March 2018 Sampling Report

Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

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1.0 Introduction

This report summarizes the methods and results of a field sampling program performed on March 27 and 28, 2018 at the Carroll and Dubies Superfund Site (Site), Town of Deerpark, Orange County, New York. Monitoring wells OW-2, OW-5, OW-6, OW-10R, OW-13R, OW-18, OW-19, OW-21, OW-22, and OW-24 were sampled. Surface water and sediment samples were collected at designated upstream and downstream locations on Gold Creek. The purpose of this sampling program is to document volatile organic compound (VOC) concentrations in the outwash aquifer at the Site, and in the surface water and sediment of Gold Creek. The field work followed the August 2005 Supplemental Sampling Work Plan (Cardinal Resources LLC [Cardinal Resources], 2005) approved by the United States Environmental Protection Agency (U.S. EPA), and incorporated the recommendations of the *November 2006 Sampling Report* (Cardinal Resources, 2007). The monitoring program reflects a reduced sampling approach, as agreed to in email exchanges with Ms. Maria Jon of U.S. EPA dated August 12, 2015 and September 16, 2015.

1.1 Site Setting

The three-acre Site is located in the Town of Deerpark in Orange County, New York, which is approximately 3,000 feet northeast of the City of Port Jervis, New York (Figure 1). The Site is situated on the northwestern flank of the Neversink Valley. Gold Creek lies approximately 1,500 feet to the east, and the Neversink River is located approximately 2,500 feet beyond Gold Creek.

The Site is underlain by sand and gravel deposits of glacial and glaciofluvial origin. Groundwater monitoring wells on the Site have been completed in the outwash unit, found above a low-permeability till zone that functions as an aquitard. The outwash unit consists of fine to coarse sand with fine to coarse gravel. The direction of groundwater flow is generally toward the southeast.

1.2 Land and Resource Use

Figure 2 shows land use features in the vicinity of the former Carroll and Dubies lagoons. The immediate surrounding area includes undeveloped woodlands to the north; undeveloped woodlands, quarry ponds, and commercial sand and gravel operations to the northeast; the closed City of Port Jervis landfill, the Orange County Transfer Station, and a concrete products company to the south; and a sparsely

vegetated, shale bedrock hillside to the west. In 2004, the City of Port Jervis began a small sand and gravel operation on land it owns, immediately to the southeast of the former lagoons, in the vicinity of OW-5 and OW-6. These conditions have remained stable during the period of Site investigation and post-remediation monitoring, although truck traffic along the road adjacent to OW-17, OW-18, OW-19, OW-23, and OW-24 associated with the sand and gravel operations to the northeast has increased over the past few years. During the March 2018 sampling event, the City of Port Jervis was not actively excavating and screening sand and gravel in the area southeast of OW-5 and OW-6.

1.3 History of Waste Disposal and Contamination

In 1971, the three-acre Carroll and Dubies Site began operating as a disposal facility consisting of a series of lagoons. The majority of wastes disposed in the lagoons were septic waste, municipal sewage sludge, and solid waste. The Site also received liquid industrial wastes from approximately 1971 to 1979.

Over time, waste constituents in the lagoons leached into groundwater and affected the outwash aquifer. VOCs were of particular concern because of their dispersion in the aquifer and relative risk. Benzene, vinyl chloride, and other VOCs were found through a series of investigations to exceed Applicable or Relevant and Appropriate Requirements (ARARs) in Site wells.

1.4 Overview of Remedies

The remedies selected for the Site were defined by two operable units (OU), the waste lagoons themselves, and the impacted groundwater. Remedies were selected and executed to remove wastes from the lagoons, restore the Site to a safe and stable condition, and promote and track improvements in groundwater quality.

1.4.1 OU-1 Remedy

The goals of the OU-1 remedy conducted in 1999 were to prevent further leaching of contaminants into groundwater, and to reduce the risks to potential future workers at the Site who could come in contact with lagoon wastes. The steps in this process were:

- Excavation of all wastes from Lagoons 1, 2, 3, 4, 6, 7, and 8, along with surrounding soils that exceeded specified levels for indicator chemicals.

- Appropriate management of all excavated wastes and soils.
- Placement of imported clean fill in the excavations, followed by grading for drainage control and vegetation.

1.4.2 OU-2 Remedy

The goals of the ongoing OU-2 remedy, which was initiated in 1999, are to allow natural attenuation to reduce or eliminate the risks associated with the ingestion of Site groundwater for future Site workers and to protect Gold Creek from Site-related impacts. A monitoring program was designed to address concerns primarily related to determining whether the source removal was successful and the Site is stable. The steps in the OU-2 remedy are:

- Execution of a monitoring program in accordance with Work Plans and other documents prepared for the project and approved by the U.S. EPA.
- With each sampling round, a report is prepared for U.S. EPA that documents the progress made in achieving the remedial goals.

1.5 Overview of 2006 Groundwater Monitoring Program

A supplemental sampling program was initiated in February 2006 in response to the 2005 five-year review. Part of the program was to install two new monitoring wells, OW-24 and OW-25, east and south of OW-2, OW-5, and OW-6 (Figure 3), to determine the extent of the chlorinated VOC plume in the vicinity of OW-2, OW-5, and OW-6. Two existing monitoring wells that were not part of the ongoing groundwater monitoring network, OW-17 and OW-23, downgradient and to the west of OW-2, OW-5, and OW-6, were also redeveloped and sampled.

Groundwater was sampled three more times in 2006: in May, August, and November. The purpose of quarterly sampling of the wells in the vicinity of the chlorinated VOC plume was to evaluate trends through an entire hydrologic cycle. In all four sampling rounds, the results for the chlorinated VOC plume were consistent. Tetrachloroethene (PCE), trichloroethene (TCE) and their degradation products (chloroethane, 1,2-dichloroethene, and vinyl chloride) were nondetectable in OW-24 and OW-25. In OW-17 and OW-23, chlorinated VOCs were occasionally detected at low, estimated concentrations below the reporting limit, and below state and federal groundwater criteria. Chlorinated VOC impacts at OW-2, OW-5, and OW-6 remained localized.

1.6 Resumption of Annual Monitoring Program

In June 2007, the annual groundwater monitoring program resumed, and continued in 2008, 2009, 2010, and 2011.

1.7 Modified Sampling Frequency

In 2011, a program was initiated to cover the entire hydrologic cycle over the next five-year period through sampling every five quarters. This enhancement to the sampling program was described in a letter to the U.S. EPA dated November 2, 2010. Based on this rotation, the March 2018 sampling program (first quarter) follows the November 2016 sampling round (fourth quarter).

1.8 Reduced Sampling Approach

As part of the 2015 Five Year Review, U.S. EPA agreed to a reduced sampling approach. This approach, outlined in email exchanges (August 12, 2015; September 16, 2015), includes a schedule for sample media:

- 3rd quarter 2015 groundwater, surface water/sediment
- 4th quarter 2016 groundwater
- 1st quarter 2018 groundwater, surface water/sediment
- 2nd quarter 2019 groundwater

The groundwater monitoring network will include the following 10 wells:

OW-2	OW-18
OW-5	OW-19
OW-6	OW-21
OW-10R	OW-22
OW-13R	OW-24

Monitoring parameters will include:

- 3rd quarter 2015 groundwater VOCs, redox, dissolved oxygen, pH, temperature, turbidity, and ethane/ethene; VOCs for surface water and sediment
- 4th quarter 2016 groundwater VOCs, redox, dissolved oxygen, pH, temperature, and turbidity

- 1st quarter 2018 groundwater VOCs, redox, dissolved oxygen, pH, temperature, and turbidity; VOCs for surface water and sediment
- 2nd quarter 2019 groundwater VOCs, redox, dissolved oxygen, pH, temperature, and turbidity

2.0 Groundwater Sample Collection

This section describes methods used to collect groundwater samples for analysis. The results of the groundwater sampling program are provided in Section 3.0.

