,1-TCA Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002	Mar. 2003
MW-1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
MW-2	<2.0	<2.0	NS (2.0)	<2.0	<2.0	<2.0	<2.0
MW-3	20	383	NS (130)	<2.0	1,740	451	4,600
MW-4	<2.0	<2.0	NS (2.0)	NS (2.0)	<2.0	<2.0	<2.0
MW-5	NA	<2.0	NS (2.0)	<2.0	<2.0	<2.0	<2.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	<2.0	<2.0	<2.0	10	<2.0
MW-8	NA	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0	<2.0	NS (2.0)
MW-10	NA	NA	NA	<2.0	<2.0	<2.0	<2.0
MW-11	NA	NA	NA	NA	<2.0	NS (2.0)	NS (2.0)
MW-12	NA	NA	NA	NA	<2.0	<2.0	<2.0
MW-13	NA	NA	NA	NA	NA	NA	NA
MW-14	NA	NA	NA	NA	NA	NA	NA
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.



Interpolated between two sampling events.



Well not installed. Extrapolated from a sampling event.



Non-Sampled Well

## 1,1,1-TCA Upper Shallow Input Data

Well ID	Sep. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006
MW-1	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-2	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)
MW-3	145	316	<2.0	102	<5.0	50	28
MW-4	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-5	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NS (2.0)	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-8	NA	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-9	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-10	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-11	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)
MW-12	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-13	<2.0	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)
MW-14	<2.0	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,1,1-TCA Upper Shallow Input Data

Well ID	Mar. 2007	Sep. 2007	Mar. 2008	Sep. 2008	Mar. 2009	Sep. 2009	Mar. 2010
MW-1	<10 (1.0)	<5.0 (1.0)	<20 (1.0)	<1.0	<2.0	<20 (1.5)	<1.0
MW-2	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0
MW-3	734	2,600	1,700	2,900	4,400	2,400	2,400
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	<10 (1.0)	<20 (1.0)	<10 (1.0)	<1.0	<10 (1.0)	<10 (1.0)	<1.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	1.2	<100 (1.2)	<20 (1.1)	<1.0	<10 (1.0)	<10 (1.0)	<1.0
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

## 1,1,1-TCA Upper Shallow Input Data

Well ID	Sep. 2010	Sep. 2012	Sep. 2014	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018
MW-1	<1.0	<100 (1.0)	<1.0	<20 (1.0)	<10 (1.0)	<5.0 (1.0)	<20 (1.0)
MW-2	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-3	1,400	<2,500 (710)	20	<200 (20)	<100 (20)	<200 (20)	<500 (20)
MW-4	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	<1.0	<25 (1.0)	NS (1.0)	<5.0 (1.0)	<10 (1.0)	<5.0 (1.0)	<1.0
MW-6R	NA	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	<1.0	<100 (1.0)	<1.0	<5.0 (1.0)	<20 (1.0)	<20 (1.0)	<50 (1.0)
MW-8	<1.0	<5.0 (1.0)	<1.0	NS (1.0)	<1.0	<1.0	<1.0
MW-9	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	NA	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	NA	NA	NA	NA	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,1,1-TCA Upper Shallow Input Data

Well ID	Mar. 2019	Oct. 2019	Apr. 2020
MW-1	<10 (1.0)	<20 (1.0)	<10 (1.0)
MW-2	<1.0	<1.0	<1.0
MW-3	<200 (20)	<20	<500 (20)
MW-4	<1.0	<1.0	<1.0
MW-5	<5.0 (1.0)	<5.0 (1.0)	<5.0 (1.0)
MW-6R	<1.0	<1.0	<1.0
MW-7	<5.0 (1.0)	<5.0 (1.0)	<10 (1.0)
MW-8	<1.0	<1.0	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0
MW-11	<1.0	NS (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	<1.0	<1.0
MW-15	<1.0	<1.0	<1.0
MW-16	<1.0	<1.0	<1.0
MW-17	NA	<1.0	<1.0

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

	Interpolated between two sampling events.
	Well not installed. Extrapolated from a sampling event.
	Non-Sampled Well



## 1,2-DCA Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002	Mar. 2003
MW-1	4.2	<2.0	2.3	1.9	4.5	1.9	1
MW-2	<2.0	<2.0	NS (2.0)	<2.0	<2.0	<2.0	<2.0
MW-3	7.8	<2.0	NS (8.1)	11	57	26	69
MW-4	<2.0	<2.0	NS (2.0)	NS (2.0)	<2.0	<2.0	<2.0
MW-5	NA	<2.0	NS (2.0)	<2.0	1.2	<2.0	<2.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	<2.0	2	<2.0	<2.0	<2.0
MW-8	NA	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0	<2.0	NS (2.0)
MW-10	NA	NA	NA	<2.0	<2.0	<2.0	<2.0
MW-11	NA	NA	NA	NA	<2.0	NS (2.0)	NS (2.0)
MW-12	NA	NA	NA	NA	<2.0	<2.0	<2.0
MW-13	NA	NA	NA	NA	NA	NA	NA
MW-14	NA	NA	NA	NA	NA	NA	NA
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.



Interpolated between two sampling events.



Well not installed. Extrapolated from a sampling event.



Non-Sampled Well

## 1,2-DCA Upper Shallow Input Data

Well ID	Sep. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006
MW-1	<2.0	2.2	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-2	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)
MW-3	17	5.7	<2.0	7.3	<5.0	12	12
MW-4	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-5	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NS (2.0)	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-8	NA	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-9	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-10	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-11	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)
MW-12	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-13	<2.0	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)
MW-14	<2.0	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,2-DCA Upper Shallow Input Data

Well ID	Mar. 2007	Sep. 2007	Mar. 2008	Sep. 2008	Mar. 2009	Sep. 2009	Mar. 2010
MW-1	<10 (1.0)	<5.0 (1.0)	<20 (1.0)	<1.0	<2.0	<20 (1.5)	<1.0
MW-2	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0
MW-3	32	<100 (33)	34	<1.0	<200 (1.0)	<200 (1.0)	<1.0
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	<10 (1.0)	<20 (1.0)	<10 (1.0)	<1.0	<10 (1.0)	<10 (1.0)	<1.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	<1.0	<100 (1.0)	<20 (1.0)	<1.0	<10 (1.0)	<10 (1.0)	<1.0
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,2-DCA Upper Shallow Input Data