2.1 Groundwater Elevations

Groundwater elevations were measured on March 27, 2018. The depth to groundwater was measured from the reference point elevation using an electronic water-level meter and recorded on a monitoring well sampling form.

2.2 Wells and Equipment

Dedicated low-flow bladder pumps were used to purge and sample the monitoring well network, with the exception of wells OW-13R, OW-18, OW-19, and OW-24, which were sampled with a portable bladder pump. OW-18 and OW-19 formerly had dedicated bladder pumps but the pumps are no longer operating. OW-13R and OW-24 have always been sampled with a portable bladder pump. The portable bladder pump was decontaminated initially and after sampling each well by:

- Washing with low phosphate detergent and tap water
- Rinsing with tap water
- Rinsing with deionized water
- Air drying

Clean disposable tubing and a clean disposable Teflon bladder were used for each well sampled with the bladder pump.

2.3 Well Purging and Sampling

Groundwater samples were collected on March 27 and March 28, 2018. All wells were purged using low-flow techniques (between 100 and 200 milliliters per minute [mL/min]). During purging of each monitoring well, temperature, dissolved oxygen, reduction/ oxidation (redox) potential, conductivity, and pH were monitored and recorded on field forms in average intervals of 5 minutes. Due to equipment issues turbidity readings were not taken during well purging for this sampling round, but water clarity was noted on the field logs. With low-flow techniques and careful placement of the bladder pump for those monitoring wells where it was used, turbidity was not an issue by the time purging was complete.

The groundwater field parameters were measured with a YSI Model 556 MPS-10 multi-parameter unit equipped with a flow-through cell. All equipment was calibrated prior to use in the field. The goal was to obtain three consecutive readings of the field parameters within the following ranges:

- ±1.0 degree centigrade (°C) for temperature
- ±10 percent (%) for dissolved oxygen
- ±10 millivolts (mV) for redox potential
- ±3% for conductivity
- ±0.1 for pH

The final stabilized readings prior to sample collection for each of the monitoring wells are provided in Table 1.

Groundwater purged from wells sampled with the bladder pump was initially turbid but cleared with low-flow purging. Groundwater from OW-21 and OW-22, installed in the closed municipal landfill, and OW-19, downgradient of the landfill, was odorous. Samples were shipped on ice to TestAmerica Laboratories, North Canton, Ohio on March 30, 2018 for overnight delivery. This photograph shows the clarity of water in the flow-through cell during sampling of OW-22.

Clear water during purging of monitoring well

3.0 Collection of Surface Water and Sediment Samples

Surface water and sediment samples were collected from two locations along Gold Creek, SED-1/SW-1 (downstream) and SED-2/SW-2 (upstream) (Figure 3). The results from the Gold Creek sampling program are provided in Section 5.0.

Gold Creek is adjacent to a road that is heavily traveled by trucks that haul sand and gravel from nearby quarries. During sampling, several trucks an hour passed, stirring up dust. Vegetation and soil were covered with fine dust, and on the road near the sample collection points, dust-laden rain water was observed to flow from the road down to Gold Creek, as shown in the photograph below. The sample team was concerned about the potential impact of dust and pollutants from the road on water and sediment quality in Gold Creek.

Drainage from quarry road to Gold Creek

3.1 Surface Water Sampling

Surface water samples from SW-1 and SW-2 were collected from Gold Creek at the established locations that have been sampled throughout the OU-2 monitoring period.

Samples were collected directly into the VOC sample vials. The sample bottles were labeled appropriately, placed in a cooler, and sent to the laboratory for analysis.

3.2 Sediment Sampling

Two sediment samples were collected from the established locations coinciding with SW-1 and SW-2 (Figure 3) and were designated SED-1 and SED-2. The samples were collected using pre-cleaned stainless-steel spatulas from approximately the upper six inches of submerged sediment near the edge of the creek.

4.0 Groundwater Results

This section describes the results of the March 2018 groundwater sampling event and presents a discussion of site-wide groundwater conditions.

4.1 Groundwater Elevations

The groundwater elevations for this sampling round are presented in Table 2. Associated groundwater elevation contours are shown in Figure 3.

The groundwater elevations in the wells were on the average 1.25 feet higher than measured in November 2016. The higher groundwater elevations are typical of what has been seen historically during the spring season. The direction and gradient of groundwater flow toward the southeast and Gold Creek were about the same. The same pattern was seen, with a few monitoring wells close to the hillside near former Lagoon 8 (OW-9, OW-10R, OW-15) having groundwater elevations between 438 feet msl and 460 msl; the groundwater elevations in the remaining monitoring wells were all between 430 and 433 feet msl. The gradient from OW-15 southwest of the former lagoons to OW-22 in the closed landfill was about 0.11 in March 2018. From OW-22 to OW-18, near Gold Creek, the gradient was essentially flat at 0.0002. The steeper gradient on the western side of the site is due to the depth to bedrock along the valley wall. As the depth to bedrock increases towards the valley floor, the thickness of the alluvial fill increases and the groundwater gradient flattens.

4.2 Summary of Groundwater Quality Results

VOCs detected in groundwater analysis in the March 2018 sampling event are presented in Table 3. Laboratory analytical reports, including marked Form Is from the data validation process, are included in Appendix A in hard copy. An electronic copy of the entire data package is also provided. Historical data of detected organic compounds have been combined with the most recent data and are presented in Table B-1, Appendix B.

Six VOCs were detected in various monitoring wells during this sampling event, all of which exceeded regulatory standards or guidelines in one or more wells. Results were compared to New York State Department of Environmental Conservation Standards or Guidance Values (NYSDEC SGVs) and U.S. EPA Maximum Contaminant Levels

(MCLs) for drinking water. Regulatory exceedances of VOCs in groundwater are reported in Table 4 and plotted in Figure 4.

VOC concentrations in monitoring wells in March 2018 were generally comparable to the November 2016 results, and within ranges previously observed. In the remainder of this section, specific groundwater trends and conditions are discussed in greater detail, including:

- Concentration trends for chlorinated VOCs
- Concentration trends for benzene
- Achievement of regulatory limits in monitoring wells
- MNA trends

4.3 Trends for Chlorinated VOCs

The chlorinated VOCs 1,2-dichloroethene, trichloroethene, and tetrachloroethene are the predominant constituents on the eastern side of the site in OW-2, OW-5, and OW-6 (Table 3; Figure 4). Trichloroethene and/or tetrachloroethene exceed federal Maximum Contaminant Levels (MCLs) in each of these monitoring wells, and 1,2-dichloroethene exceeds the New York State Standard or Guidance Value (NYSDEC SGV).

Compared to OW-2, OW-5, and OW-6, groundwater on the western side (OW-10R, OW-13R, OW-18, OW-19, OW-21, OW-22) typically has lower redox and dissolved oxygen (is more reduced) and is more amenable to reductive dechlorination. In these wells, chlorinated VOCs in general showed a downward trend over time once OU-1 actions were complete. For example, while the concentration of chlorinated VOCs was higher in OW-13/OW-13R in 1999-2000 compared to OW-5 (Figure 5), favorable geo-chemical conditions resulted in a rapid and smooth decline. Chlorinated VOCs have not exceeded criteria at OW-13/13R since 2004 and have not been detected since 2014. In OW-5, conditions for degradation have been somewhat less favorable and the decline has been slower and more variable (Figure 5).

In OW-2 and OW-6, the rate of decline in chlorinated VOC concentrations has been slowed by unfavorable geochemical conditions. Concentrations appeared to peak in the years following OU-1 actions, and since 2006 concentrations have been flat to gradually declining (Figure 6).

Chlorobenzene exceeded the NYSDEC SGV of 5 ug/L but not the MCL of 100 ug/L in groundwater during this sampling round, in OW-18, OW-19, and OW-22. The suspected main source of chlorobenzene in groundwater is the historic closed municipal landfill located between OW-10R to the northwest and OW-18 and OW-19 to the south (Figures 2 and 4). OW-22 is midway in between OW-10R and the downgradient monitoring wells. The closed landfill is suspected as the source because of the consistently higher concentrations within or downgradient of the landfill compared to upgradient concentrations, as shown below:

Position Relative to Closed Landfill	Monitoring Well	Chlorobenzene Average ug/L 2008-2018
Upgradient	OW-10R	2.4
Downgradient	OW-18	11.7
Downgradient	OW-19	9.6
Within	OW-22	7.2

4.4 Benzene Concentration Trends

As was described in detail in the *Supporting Documentation for Five-Year Review* (Cardinal Resources, 2005), different VOCs have predominated in different areas downgradient of the former lagoons. Benzene has predominated in several monitoring wells in the southwestern areas of the Site, with historically the highest concentrations observed in OW-10R and OW-13R; the benzene concentrations in these wells has declined 45%, when comparing 2006-2009 average results with 2010-2018 average results. In March 2018 the benzene concentrations in these wells were 1.2 ug/L and 3.4 ug/L, respectively. In March 2018, the highest benzene concentration was measured in groundwater at OW-22, at 5.6 micrograms per liter (ug/L), slightly higher than the U.S. EPA MCL of 5 ug/L; the MCL was not exceeded in any other monitoring well. Benzene exceeded the SGV of 1 ug/L in OW-10R, OW-13R, OW-18, OW-19, and OW-22. In March 2018 benzene was not detected in OW-21, for the first time since monitoring began in 1994.

Benzene has exhibited an overall downward trend in OW-13R and OW-22, individual wells with historically high concentrations, as shown in Figure 7. This depiction shows how the benzene concentration in OW-13/13R has declined by more than two orders of magnitude between 2000 and 2018, from more than 600 ug/L to 3.4 ug/L in March 2018. The decline in the benzene concentration in the former source area reflects both degradation and dispersion of benzene within the plume to the south and west toward downgradient OW-22. Benzene in OW-22 has declined by almost an order of magnitude since OU-1 actions were complete, from 46 ug/l in 1999 to 5.6 ug/L in March 2018.

4.5 Achievement of MCLs and SGVs

Since completion of OU-1 remediation in 1999, many of the MCLs and state groundwater SGVs had been met in groundwater wells downgradient of the former lagoons. From 1999 through 2010 there was a substantial reduction in MCL and SGV exceedances; since 2010, conditions have remained about the same, indicating stability, as shown in the chart below:

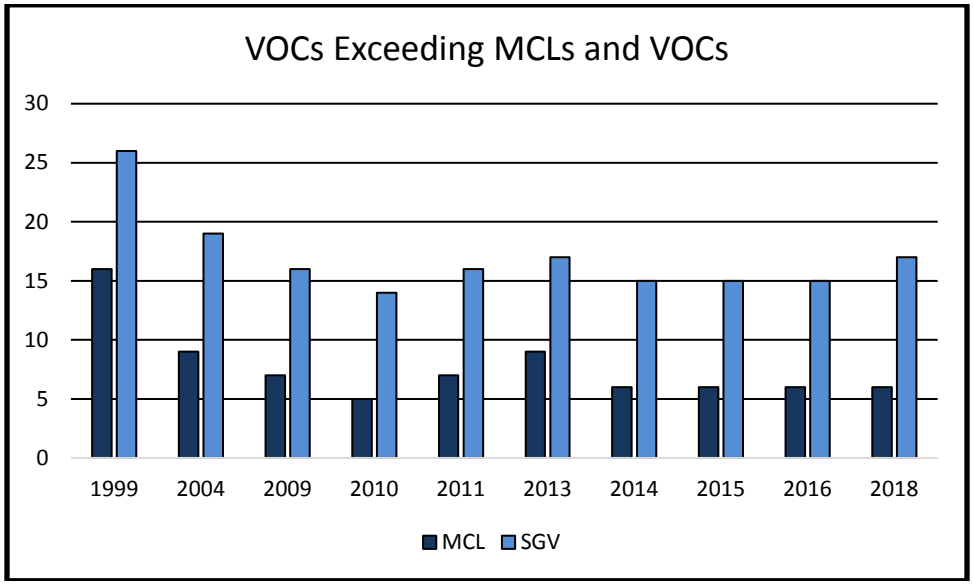

Table 4 summarizes MCL and SGV exceedances through the current sampling round. In 2018, 6 MCLs and 17 SGVs were exceeded within the monitoring network. Acetone, a common laboratory artifact, was reported in OW-6 at a concentration (62 ug/L) slightly above the NYSDEC guidance value of 50 ug/L. There is no NYSDEC standard or MCL for acetone. This guidance exceedance is “counted” as an exceedance in Table 4, on

Figure 4, and in the chart above, although it is likely lab-related. It has not been reported in OW-6 since 2000 (Table B-1).

4.6 Monitored Natural Attenuation Trends

The number of MNA parameters has been reduced with U.S. EPA approval for this and future sampling rounds. Field parameters shown in Table 1 include dissolved oxygen

and redox. Reduced conditions as indicated by low dissolved oxygen and redox are favorable for reductive dechlorination of chlorinated VOCs.

The patterns seen in March 2018 are consistent with the observations presented previously, with the areas predicted to be most amenable to degradation of chlorinated VOCs in monitoring wells to the south and west (OW-10R, OW-13R, OW-18, OW-19, OW-21, OW-22). In these wells:

- Low dissolved oxygen and/or redox potential indicating reduced conditions were found; and
- Chlorinated VOCs cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene were not present or present in low concentrations.

By comparison, in OW-2 and OW-6, dissolved oxygen and redox were relatively high, and chlorinated VOCs were found.

5.0 Gold Creek Sampling Results

Refer to Section 3.0 for a description of the methods for surface water and sediment sample collection along the creek. Table 5 provides the results for VOCs detected in surface water and sediment samples collected from two locations along Gold Creek (Figure 3).

The results are arranged in the table from the downstream sampling location (SED-1/SW-1) to the upstream location (SED-2/SW-2). These are the established sampling locations that have been used throughout the OU-2 monitoring program.

5.1 Surface Water Results

VOCs were not detected in surface water samples (Table 5). Historic SW-1 and SW-2 sample results are provided in Appendix B, Table B-2.

5.2 Sediment Results

Acetone and methylene chloride were detected in the upstream and downstream sediment samples SED-1 and SED-2 in estimated concentrations (Table 5). Historic SED-1 and SED-2 sample results are provided in Appendix B, Table B-3. Acetone and methylene chloride are common laboratory artifacts. Currently neither the National Oceanic and Atmospheric Administration (2008) nor NYSDEC Division of Water (2013) has guidance values for acetone or methylene chloride in freshwater sediments.