Well ID	Sep. 2010	Sep. 2012	Sep. 2014	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018
MW-1	<1.0	<100 (1.0)	<1.0	<20 (1.0)	<10 (1.0)	<5.0 (1.0)	<20 (1.0)
MW-2	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-3	<1.0	<2,500 (14)	28	<200 (40)	43	<200 (55)	<500 (71)
MW-4	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	<1.0	<25 (0.94)	NS (0.88)	<5.0 (0.80)	<10 (0.78)	<5.0 (0.77)	0.75
MW-6R	NA	<5.0 (1.0)	<1.0	<2.0	<1.0	<1.0	<1.0
MW-7	<1.0	<100 (1.0)	<1.0	<5.0 (1.0)	<20 (1.0)	<20 (1.0)	<50 (1.0)
MW-8	<1.0	<5.0 (1.0)	<1.0	NS (1.0)	<1.0	<1.0	<1.0
MW-9	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	NA	<5.0 (1.0)	<1.0	<2.0	<1.0	<1.0	<1.0
MW-16	NA	NA	NA	NA	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	NA	NA

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

## 1,2-DCA Upper Shallow Input Data

Well ID	Mar. 2019	Oct. 2019	Apr. 2020
MW-1	<10 (1.0)	<20 (1.0)	<10 (1.0)
MW-2	<1.0	<1.0	<1.0
MW-3	<200 (83)	99	<500 (99)
MW-4	<1.0	<1.0	<1.0
MW-5	<5.0 (1.5)	2.6	<5.0 (2.6)
MW-6R	<1.0	<1.0	<1.0
MW-7	<5.0 (1.0)	<5.0 (1.0)	<10 (1.0)
MW-8	<1.0	<1.0	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0
MW-11	<1.0	NS (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	<1.0	<1.0
MW-15	<1.0	<1.0	<1.0
MW-16	<1.0	<1.0	<1.0
MW-17	NA	<1.0	<1.0

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,1-DCA Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002	Mar. 2003	Sep. 2003
MW-1	<2.0	<2.0	2.2	<2.0	<2.0	<2.0	1.5	1.3
MW-2	<2.0	<2.0	NS (2.0)	<2.0	<2.0	<2.0	<2.0	<2.0
MW-3	127	460	NS (243)	133	1,900	3,040	3,060	214
MW-4	<2.0	<2.0	NS (2.0)	NS (2.0)	<2.0	<2.0	<2.0	<2.0
MW-5	NA	6.9	NS (5.5)	4.8	1.9	1.6	<2.0	<2.0
MW-6R	NA	NA	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	<2.0	<2.0	<2.0	<2.0	<2.0	NS (2.0)
MW-8	NA	NA	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0	<2.0	NS (2.0)	<2.0
MW-10	NA	NA	NA	<2.0	<2.0	<2.0	<2.0	<2.0
MW-11	NA	NA	NA	NA	<2.0	NS (2.0)	NS (2.0)	<2.0
MW-12	NA	NA	NA	NA	<2.0	<2.0	<2.0	<2.0
MW-13	NA	NA	NA	NA	NA	NA	NA	<2.0
MW-14	NA	NA	NA	NA	NA	NA	NA	<2.0
MW-15	NA	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

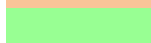
<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.



Interpolated between two sampling events.



Well not installed. Extrapolated from a sampling event.



Non-Sampled Well

## 1,1-DCA Upper Shallow Input Data

Well ID	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007
MW-1	153	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	7.4	<5.0
MW-2	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)	NS (1.0)	NS (1.0)
MW-3	486	<2.0	208	<5.0	339	235	1,200	2,400
MW-4	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	<1.0	<1.0
MW-5	2.3	4.4	<5.0 (3.3)	<5.0 (2.1)	<1.0	4.2	4.4	<20 (3.3)
MW-6R	NA	NA	NA	NA	NA	NA	NA	NA
MW-7	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	<1.0	<100 (1.0)
MW-8	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	<1.0	<1.0
MW-9	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	<1.0	<1.0
MW-10	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	<1.0	<1.0
MW-11	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)	NS (1.0)	NS (1.0)
MW-12	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0	NS (1.0)	NS (1.0)
MW-13	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)	NS (1.0)	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l


NA: Well not installed or abandoned.


<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## 1,1-DCA Upper Shallow Input Data

Well ID	Mar. 2008	Sep. 2008	Mar. 2009	Sep. 2009	Mar. 2010	Sep. 2010	Sep. 2012	Sep. 2014
MW-1	<20 (3.0)	<1.0	<2.0	<20 (1.5)	<1.0	<1.0	<100 (1.0)	<1.0
MW-2	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-3	1,800	3,900	4,100	4,000	3,800	3,900	4,140	908
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-5	<10 (2.1)	<1.0	<10 (2.8)	<10 (4.5)	6.3	<1.0	<25 (1.8)	NS (2.7)
MW-6R	NA	NA	NA	NA	NA	NA	<5.0 (1.0)	<1.0
MW-7	<20 (1.0)	<1.0	<10 (1.0)	<10 (1.0)	<1.0	<1.0	<100 (1.0)	<1.0
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0 (1.0)	<1.0
MW-11	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)	NS (1.0)	<5.0 (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)	NS (1.0)	<5.0 (1.0)	<1.0
MW-15	NA	NA	NA	NA	NA	NA	<5.0 (1.0)	<1.0
MW-16	NA	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l


NA: Well not installed or abandoned.


<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well



## 1,1-DCA Upper Shallow Input Data

Well ID	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018	Mar. 2019	Oct. 2019	Apr. 2020
MW-1	<20 (1.0)	<10 (1.0)	<5.0 (1.0)	<20 (1.0)	<10 (1.0)	<20 (1.0)	<10 (1.0)
MW-2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-3	890	680	1,200	1,800	1,100	1,500	1,800
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	3.7	<10 (5.5)	6.6	5.3	4.6	7.6	2.5
MW-6R	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	<5.0 (1.0)	<20 (1.0)	<20 (1.0)	<50 (1.0)	<5.0 (1.0)	<5.0 (1.0)	<10 (1.0)
MW-8	NS (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	<1.0	<1.0	<1.0	<1.0	<1.0	NS (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	<1.0	<1.0

**Notes:**


All concentrations in µg/l


NA: Well not installed or abandoned.