5.3 Discussion

The results for the two sampling locations along Gold Creek are consistent with past observations for SED-1/SW-1 and SED-2/SW-2. VOCs were not detected in surface water. Acetone and methylene chloride, common laboratory contaminants, were detected in low concentrations in the sediment samples but are not considered Site-related VOCs. Based on these results, there is no evidence that ecological conditions in Gold Creek are being adversely affected by the Site.

6.0 Data Quality Review

Data quality review was performed on the analytical data package to assure that quality and usability requirements were met.

6.1 Introduction

A Tier II data quality review of the sample data package was completed using U.S. EPA guidelines. The Tier II data evaluation consisted of a review of data package completeness and a quality control (QC) review, as summarized in the QC forms provided by the laboratory, covering:

- Signed transmittal page
- Data package narrative
- Sample transmittal documentation
- Reagent traceability summary
- Standard VOC QC forms for:
  - System monitoring compound (surrogate recovery)
  - Matrix spike/matrix spike duplicate (MS/MSD) recovery
  - Laboratory control samples
  - Method blank summary
  - Instrument performance check
  - Internal standard summary and retention time (RT) summary
  - Initial calibration data
  - Continuing calibration data
- Form Is and raw data for field samples, blanks, laboratory control samples, MS/MSDs
- Copies of logbook pages documenting sample preparation, extract transfer, instruments, and sample tracking
- Holding times
- Form Is and raw data for field and QC samples
- Field duplicates and field, trip, and equipment rinsate blanks

A checklist documenting the review of the data package is provided in Appendix C.

6.2 Results of Data Review

The hand-marked, qualified Form Is are provided in Appendix A with the laboratory reports. Results in Table 3, Table 5, and Tables B-1, B-2, and B-3 reflect the qualified data. The data qualifiers for this analytical package are:

- J: Estimated result
- UJ: The analyte was not detected above the reporting limit, but the reporting limit is approximate.

The data package was complete and appropriately organized, and all relevant supporting information was provided.

6.2.1 Field QC Samples

Sample Collection Blanks: Four blanks related to sample collection (different from the method blanks conducted by the laboratory for internal QA/QC) were analyzed as part of this sampling round, and all were nondetectable at the laboratory reporting limits:

- Field Blanks (FB): Two field blanks were collected. Field blanks are prepared at the sampling site by pouring deionized water provided by the laboratory into laboratory-prepared VOA (volatile organic analyte) bottles, shipping the bottles with field samples, and having the samples analyzed along with field samples. These blanks are used as an indicator of airborne or other type of contamination occurring during the sampling process that could compromise sample quality.

- Trip Blank (TB): One trip blank was shipped with the samples. Trip blanks are prepared in the laboratory by pouring deionized water into laboratory-prepared VOA bottles. The filled containers are shipped with the sample containers to the site, remain in the sample coolers throughout the sampling process, are shipped back to the laboratory along with the field samples, and are analyzed along with the field samples. A trip blank is used as an indicator of airborne or other type of contamination that could occur during the shipping process to compromise sample quality.

- Rinsate Pump Blank: One pump rinsate blank was collected. This blank was collected to check cleaning methods for the portable bladder pump used to sample several of the monitoring wells, to verify that sampling equipment and methods do not compromise sample quality. The pump was cleaned initially and after sampling four of the wells. After sampling OW-19 and before sampling OW-13R, deionized water was poured through and onto the pump body, then collected in VOA bottles. The samples were then stored, shipped, and analyzed along with the other field samples.

Field Duplicate: Field duplicates were collected for groundwater (OW-5 and OW-5 DUP), surface water (SW-1 and SW-1 DUP), and sediment (SED-2 and SED-2 DUP).

The field duplicate is checked for relative percent difference (RPD) as:

$$\frac{|A - B| \times 100}{\frac{1}{2}(A + B)},$$ where A is sample value and B is duplicate value.

The RPD for aqueous samples is to be within 30%, and within 50% for nonaqueous samples. For OW-5/OW-5 DUP analysis (three detections), the maximum RPD was 2.4%, with no qualifications. There were no detections for SW-1. For SED-2, the methylene chloride duplicate results were within 33% and met the criterion. Acetone was detected in one SED-2 sample but not the other; the results were qualified as J/UJ.

Field MS/MSD Samples: Field matrix spike/matrix spike duplicate (MS/MSD) samples were collected for groundwater (OW-6 MS/MSD), surface water (SW-2 MS/MSD), and sediment (SED-1 MS/MSD). With a matrix spike, a compound of known concentration is added to the sample, and the sample is analyzed. The detected concentration is compared to the amount added. This procedure provides an indication about how the sample matrix (physical/chemical properties inherent to the sample) could affect the ability to detect target compounds. The OW-6 acetone result was qualified as estimated (J) due to low recovery in the MS/MSD. In SW-2, nondetectable acetone and methylene chloride were qualified as UJ because of RPDs out of limits. SED-1 results met criteria and were not qualified.

6.2.2 Other Data Qualification

Other J and UJ qualifiers were placed on some results for some samples as part of the data validation process, due to deviations in surrogate recovery, laboratory control sample recovery, and internal standards performance. The review process and qualified data are summarized in the table in Appendix C. The qualifications did not affect the usability of the data.

6.2.3 Data Quality and Usability

Although there were some J (estimated) and UJ (nondetectable with an estimated reporting limit) qualifications for a limited amount of data, the analytical results are usable and of acceptable quality; no results have been rejected. When required by standard protocols, the laboratory re-analyzed results that did not meet criteria initially, as described in the laboratory report case narrative.

7.0 Summary and Conclusions

The results of the 2018 sampling program for the Carroll and Dubies Site show:

- Groundwater elevations were higher on average by 1.25 feet, compared to the November 2016 groundwater elevations. Higher groundwater elevations are typical of spring conditions. Sampling has been conducted every fifth quarter in recent years to evaluate conditions throughout the hydrologic cycle. No clear link has been observed between the concentrations of VOCs in groundwater and the season and/or groundwater elevations.
- Benzene was detected in five monitoring wells (OW-10R, OW-13R, OW-18, OW-19, and OW-22), and exceeded the U.S. EPA MCL of 5 ug/L only one well, OW-22, at 5.6 ug/L. The NYSDEC SGV of 1 ug/L for benzene was exceeded in the five wells where detected. In March 2018 benzene was not detected in OW-21, for the first time since monitoring began in 1994. The benzene concentration trends in OW-10R and OW-13R, where concentrations were once highest, show continued slow decline. The benzene concentrations in these wells have declined 45%, when comparing 2006-2009 average results with 2010-2018 average results.
- Total chlorinated VOC (tetrachloroethene, trichloroethene, and 1,2-dichloroethene) concentrations in OW-2, OW-5, and OW-6 continue to exceed MCLs and/or SGVs, with relatively flat but stable concentration trends over the past ten years.
- Upstream and downstream surface water and sediment samples were collected during this sampling round. VOCs were nondetectable in surface water. Low levels of VOCs commonly seen as laboratory artifacts (acetone; methylene chloride) were detected in sediment samples. Currently neither the National Oceanic and Atmospheric Administration (2008) nor NYSDEC Division of Water (2013) has guidance values for acetone or methylene chloride in freshwater sediments.

Groundwater monitoring results since completion of OU1 actions in 1999 demonstrate that natural attenuation has degraded VOCs, and the rates of degradation are slow to flat as the concentrations decline. This is the expected result, as the declining contaminant concentrations reduce the driving force for the attenuation processes. As the rate of attenuation continues to slow, it may be years before MCLs and SGVs are met in all monitoring wells throughout the plume, but Site conditions will continue to be stable. With stable to declining groundwater concentrations and institutional controls in place, conditions will continue to be protective of human health and the environment, with no exposure pathways that could result in unacceptable risks.

The OU2 groundwater remediation ROD, written in 1996, stated that natural attenuation of organic contaminants should achieve treatment of groundwater “to below federal drinking water and state groundwater standards through naturally occurring removal processes” and that “groundwater modeling estimated that contaminants would attenuate to these standards within five years of completion of the remedy selected for the lagoons.” The pre-1996 modeling results referenced in the OU2 ROD have not proven out, however, much more is known about natural attenuation trends and benefits than 20 years ago.

Gold Creek surface water and sediment samples continue to be sampled as part of OU2 and no impacts have been detected that are attributable to the Site, but there are other potential impacts to this surface water body. There is a gravel road adjacent to the sampling locations that is increasingly traveled by trucks that haul sand and gravel from nearby quarries. During sampling, several trucks an hour passed, stirring up dust. Vegetation and soil were covered with fine dust, and on the road near the sample collection points, dust-laden rain water was observed to flow from the road down to Gold Creek. The value of continued surface water and sediment sample collection as part of OU2 should be re-considered for the future.

8.0 References

Cardinal Resources Inc., December 2016, *November 2016 Sampling Report, Carroll and Dubies Superfund Site, Town of Deerpark, Orange County, New York,* Prepared for Kolmar Laboratories, Inc. and Wickhen Products, Inc.

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Tables

Table 1
Groundwater Field Stabilization Parameters
March 2018
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Well ID	**Date**	**Temperature** (°C)	**Dissolved Oxygen** (mg/L)	**Redox** (mV)	**Conductivity** (uS/cm)	**pH** (standard units)
OW-2	03/28/2018	10.34	6.46	55.6	112	5.70
OW-5	03/28/2018	10.61	2.04	105.3	174	5.77
OW-6	03/28/2018	10.40	7.77	81.5	88	5.71
OW-10R**	03/27/2018	9.98	0.96	0.0	322	6.21
OW-13R*	03/28/2018	11.13	0.58	56.5	461	6.39
OW-18*	03/27/2018	9.75	1.12	-30.7	514	6.04
OW-19*	03/27/2018	8.45	2.08	-32.5	503	6.03
OW-21	03/27/2018	11.96	0.69	-1.7	389	6.22
OW-22	03/28/2018	11.47	1.24	-37.4	515	6.12
OW-24*	03/27/2018	10.61	4.13	72.0	189	7.07

Notes:

mg/L = milligrams per liter

mV = milliVolts

uS/cm = microSiemens per centimeter

* Sampled with bladder pump

**OW-10R pumped dry in 10 minutes; the pump was shut off and the water level was allowed to recover.

Table 2
Groundwater Elevation Data[1]
March 27, 2018
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Well No.	Top of Casing Elevation	Screened Interval	Depth to Groundwater	Groundwater Elevation
MW-4	470.13	35.3 - 50.3	37.95	432.18
OW-2	472.33	30.0 - 47.0	40.20	432.13
OW-3	472.70	30.0 - 46.5	Not Measured	Not Measured
OW-4	473.33	26.5 - 37.5	34.78	438.55
OW-5	459.85	25.5 - 45.5	27.82	432.03
OW-6	464.40	31.4 - 51.4	32.33	432.07
OW-8	464.63	34.6 - 54.6	32.40	432.23
OW-9	472.91	25.3 - 35.3	29.07	443.84
OW-10R	469.27	29.0 - 39.0	28.30	440.97
OW-13R	457.69	25.0 - 35.0	25.81	431.88
OW-15	472.05	22.0 - 32.0	12.10	459.95
OW-16	453.90	18.0 - 28.0	22.49	431.41
OW-17	447.18	11.0 - 21.0	15.89	431.29
OW-18	444.57	11.0 - 21.0	13.40	431.17
OW-19	438.69	5.0 - 15.0	8.01	430.68
OW-21	467.46	37.1 - 47.1	36.20	431.26
OW-22	467.10	38.0 - 48.0	35.82	431.28
OW-23	444.73	29.0 - 39.0	13.65	431.08
OW-24	446.77	14.4 - 24.4	15.71	431.06
OW-25	452.47	20.0 - 30.0	20.90	431.57

[1]Data reported in feet; elevations relative - mean sea level; 1988 National Geodetic Vertical Datum.

[2]Top of casing elevations surveyed by Maser Consulting P.A.

Table 3

Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)

March 2018

Carroll and Dubies Superfund Site

Town of Deerpark, Orange County, New York

Compound	NYSDEC	U.S. EPA	OW-2	OW-5	OW-5-DUP	OW-6	OW-10R	OW-13R
	SGV	MCL	03/28/18	03/28/18	03/28/18	03/28/18	03/27/18	03/28/18
Acetone	50 (G)	NE	25 U	10 U	10 U	**62 J**	10 U	10 U
Benzene	1 (S)	5	2.5 U	1.0 U	1.0 U	2.0 U	**1.2**	**3.4**
Chlorobenzene	5 (S)*	100	2.5 U	1.0 U	1.0 U	2.0 U	**2.6**	1.0 U
Cis-1,2-Dichloroethene	5 (S)*	70	**48**	**14**	**14**	**17**	1.0 U	1.0 U
Tetrachloroethene	5 (S)*	5	**89**	**18**	**18**	**47**	1.0 U	1.0 U
Trichloroethene	5 (S)*	5	**11**	**4.2**	**4.3**	**9.1**	1.0 U	1.0 U

Compound	NYSDEC	U.S. EPA	OW-18	OW-19	OW-21	OW-22	OW-24
	SGV	MCL	03/27/18	03/27/18	03/27/18	03/28/18	03/28/18
Acetone	50 (G)	NE	10 U	10 U	10 U	10 U	10 U
Benzene	1 (S)	5	**4.5**	**1.6**	1.0 U	**5.6**	1.0 U
Chlorobenzene	5 (S)*	100	**14**	**9.8**	1.0 U	**7.2**	1.0 U
Cis-1,2-Dichloroethene	5 (S)*	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5 (S)*	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5 (S)*	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

TCL = Target Compound List

NYSDEC SGV = New York State Department of Environmental Conservation Standards (S) and Guidance (G) Values (V) for groundwater.

U.S. EPA MCL = United States Environmental Protection Agency Maximum Contaminant Level for drinking/groundwater.

UJ = Nondetectable at the reporting limit, but the reporting limit is approximate.

U = The analyte was analyzed for, but was not detected above the reported quantitation limit.

* = The principal organic contaminant (POC) standard for groundwater of 5 ug/L applies to this substance.