<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Toluene Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002	Mar. 2003
MW-1	1,050	979	436	396	317	344	265
MW-2	<2.0	<2.0	NS (2.0)	<2.0	<2.0	<2.0	<2.0
MW-3	<2.0	7.9	NS (4.9)	3.3	121	228	253
MW-4	<2.0	<2.0	NS (2.0)	NS (2.0)	<2.0	<2.0	<2.0
MW-5	NA	<2.0	NS (2.0)	<2.0	1.6	<2.0	<2.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	69	446	70	116	19
MW-8	NA	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0	<2.0	NS (2.0)
MW-10	NA	NA	NA	<2.0	<2.0	<2.0	<2.0
MW-11	NA	NA	NA	NA	<2.0	NS (2.0)	NS (2.0)
MW-12	NA	NA	NA	NA	<2.0	<2.0	<2.0
MW-13	NA	NA	NA	NA	NA	NA	NA
MW-14	NA	NA	NA	NA	NA	NA	NA
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Toluene Upper Shallow Input Data

Well ID	Sep. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006
MW-1	19	766	422	264	524	110	209
MW-2	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)
MW-3	4.5	<2.0	<2.0	<5.0 (1.9)	1.8	<1.0	3.9
MW-4	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-5	<2.0	<2.0	<2.0	<5.0 (1.1)	0.25	<1.0	<1.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NS (67)	114	57	35	59	<1.0	23
MW-8	NA	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-9	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-10	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-11	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)
MW-12	2.5	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-13	2.5	<2.0	NS (2.0)	2	<5.0 (1.5)	<1.0	NS (1.0)
MW-14	<2.0	11	NS (8.2)	<5.0	<5.0 (3.0)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Toluene Upper Shallow Input Data

Well ID	Mar. 2007	Sep. 2007	Mar. 2008	Sep. 2008	Mar. 2009	Sep. 2009	Mar. 2010
MW-1	26	<5.0	64	28	18	69	20
MW-2	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0
MW-3	68	220	170	400	520	380	390
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	<10 (1.0)	<20 (1.0)	<10 (1.0)	<1.0	<10 (1.0)	<10 (1.0)	<1.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	39	<100 (35)	<20	27	<10	25	33
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Toluene Upper Shallow Input Data

Well ID	Sep. 2010	Sep. 2012	Sep. 2014	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018
MW-1	2.5	<100 (5.1)	7.8	15	5	<5.0	<20 (5.0)
MW-2	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-3	350	<2,500 (213)	77	<200 (100)	<100	110	<500 (102)
MW-4	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	<1.0	<25 (1.0)	NS (1.0)	<5.0 (1.0)	<10 (1.0)	<5.0 (1.0)	<1.0
MW-6R	NA	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	7.2	<100 (5.0)	2.8	<5.0 (2.8)	<20 (2.8)	<20 (2.8)	<50 (2.8)
MW-8	<1.0	<5.0 (1.0)	<1.0	NS (1.0)	<1.0	<1.0	<1.0
MW-9	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	NA	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	NA	NA	NA	NA	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

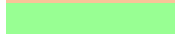
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Toluene Upper Shallow Input Data

Well ID	Mar. 2019	Oct. 2019	Apr. 2020
MW-1	<10 (5.0)	<20 (5.0)	<10 (5.0)
MW-2	<1.0	<1.0	<1.0
MW-3	97	150	220
MW-4	<1.0	<1.0	<1.0
MW-5	<5.0 (1.0)	<5.0 (1.0)	<5.0 (1.0)
MW-6R	<1.0	<1.0	<1.0
MW-7	<5.0 (2.8)	<5.0 (2.8)	<10 (2.8)
MW-8	<1.0	<1.0	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0
MW-11	<1.0	NS (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	0.53	3.3
MW-15	<1.0	<1.0	<1.0
MW-16	<1.0	<1.0	<1.0
MW-17	NA	<1.0	<1.0

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

	Interpolated between two sampling events.
	Well not installed. Extrapolated from a sampling event.
	Non-Sampled Well

## Ethylbenzene Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002	Mar. 2003
MW-1	1,950	1,890	1,050	854	635	1,900	938
MW-2	<2.0	<2.0	NS (2.0)	<2.0	<2.0	<2.0	<2.0
MW-3	250	21	NS (14)	10	386	900	669
MW-4	<2.0	<2.0	NS (2.0)	NS (2.0)	<2.0	<2.0	<2.0
MW-5	NA	<2.0	NS (2.0)	<2.0	25	1.6	<2.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	1,020	1,010	1,580	1,900	356
MW-8	NA	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0	<2.0	NS (2.0)
MW-10	NA	NA	NA	<2.0	<2.0	<2.0	<2.0
MW-11	NA	NA	NA	NA	<2.0	NS (2.0)	NS (2.0)
MW-12	NA	NA	NA	NA	<2.0	2	1.5
MW-13	NA	NA	NA	NA	NA	NA	NA
MW-14	NA	NA	NA	NA	NA	NA	NA
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Ethylbenzene Upper Shallow Input Data

Well ID	Sep. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006
MW-1	441	1,910	680	820	1,380	520	922
MW-2	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)
MW-3	13	1.3	<2.0	4	4.9	<1.0	13
MW-4	<2.0	<2.0	<2.0	<5.0 (1.3)	0.66	<1.0	<1.0
MW-5	<2.0	<2.0	<2.0	1.5	3	<1.0	<1.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	NS (1,278)	2,190	2,140	1,110	1,350	1,020	625
MW-8	NA	<2.0	<2.0	9.1	<5.0	<1.0	<1.0
MW-9	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-10	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-11	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	NS (1.0)
MW-12	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)	<1.0	<1.0
MW-13	<2.0	2.2	NS (1.9)	<5.0 (1.6)	<5.0 (1.3)	<1.0	NS (1.0)
MW-14	<2.0	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:


All concentrations in µg/l


NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well



## Ethylbenzene Upper Shallow Input Data

Well ID	Mar. 2007	Sep. 2007	Mar. 2008	Sep. 2008	Mar. 2009	Sep. 2009	Mar. 2010
MW-1	159	13	460	94	270	550	450
MW-2	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0
MW-3	339	820	580	1,200	1,300	920	1,100
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	<10 (1.0)	<20 (1.0)	<10 (1.0)	<1.0	<10 (1.0)	<10 (1.0)	<1.0
MW-6R	NA	NA	NA	NA	NA	NA	NA
MW-7	1,240	1,900	340	810	200	750	1,300
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	1.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-10	3.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	<1.0	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA	NA

### Notes:

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

## Ethylbenzene Upper Shallow Input Data

Well ID	Sep. 2010	Sep. 2012	Sep. 2014	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018
MW-1	45	<100 (39)	33	81	10	<5.0	33
MW-2	<1.0	<5.0 (1.0)	<1.0	<1.0	0.46	<1.0	<1.0
MW-3	920	<2,500 (558)	196	130	90	330	530
MW-4	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	<1.0	<25 (1.0)	NS (1.0)	<5.0 (1.0)	<10 (1.0)	<5.0 (1.0)	<1.0
MW-6R	NA	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	210	431	104	84	130	100	200
MW-8	<1.0	<5.0 (1.0)	<1.0	NS (1.0)	<1.0	<1.0	<1.0
MW-9	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	NA	<5.0 (1.0)	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	NA	NA	NA	NA	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	NA	NA

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

## Ethylbenzene Upper Shallow Input Data

Well ID	Mar. 2019	Oct. 2019	Apr. 2020
MW-1	32	39	24
MW-2	<1.0	<1.0	<1.0
MW-3	310	490	820
MW-4	<1.0	<1.0	<1.0
MW-5	<5.0	17	<5.0
MW-6R	<1.0	<1.0	<1.0
MW-7	79	37	47
MW-8	<1.0	<1.0	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0
MW-11	<1.0	NS (1.0)	<1.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	<1.0	<1.0
MW-15	<1.0	<1.0	<1.0
MW-16	<1.0	<1.0	<1.0
MW-17	NA	<1.0	<1.0

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

## Xylenes Upper Shallow Input Data

Well ID	Sep. 1999	Mar. 2000	Mar. 2001	Sep. 2001	Mar. 2002	Sep. 2002
MW-1	8,260	7,820	4,260	2,720	2,680	9,870
MW-2	<2.0	<2.0	NS (2.0)	<2.0	<2.0	<2.0
MW-3	1,480	69	NS (64)	62	1,530	3,828
MW-4	<2.0	<2.0	NS (2.0)	NS (2.0)	<2.0	<2.0
MW-5	NA	<2.0	NS (2.0)	<2.0	145	3.3
MW-6R	NA	NA	NA	NA	NA	NA
MW-7	NA	NA	3,430	3,016	8,000	10,950
MW-8	NA	NA	NA	NA	NA	NA
MW-9	NA	NA	NA	NA	<2.0	<2.0
MW-10	NA	NA	NA	<2.0	<2.0	<2.0
MW-11	NA	NA	NA	NA	<2.0	NS (2.0)
MW-12	NA	NA	NA	NA	<2.0	<2.0
MW-13	NA	NA	NA	NA	NA	NA
MW-14	NA	NA	NA	NA	NA	NA
MW-15	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

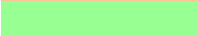
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Xylenes Upper Shallow Input Data

Well ID	Mar. 2003	Sep. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005
MW-1	4,040	2,193	9,220	3,220	3,940	6,580
MW-2	<2.0	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)
MW-3	2,912	60	8.4	2	43	43
MW-4	<2.0	<2.0	<2.0	<2.0	<5.0 (2.2)	2.5
MW-5	<2.0	<2.0	3.5	<2.0	6.4	13
MW-6R	NA	NA	NA	NA	NA	NA
MW-7	1,606	NS (5,710)	9,770	9,000	4,170	5,440
MW-8	NA	NA	<2.0	<2.0	33	<5.0
MW-9	NS (2.0)	<2.0	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)
MW-10	<2.0	<2.0	<2.0	<2.0	<5.0 (1.2)	0.39
MW-11	NS (2.0)	<2.0	<2.0	<2.0	<5.0 (1.2)	0.36
MW-12	<2.0	1.9	<2.0	<2.0	<5.0 (1.7)	<5.0 (1.3)
MW-13	NA	<2.0	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)
MW-14	NA	<2.0	<2.0	NS (1.7)	<5.0 (1.5)	<5.0 (1.2)
MW-15	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

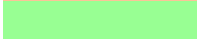
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Xylenes Upper Shallow Input Data

Well ID	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Mar. 2008	Sep. 2008
MW-1	2,430	3,910	736	5.2	1,900	460
MW-2	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-3	16	72	1,400	3,300	2,300	4,500
MW-4	<1.0	<1.0	3.3	<1.0	<1.0	<1.0
MW-5	<1.0	1.5	<10 (1.3)	<20 (1.2)	<10 (1.1)	<1.0
MW-6R	NA	NA	NA	NA	NA	NA
MW-7	4,040	2,350	4,650	7,300	1,500	3,400
MW-8	<1.0	<1.0	<1.0	<1.0	<1.0	1.9
MW-9	<1.0	<1.0	7.6	<1.0	<1.0	<1.0
MW-10	<1.0	<1.0	12	<1.0	<1.0	<1.0
MW-11	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-12	<1.0	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-15	NA	NA	NA	NA	NA	NA
MW-16	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

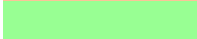
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Xylenes Upper Shallow Input Data

Well ID	Mar. 2009	Sep. 2009	Mar. 2010	Sep. 2010	Sep. 2012	Sep. 2014
MW-1	1,000	2,300	1,900	160	403	99
MW-2	NS (1.0)	NS (1.0)	<1.0	<1.0	<15 (1.5)	<2.0
MW-3	4,800	3,600	4,600	3,600	<7,500 (2,208)	817
MW-4	<1.0	<1.0	<1.0	<1.0	<15 (1.5)	<2.0
MW-5	<10 (1.0)	<10 (1.0)	<1.0	<1.0	<75 (1.0)	NS (1.0)
MW-6R	NA	NA	NA	NA	<15 (2.0)	<2.0
MW-7	790	3,300	5,700	870	1,720	373
MW-8	<1.0	<1.0	<1.0	<1.0	<15 (1.5)	<2.0
MW-9	<1.0	<1.0	<1.0	<1.0	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0	<1.0	<15 (1.5)	<2.0
MW-11	NS (1.0)	<1.0	NS (1.1)	NS (1.2)	<15 (1.6)	<2.0
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	NS (1.0)	<1.0	NS (1.1)	NS (1.2)	<15 (1.6)	<2.0
MW-15	NA	NA	NA	NA	<15 (2.0)	<2.0
MW-16	NA	NA	NA	NA	NA	NA
MW-17	NA	NA	NA	NA	NA	NA

**Notes:**


All concentrations in µg/l

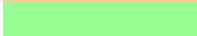
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well

## Xylenes Upper Shallow Input Data

Well ID	Feb. 2017	Oct. 2017	Mar. 2018	Oct. 2018	Mar. 2019	Oct. 2019
MW-1	380	53	12	140	200	97
MW-2	<1.0	1.4	<1.0	<1.0	<1.0	<1.0
MW-3	530	320	1,300	2,100	1,200	2,000
MW-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-5	<5.0 (1.0)	<10 (1.0)	<5.0 (1.0)	<1.0	<5.0 (1.8)	2.9
MW-6R	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	320	420	310	960	210	140
MW-8	NS (1.2)	<1.0	<1.1	<1.1	<1.0	<1.0
MW-9	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	<1.0	<1.0	<1.0	<1.0	<1.0	NS (1.0)
MW-12	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-13	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)	NS (1.0)
MW-14	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-15	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-16	NA	<1.0	<1.0	<1.0	<1.0	<1.0
MW-17	NA	NA	NA	NA	NA	<1.0

**Notes:**

All concentrations in µg/l

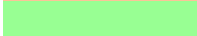
NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.

 Interpolated between two sampling events.

 Well not installed. Extrapolated from a sampling event.

 Non-Sampled Well



## Xylenes Upper Shallow Input Data

Well ID	Apr. 2020
MW-1	110
MW-2	<1.0
MW-3	3,300
MW-4	<1.0
MW-5	<5.0 (2.9)
MW-6R	<1.0
MW-7	140
MW-8	<1.0
MW-9	NS (1.0)
MW-10	<1.0
MW-11	<1.0
MW-12	NS (1.0)
MW-13	NS (1.0)
MW-14	<1.0
MW-15	<1.0
MW-16	<1.0
MW-17	<1.0

**Notes:**

All concentrations in µg/l

NA: Well not installed or abandoned.

<5.00: Analyte not detected. Detection limit used.

<100 (21.0): Analyte not detected. Elevated detection limit, interpolated or extrapolated value shown.

NS (21.0): Well not sampled, interpolated or extrapolated value shown - refer to shading for more specific explanation.



Interpolated between two sampling events.

Well not installed. Extrapolated from a sampling event.

Non-Sampled Well

**Ricker Method® Plume Stability Analysis Metrics Summary**

<b>Ricker Method® Plume Stability Characteristics</b>			
<b>PCE Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	17.1	264	36.8
Mar-2000	11.6	78	7.4
Mar-2001	18.9	215	33.2
Sep-2001	19.7	68	10.9
Mar-2002	19.5	134	21.4
Sep-2002	19.2	142	22.3
Mar-2003	19.4	117	18.4
Sep-2003	17.7	75	10.8
Mar-2004	17.9	135	19.7
Sep-2004	17.4	142	20.1
Mar-2005	17.9	151	22.1
Sep-2005	15.9	114	14.7
Mar-2006	14.4	56	6.6
Sep-2006	14.1	56	6.5
Mar-2007	15.4	56	7.0
Sep-2007	13.2	25	2.7
Mar-2008	14.5	54	6.4
Sep-2008	8.7	80	5.7
Mar-2009	8.2	126	8.5
Sep-2009	7.9	44	2.9
Mar-2010	6.8	42	2.3
Sep-2010	7.6	50	3.1
Sep-2012	11.3	29	2.6
Sep-2014	6.2	15	0.7
Feb-2017	6.9	17	0.9
Oct-2017	6.8	16	0.9
Mar-2018	7.3	14	0.8
Oct-2018	7.2	17	1.0
Mar-2019	7.5	17	1.0
Oct-2019	4.6	8	0.3
Apr-2020	7.5	16	1.0

<b>Ricker Method® Plume Stability Characteristics</b>			
<b>TCE Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	15.8	27	3.4
Mar-2000	14.1	73	8.4
Mar-2001	17.6	153	22.0
Sep-2001	17.9	60	8.7
Mar-2002	17.7	317	45.8
Sep-2002	17.5	298	42.5
Mar-2003	17.5	315	44.8
Sep-2003	17.2	69	9.7
Mar-2004	16.5	109	14.7
Sep-2004	16.3	118	15.8
Mar-2005	17.3	121	17.0
Sep-2005	16.5	141	19.0
Mar-2006	14.6	77	9.2
Sep-2006	14.6	57	6.8
Mar-2007	16.4	169	22.7
Sep-2007	13.3	199	21.6
Mar-2008	14.9	124	15.0
Sep-2008	10.6	205	17.7
Mar-2009	9.5	325	25.2
Sep-2009	9.3	120	9.1
Mar-2010	7.6	96	6.0
Sep-2010	8.3	134	9.2
Sep-2012	12.8	70	7.3
Sep-2014	10.7	22	1.9
Feb-2017	10.7	19	1.7
Oct-2017	11.2	21	1.9
Mar-2018	11.5	23	2.2
Oct-2018	11.6	23	2.1
Mar-2019	11.7	24	2.3
Oct-2019	11.7	20	1.9
Apr-2020	11.6	20	1.9