NE = Not established; no criteria specified

Red = **Concentrations detected above regulatory limit**

Blue = **Analyte detected at or below the regulatory limit, or analyte detected but no regulatory criteria specified**

Table 4

MCL and SGV Exceedances - 1999, 2004, and 2009 through 2018

Carroll and Dubies Superfund Site

Town of Deerpark, Orange County, New York

Well	Compound	MCL ug/L	SGV ug/L	1999		2004		Jul-09		Jul-10		Oct-11		Feb-13		Jun-14		Sep-15		Nov-16		Mar-18	
				MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV
OW-2	Benzene	5	1				X																
	Tetrachloroethene (PCE)	5	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Trichloroethene (TCE)	5	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	1,2-Dichloroethene (1,2-DCE)	70	5	X	X	X	X		X		X	X	X	X	X		X		X		X		X
OW-5	Tetrachloroethene (PCE)	5	5	X	X	X	X											X	X	X	X	X	X
	Trichloroethene (TCE)	5	5	X	X															X	X		
	1,2-Dichloroethene (1,2-DCE)	70	5		X		X										X		X		X		X
OW-6	Acetone	NE[3]	50																				X
	Tetrachloroethene (PCE)	5	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Trichloroethene (TCE)	5	5			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	1,2-Dichloroethene	70	5		X		X		X		X		X		X		X		X		X		X
OW-10R[1]	Benzene	5	1	X	X	X	X		X		X		X		X	Dry	Dry		X		X		X
	Chlorobenzene	100	5		X								X		X								
	Methylene chloride	5	5	X	X																		
	Toluene	1,000	5		X																		

Table 4

MCL and SGV Exceedances - 1999, 2004, and 2009 through 2018

Carroll and Dubies Superfund Site

Town of Deerpark, Orange County, New York

Well	Compound	MCL ug/L	SGV ug/L	1999		2004		Jul-09		Jul-10		Oct-11		Feb-13		Jun-14		Sep-15		Nov-16		Mar-18	
				MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV
OW-13 / OW-13R[2]	Benzene	5	1	X	X	X	X	X	X	X	X			X	X	X	X	X	X		X		X
	1,2-Dichloroethene (1,2-DCE)	70	5		X																		
	Methylene chloride	5	5	X	X																		
	Toluene	1,000	5		X																		
	Vinyl chloride	2	2	X	X	X	X																
OW-18	Benzene	5	1		X		X		X		X		X		X		X		X	X	X		X
	Chlorobenzene	100	5				X		X		X		X		X		X		X		X		X
	Xylenes (total)	10	5																				
OW-19	Benzene	5	1	X	X		X		X		X		X	X	X		X						X
	Chlorobenzene	100	5		X		X		X		X		X		X		X		X		X		X
	Chloroethane	NE[3]	5		X																		
	Vinyl chloride	2	2	X	X			X	X			X	X	X	X								
OW-21	Benzene	5	1	X	X		X		X		X		X		X		X		X		X		
OW-22	Benzene	5	1	X	X		X	X	X		X	X	X	X	X	X	X		X		X	X	X
	Chlorobenzene	100	5		X		X		X				X		X		X						X
	Vinyl chloride	2	2	X	X																		
Total				16	26	9	19	7	16	5	14	7	16	9	17	6	15	6	15	6	15	6	17

Notes:

[1]OW-10 was replaced with OW-10R in 2000. OW-10 was abandoned because it was within the OU1 construction area.

[2]OW-13R was installed in February 2006 to replace OW-13.

[3] NE = Not established

Table 5
Detected Volatile Organic Compounds
Surface Water and Sediment Sampling Locations in Gold Creek
March 2018
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Location	Sediment Guidance Value	SED-1 / SW-1 (Downstream)			SED-2 / SW-2 (Upstream)		
	Date	03/28/18	03/28/18	03/28/18	03/28/18	03/28/18	03/28/18
Constituent	**Sample**	**SED-1**	**SW-1**	**SW-1 DUP**	**SED-2**	**SED-2 DUP**	**SW-2**
	units	**ug/kg**	**ug/L**	**ug/L**	**ug/kg**	**ug/kg**	**ug/L**
Acetone	Not established(1)	**280 J**	10 U	10 U	**120 J**	140 UJ	10 UJ
Methylene Chloride	Not established(1)	**160 J**	1.0 U	1.0 U	**51 J**	**71 J**	1.0 U

Notes:

(1) Not established in NYSDEC Screening and Assessment of Contaminated Sediment document (draft) dated 01/24/2013 or in 2008 National Oceanic and Atmospheric Administration Screening Quick Reference Tables.

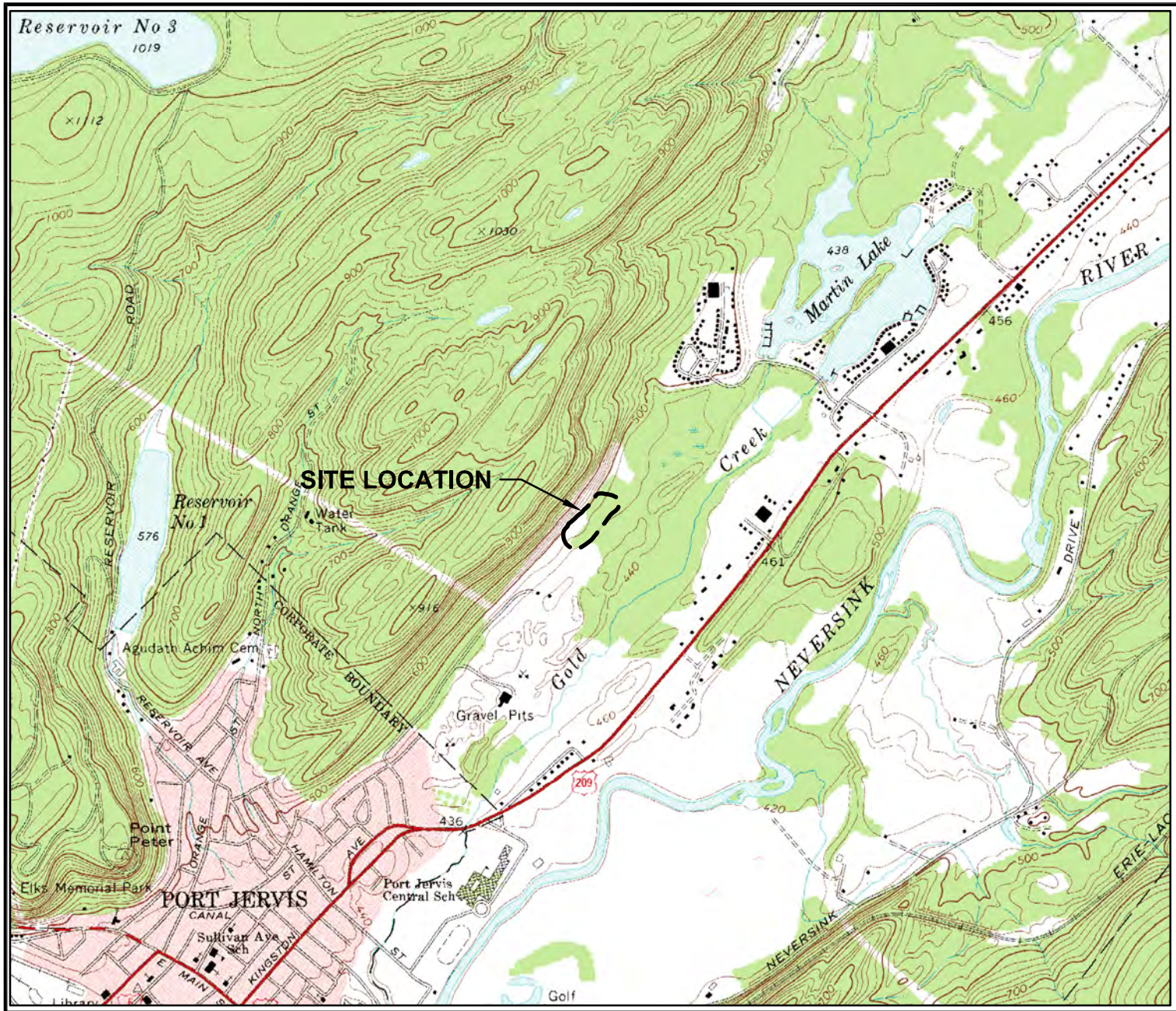
J = Estimated result.