<b>Ricker Method® Plume Stability Characteristics cis-1,2-DCE Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	16.4	1,144	153
Mar-2000	14.5	1,416	167
Mar-2001	17.3	1,448	204
Sep-2001	17.7	1,518	219
Mar-2002	17.9	1,616	235
Sep-2002	17.6	2,881	413
Mar-2003	17.4	2,566	364
Sep-2003	17.4	1,206	171
Mar-2004	17.3	1,441	203
Sep-2004	17.3	1,212	171
Mar-2005	17.2	1,293	181
Sep-2005	16.8	2,166	297
Mar-2006	16.4	1,390	186
Sep-2006	16.5	1,441	194
Mar-2007	17.7	2,447	354
Sep-2007	16.6	3,104	421
Mar-2008	16.4	3,087	412
Sep-2008	16.8	4,709	646
Mar-2009	16.4	3,488	467
Sep-2009	16.8	4,330	594
Mar-2010	16.4	4,161	556
Sep-2010	16.5	3,022	407
Sep-2012	16.3	1,526	203
Sep-2014	16.2	574	76
Feb-2017	15.9	662	86
Oct-2017	16.0	371	48
Mar-2018	15.8	408	53
Oct-2018	15.9	580	75
Mar-2019	15.8	475	61
Oct-2019	16.2	620	82
Apr-2020	15.8	626	81

<b>Ricker Method® Plume Stability Characteristics trans-1,2-DCE Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	12.8	17	1.8
Mar-2000	14.4	54	6.3
Mar-2001	13.6	21	2.4
Sep-2001	9.4	17	1.3
Mar-2002	15.5	30	3.8
Sep-2002	15.7	55	7.0
Mar-2003	15.7	43	5.5
Sep-2003	15.1	24	2.9
Mar-2004	14.5	36	4.2
Sep-2004	14.6	26	3.1
Mar-2005	14.4	22	2.6
Sep-2005	13.8	26	2.9
Mar-2006	8.9	11	0.8
Sep-2006	13.0	19	2.0
Mar-2007	13.0	30	3.2
Sep-2007	12.7	34	3.5
Mar-2008	12.9	33	3.5
Sep-2008	10.3	36	3.1
Mar-2009	12.3	46	4.6
Sep-2009	12.5	45	4.6
Mar-2010	12.0	39	3.8
Sep-2010	11.1	39	3.5
Sep-2012	10.1	24	2.0
Sep-2014	9.7	20	1.6
Feb-2017	10.2	15	1.2
Oct-2017	8.3	11	0.7
Mar-2018	5.4	18	0.8
Oct-2018	7.0	21	1.2
Mar-2019	6.5	14	0.8
Oct-2019	7.8	20	1.3
Apr-2020	7.1	21	1.2

<b>Ricker Method® Plume Stability Characteristics 1,1-DCE Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	11.9	17	1.7
Mar-2000	12.6	51	5.2
Mar-2001	11.2	34	3.1
Sep-2001	9.0	31	2.2
Mar-2002	11.9	104	10.1
Sep-2002	12.7	175	18.2
Mar-2003	11.2	188	17.1
Sep-2003	7.1	33	1.9
Mar-2004	11.3	62	5.7
Sep-2004	11.2	43	3.9
Mar-2005	12.9	32	3.3
Sep-2005	14.0	32	3.7
Mar-2006	5.7	36	1.7
Sep-2006	10.9	33	2.9
Mar-2007	11.1	97	8.8
Sep-2007	10.2	174	14.4
Mar-2008	9.0	145	10.6
Sep-2008	7.4	231	14.0
Mar-2009	9.2	255	19.2
Sep-2009	9.1	186	13.8
Mar-2010	8.6	180	12.6
Sep-2010	7.6	175	10.9
Sep-2012	8.9	85	6.2
Sep-2014	6.7	49	2.7
Feb-2017	6.6	39	2.1
Oct-2017	5.0	29	1.2
Mar-2018	5.8	41	2.0
Oct-2018	5.0	53	2.2
Mar-2019	5.2	38	1.6
Oct-2019	5.6	48	2.2
Apr-2020	5.8	52	2.5

<b>Ricker Method® Plume Stability Characteristics Vinyl Chloride Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	15.1	20	2.5
Mar-2000	12.1	30	3.0
Mar-2001	15.9	44	5.7
Sep-2001	13.7	15	1.7
Mar-2002	16.0	110	14.5
Sep-2002	16.1	115	15.1
Mar-2003	14.3	142	16.6
Sep-2003	14.3	24	2.8
Mar-2004	15.4	62	7.8
Sep-2004	15.3	40	5.0
Mar-2005	15.3	32	4.1
Sep-2005	15.3	31	3.9
Mar-2006	15.3	39	4.9
Sep-2006	15.6	52	6.6
Mar-2007	15.7	92	11.8
Sep-2007	16.8	130	17.9
Mar-2008	16.6	128	17.4
Sep-2008	17.1	163	22.9
Mar-2009	15.6	166	21.1
Sep-2009	17.6	170	24.4
Mar-2010	15.6	195	24.8
Sep-2010	16.9	171	23.5
Sep-2012	16.2	65	8.6
Sep-2014	15.9	41	5.4
Feb-2017	15.2	44	5.5
Oct-2017	15.0	33	4.0
Mar-2018	13.7	35	4.0
Oct-2018	14.9	58	7.1
Mar-2019	14.1	34	3.9
Oct-2019	15.3	51	6.4
Apr-2019	14.6	46	5.4



<b>Ricker Method® Plume Stability Characteristics</b>			
<b>Total Chloroethenes Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (moles)</b>
Sep-1999	17.4	13,471	869
Mar-2000	19.1	12,911	913
Mar-2001	18.9	17,124	1,197
Sep-2001	20.2	14,951	1,120
Mar-2002	19.5	20,777	1,497
Sep-2002	19.5	33,074	2,381
Mar-2003	19.4	30,004	2,149
Sep-2003	18.1	13,642	914
Mar-2004	18.4	17,065	1,164
Sep-2004	18.2	14,624	986
Mar-2005	17.8	15,610	1,030
Sep-2005	17.1	24,674	1,563
Mar-2006	16.4	16,049	974
Sep-2006	16.5	16,820	1,025
Mar-2007	17.7	29,037	1,906
Sep-2007	16.8	36,588	2,279
Mar-2008	16.6	35,875	2,202
Sep-2008	17.2	52,746	3,366
Mar-2009	16.4	42,373	2,571
Sep-2009	17.6	47,496	3,099
Mar-2010	16.4	47,843	2,902
Sep-2010	16.9	35,108	2,192
Sep-2012	16.4	17,862	1,086
Sep-2014	16.4	6,995	425
Feb-2017	16.4	7,675	467
Oct-2017	16.3	4,552	274
Mar-2018	16.0	5,024	298
Oct-2018	16.1	7,210	430
Mar-2019	16.2	5,645	337
Oct-2019	16.5	7,446	454
Apr-2020	16.1	7,472	444