U = The analyte was analyzed for but not detected above the quantitation limit.

UJ = Nondetectable at the reporting limit, but the reporting limit is approximate.

Blue = **Detected constituents**

Figures



2,000' 0 2,000'

SCALE IN FEET

LEGEND:

APPROXIMATE SITE BOUNDARY

SOURCE:

USGS TOPOGRAPHIC QUADRANGLE MAP
PORT JERVIS NORTH, NEW YORK, DATED 1991.

CARDINAL RESOURCES

CARROLL AND DUBIES SUPERFUND SITE
TOWN OF DEERPARK, ORANGE COUNTY, NEW YORK

105-0035

NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE
1							
0	ECM						

FIGURE 1

SITE LOCATION MAP

CADD FILE	9005	SCALE	AS NOTED	CURRENT DATE:	03-07-2005
DRAWING NO.	105-0035-0300-01			REVISION	0

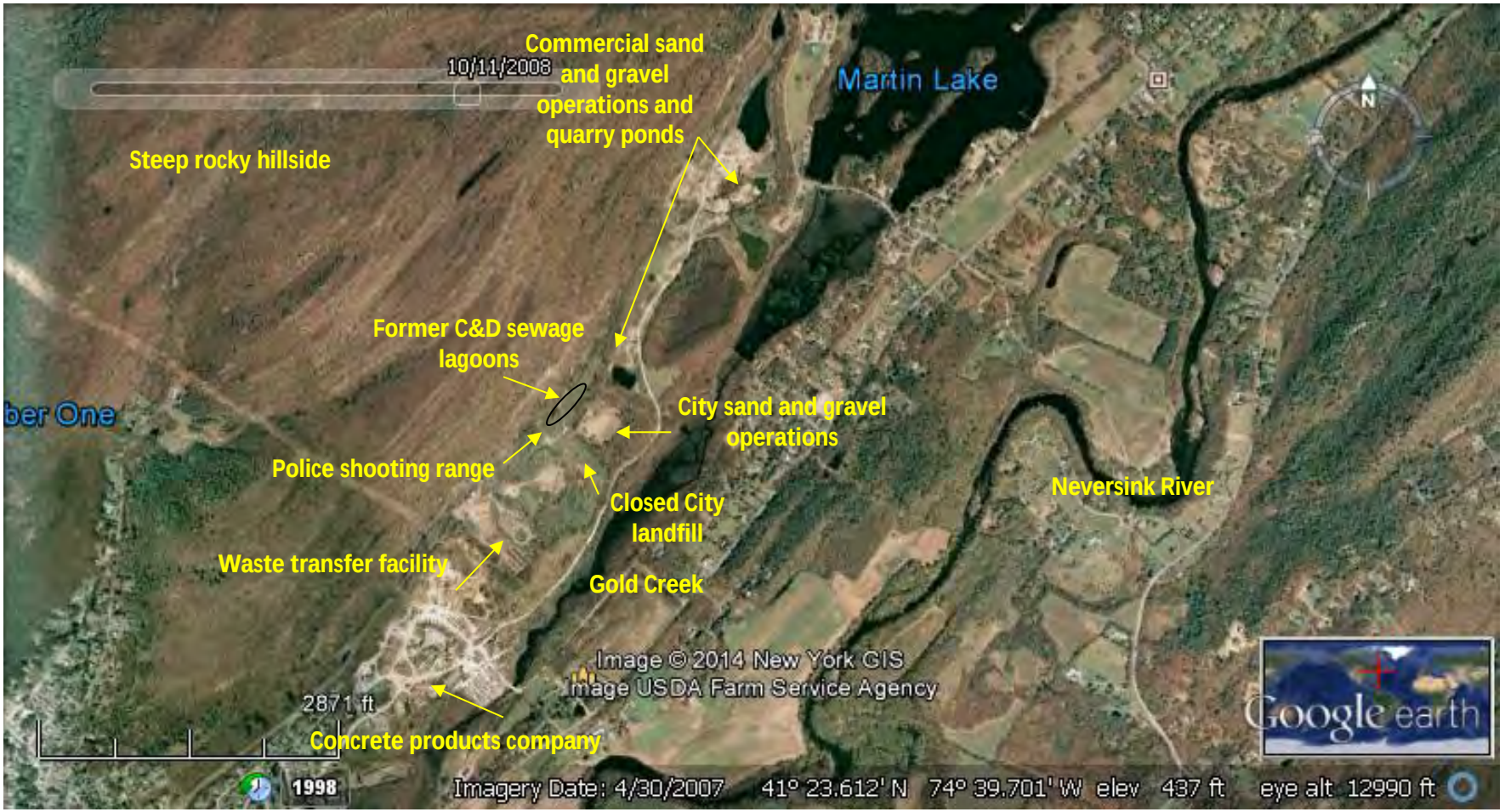
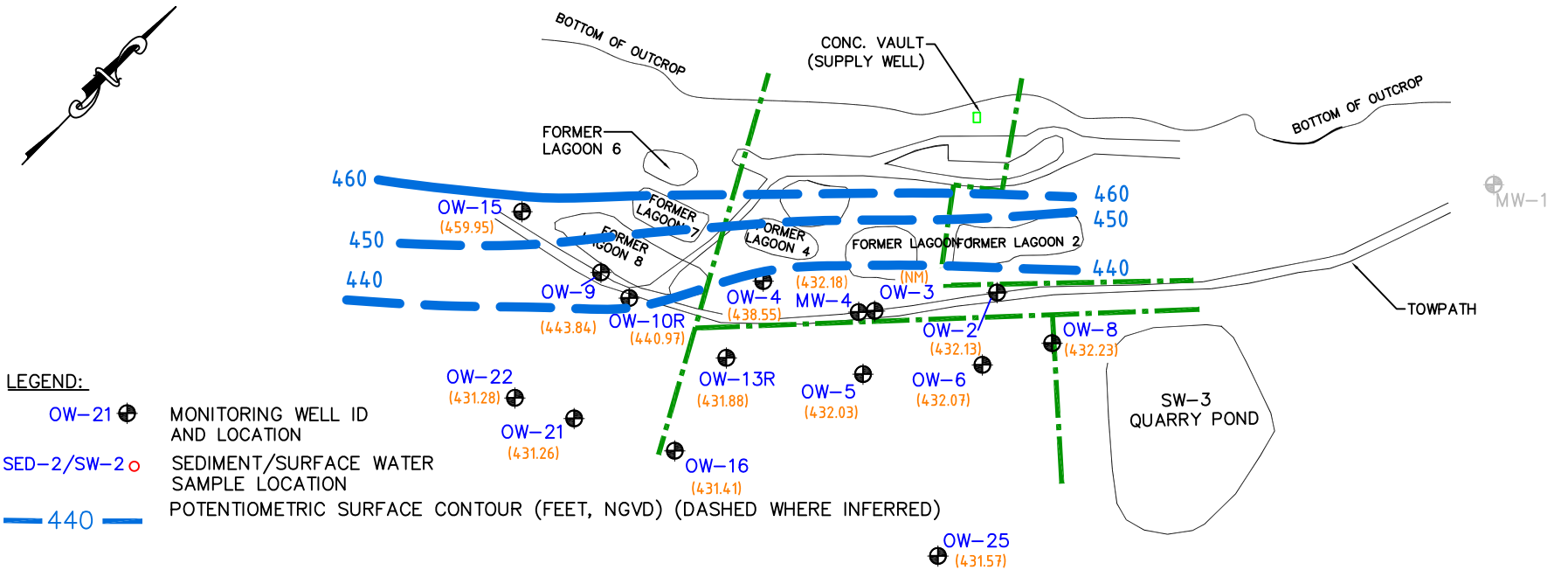