<b>Ricker Method® Plume Stability Characteristics 1,1,2-TCA Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	5.6	8.3	0.4
Mar-2000	0.0	5.0	0.0
Mar-2001	7.1	14.1	0.8
Sep-2001	7.6	17.6	1.1
Mar-2002	9.2	71.8	5.4
Sep-2002	11.7	32.6	3.1
Mar-2003	9.3	131.2	9.9
Sep-2003	7.4	21.2	1.3
Mar-2004	7.9	25.4	1.6
Sep-2004	0.0	5.0	0.0
Mar-2005	7.3	19.3	1.1
Sep-2005	0.0	5.0	0.0
Mar-2006	5.6	17.6	0.8
Sep-2006	4.2	8.9	0.3
Mar-2007	7.5	51.6	3.2
Sep-2007	8.0	108.9	7.1
Mar-2008	7.6	74.3	4.6
Sep-2008	8.1	222.9	14.8
Mar-2009	8.7	268.2	18.9
Sep-2009	8.4	250.9	17.2
Mar-2010	8.1	217.8	14.4
Sep-2010	8.0	196.7	12.9
Sep-2012	7.6	116.0	7.2
Sep-2014	5.0	15.2	0.6
Feb-2017	5.1	15.1	0.6
Oct-2017	3.7	14.0	0.4
Mar-2018	3.8	14.0	0.4
Oct-2018	3.3	14.3	0.4
Mar-2019	3.3	14.3	0.4
Oct-2019	3.3	14.3	0.4
Apr-2020	3.3	14.3	0.4

<b>Ricker Method® Plume Stability Characteristics 1,1,1-TCA Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	5.6	8.3	0.4
Mar-2000	8.6	47.7	3.3
Mar-2001	7.9	24.0	1.5
Sep-2001	0.0	5.0	0.0
Mar-2002	9.3	135.1	10.2
Sep-2002	9.6	51.1	4.0
Mar-2003	9.6	275.8	21.7
Sep-2003	7.9	25.6	1.6
Mar-2004	8.4	41.8	2.9
Sep-2004	0.0	5.0	0.0
Mar-2005	7.1	20.9	1.2
Sep-2005	0.0	5.0	0.0
Mar-2006	5.2	14.1	0.6
Sep-2006	4.4	10.1	0.4
Mar-2007	7.5	77.7	4.7
Sep-2007	8.1	191.4	12.6
Mar-2008	7.9	140.5	9.0
Sep-2008	8.1	207.3	13.7
Mar-2009	8.7	277.8	19.6
Sep-2009	8.2	178.8	12.0
Mar-2010	8.0	180.4	11.8
Sep-2010	7.7	122.2	7.7
Sep-2012	6.7	47.6	2.6
Sep-2014	2.3	8.1	0.1
Feb-2017	2.2	8.1	0.1
Oct-2017	1.5	8.0	0.1
Mar-2018	1.5	8.0	0.1
Oct-2018	1.5	8.0	0.1
Mar-2019	1.5	8.0	0.1
Oct-2019	1.5	8.0	0.1
Apr-2020	1.5	8.0	0.1

<b>Ricker Method® Plume Stability Characteristics 1,2-DCA Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	2.7	5.77	0.1
Mar-2000	0.0	5.00	0.0
Mar-2001	1.6	5.89	0.1
Sep-2001	3.0	6.59	0.2
Mar-2002	7.6	14.55	0.9
Sep-2002	5.8	9.67	0.5
Mar-2003	6.6	16.62	0.9
Sep-2003	4.8	7.84	0.3
Mar-2004	0.2	5.22	0.0
Sep-2004	0.0	5.00	0.0
Mar-2005	0.8	5.68	0.0
Sep-2005	0.0	5.00	0.0
Mar-2006	2.2	6.74	0.1
Sep-2006	2.3	6.83	0.1
Mar-2007	4.6	10.96	0.4
Sep-2007	4.7	11.13	0.4
Mar-2008	4.7	11.29	0.4
Sep-2008	0.0	5.00	0.0
Mar-2009	0.0	5.00	0.0
Sep-2009	0.0	5.00	0.0
Mar-2010	0.0	5.00	0.0
Sep-2010	0.0	5.00	0.0
Sep-2012	1.5	7.17	0.1
Sep-2014	2.8	9.13	0.2
Feb-2017	4.2	10.55	0.4
Oct-2017	2.4	10.68	0.2
Mar-2018	2.7	11.74	0.3
Oct-2018	3.0	13.08	0.3
Mar-2019	3.5	13.72	0.4
Oct-2019	4.1	14.59	0.5
Apr-2020	4.1	14.59	0.5

<b>Ricker Method® Plume Stability Characteristics 1,1-DCA Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	8.4	23	1.6
Mar-2000	10.6	49	4.2
Mar-2001	10.0	33	2.7
Sep-2001	9.2	23	1.7
Mar-2002	9.3	144	10.9
Sep-2002	9.3	205	15.6
Mar-2003	9.3	206	15.6
Sep-2003	7.8	33	2.1
Mar-2004	12.1	68	6.7
Sep-2004	0.0	5	0.0
Mar-2005	8.4	31	2.1
Sep-2005	0.0	5	0.0
Mar-2006	6.9	46	2.6
Sep-2006	7.9	34	2.2
Mar-2007	10.7	98	8.5
Sep-2007	10.2	164	13.6
Mar-2008	9.2	138	10.4
Sep-2008	8.2	258	17.3
Mar-2009	9.4	252	19.3
Sep-2009	9.7	240	19.0
Mar-2010	9.9	225	18.2
Sep-2010	8.2	258	17.3
Sep-2012	8.0	148	9.7
Sep-2014	7.6	54	3.3
Feb-2017	7.9	53	3.4
Oct-2017	7.1	34	2.0
Mar-2018	7.8	45	2.9
Oct-2018	7.7	59	3.7
Mar-2019	7.1	45	2.6
Oct-2019	8.1	52	3.4
Apr-2020	6.6	65	3.5

<b>Ricker Method® Plume Stability Characteristics</b>			
<b>Total Chloroethanes Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (moles)</b>
Sep-1999	8.37	339	11
Mar-2000	10.53	794	31
Mar-2001	9.91	565	21
Sep-2001	9.12	368	12
Mar-2002	9.85	2,968	108
Sep-2002	11.82	2,248	98
Mar-2003	9.59	5,193	184
Sep-2003	7.92	722	21
Mar-2004	12.03	1,043	46
Sep-2004	0.00	0	0
Mar-2005	8.37	586	18
Sep-2005	0.00	0	0
Mar-2006	6.90	683	17
Sep-2006	7.85	446	13
Mar-2007	10.62	1,738	68
Sep-2007	10.14	3,526	132
Mar-2008	9.16	2,846	96
Sep-2008	8.15	5,870	177
Mar-2009	9.35	6,397	221
Sep-2009	9.69	5,250	188
Mar-2010	9.84	4,765	173
Sep-2010	8.15	4,987	150
Sep-2012	7.96	2,664	78
Sep-2014	7.49	682	19
Feb-2017	7.83	686	20
Oct-2017	7.06	449	12
Mar-2018	7.76	569	16
Oct-2018	7.63	718	20
Mar-2019	7.04	597	16
Oct-2019	8.03	662	20
Apr-2020	6.55	829	20

<b>Ricker Method® Plume Stability Characteristics Toluene Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	10.6	98.5	8.5
Mar-2000	11.3	91.0	8.4
Mar-2001	9.9	41.1	3.3
Sep-2001	9.3	70.3	5.3
Mar-2002	13.1	49.7	5.3
Sep-2002	13.5	68.7	7.6
Mar-2003	13.4	56.6	6.2
Sep-2003	6.9	10.9	0.6
Mar-2004	7.8	46.9	3.0
Sep-2004	7.3	31.9	1.9
Mar-2005	6.1	24.7	1.2
Sep-2005	5.5	37.5	1.7
Mar-2006	2.7	14.2	0.3
Sep-2006	6.5	20.7	1.1
Mar-2007	9.9	22.0	1.8
Sep-2007	9.3	35.1	2.7
Mar-2008	10.6	38.0	3.3
Sep-2008	10.5	56.8	4.9
Mar-2009	10.2	61.5	5.1
Sep-2009	10.9	61.0	5.4
Mar-2010	10.4	54.8	4.6
Sep-2010	8.5	44.7	3.1
Sep-2012	7.5	21.9	1.3
Sep-2014	6.9	13.1	0.7
Feb-2017	7.9	15.2	1.0
Oct-2017	5.1	13.8	0.6
Mar-2018	5.2	14.4	0.6
Oct-2018	5.1	13.9	0.6
Mar-2019	5.0	13.6	0.6
Oct-2019	5.6	16.5	0.8
Apr-2020	6.0	19.7	1.0

<b>Ricker Method® Plume Stability Characteristics Ethylbenzene Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	15.4	224	28.1
Mar-2000	13.2	143	15.4
Mar-2001	12.4	125	12.7
Sep-2001	11.7	117	11.2
Mar-2002	16.0	163	21.2
Sep-2002	13.9	280	31.7
Mar-2003	13.9	160	18.1
Sep-2003	12.0	64	6.3
Mar-2004	7.7	160	10.0
Sep-2004	7.6	105	6.5
Mar-2005	8.8	84	6.0
Sep-2005	9.6	110	8.6
Mar-2006	5.9	80	3.8
Sep-2006	9.8	76	6.1
Mar-2007	11.2	112	10.2
Sep-2007	10.5	122	10.4
Mar-2008	11.6	141	13.3
Sep-2008	11.3	171	15.7
Mar-2009	11.6	181	17.1
Sep-2009	11.7	204	19.5
Mar-2010	11.7	230	22.0
Sep-2010	11.0	116	10.4
Sep-2012	10.4	44	3.8
Sep-2014	9.7	24	1.9
Feb-2017	9.9	24	1.9
Oct-2017	7.0	15	0.8
Mar-2018	7.4	23	1.4
Oct-2018	9.0	35	2.6
Mar-2019	10.3	27	2.3
Oct-2019	11.8	36	3.4
Apr-2020	10.4	40	3.4



<b>Ricker Method® Plume Stability Characteristics Xylene Upper Shallow</b>			
<b>Event</b>	<b>Area (acres)</b>	<b>Average Concentration (µg/L)</b>	<b>Mass Indicator (lbs)</b>
Sep-1999	15.8	833	107.2
Mar-2000	14.0	449	51.1
Mar-2001	13.9	373	42.1
Sep-2001	13.8	296	33.3
Mar-2002	16.9	623	85.7
Sep-2002	14.7	1,102	132.1
Mar-2003	14.2	540	62.8
Sep-2003	13.7	215	24.0
Mar-2004	11.5	470	44.1
Sep-2004	8.4	329	22.4
Mar-2005	14.5	240	28.4
Sep-2005	14.8	342	41.2
Mar-2006	10.4	204	17.3
Sep-2006	11.8	245	23.7
Mar-2007	12.5	390	39.9
Sep-2007	10.5	310	26.6
Mar-2008	12.2	466	46.2
Sep-2008	12.0	529	52.0
Mar-2009	12.1	547	53.8
Sep-2009	12.2	676	67.1
Mar-2010	12.2	791	78.5
Sep-2010	11.6	353	33.5
Sep-2012	12.0	146	14.3
Sep-2014	11.6	64	6.1
Feb-2017	11.2	62	5.7
Oct-2017	9.1	33	2.4
Mar-2018	9.0	51	3.7
Oct-2018	10.2	90	7.5
Mar-2019	10.5	68	5.8
Oct-2019	10.7	78	6.8
Apr-2020	10.9	104	9.2

**Appendix G**

**Groundwater Plume Analytics® Presentation.pptx**

Not Included - Scanned Separately