Figure 2
Land and Resource Use
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York



INFORMATION OF FACT:

1. THE MONITORING/RECOVERY WELLS AND LIMITED SITE LOCATION OF PHYSICAL FEATURES SHOWN HEREON ARE BASED ON A FIELD SURVEY MADE FOR PROPER ORIENTATION WITH A FULL PLAN BEING PREPARED BY SHIELD ENVIRONMENTAL ASSOCIATES, INC.
2. THE HORIZONTAL POSITION OF THE HEREIN SURVEYED "CARROLL AND DUBIES" SUPERFUND SITE IS BASED ON NEW YORK GEODETIC CONTROL MONUMENTS PID # LY2611 (LAUREL) AND PID # AB3870 (DIANNE).

ADJUSTED TO NAD 1983 WITHIN THE NEW YORK STATE PLANE COORDINATE SYSTEM.

NOTE:
1. OW-9 AND OW-10R WERE DRY IN JUNE 2014 AND ARE NOT USED IN CREATION OF THESE CONTOURS.
2. THE OUTLINES OF THE FORMER LAGOONS ARE BASED ON THE ACTUAL EXCAVATION.

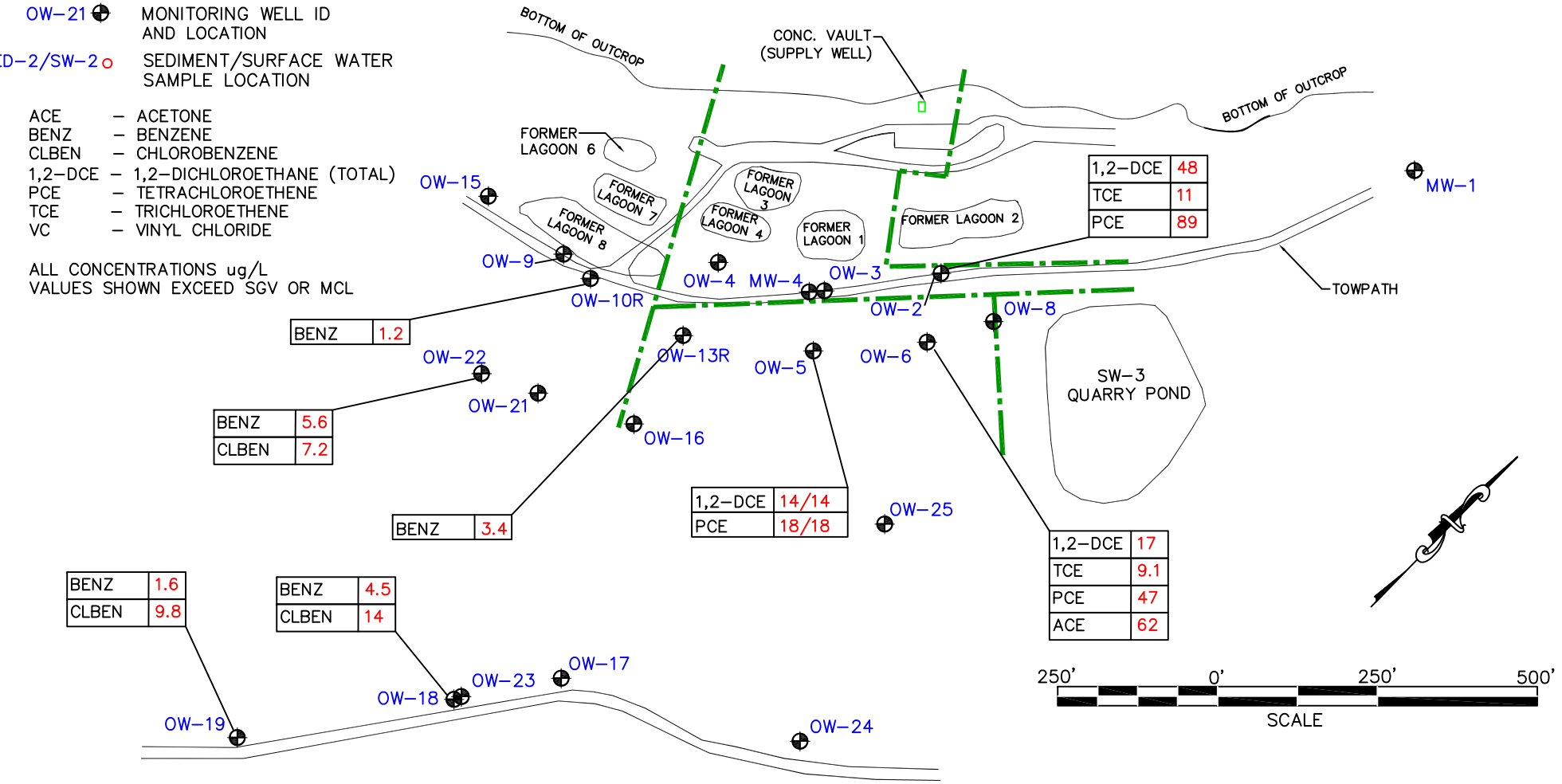
SOURCES: MASTER CONSULTING P.A. MONITORING WELL LOCATION PLAN. INDEXN). SU0009, MARCH 3, 1999.

CARROLL AND DUBIES SUPERFUND SITE
TOWN OF DEERPARK, ORANGE COUNTY, NEW YORK
104-0012

FIGURE 3
GROUNDWATER ELEVATION CONTOURS
MARCH 2018

CARDINAL

CURRENT DATE	03-27-2018	CB		DRAWING NO.	104-0012 - C&D OU2\MARCH 2018	SCALE	AS NOTED	REVISION	



INFORMATION OF FACT:

1. THE MONITORING/RECOVERY WELLS AND LIMITED SITE LOCATION OF PHYSICAL FEATURES SHOWN HEREON ARE BASED ON A FIELD SURVEY MADE FOR PROPER ORIENTATION WITH A FULL PLAN BEING PREPARED BY SHIELD ENVIRONMENTAL ASSOCIATES, INC.
2. THE HORIZONTAL POSITION OF THE HEREIN SURVEYED "CARROLL AND DUBIES" SUPERFUND SITE IS BASED ON NEW YORK GEODETIC CONTROL MONUMENTS PID # LY2611 (LAUREL) AND PID # AB3870 (DIANNE).

   ADJUSTED TO NAD 1983 WITHIN THE NEW YORK STATE PLANE COORDINATE SYSTEM.

NOTE: THE OUTLINES OF THE FORMER LAGOONS ARE BASED ON THE ACTUAL EXCAVATION.

SOURCES: MASTER CONSULTING P.A. MONITORING WELL LOCATION PLAN. INDEXN). SU0009, MARCH 3, 1999.

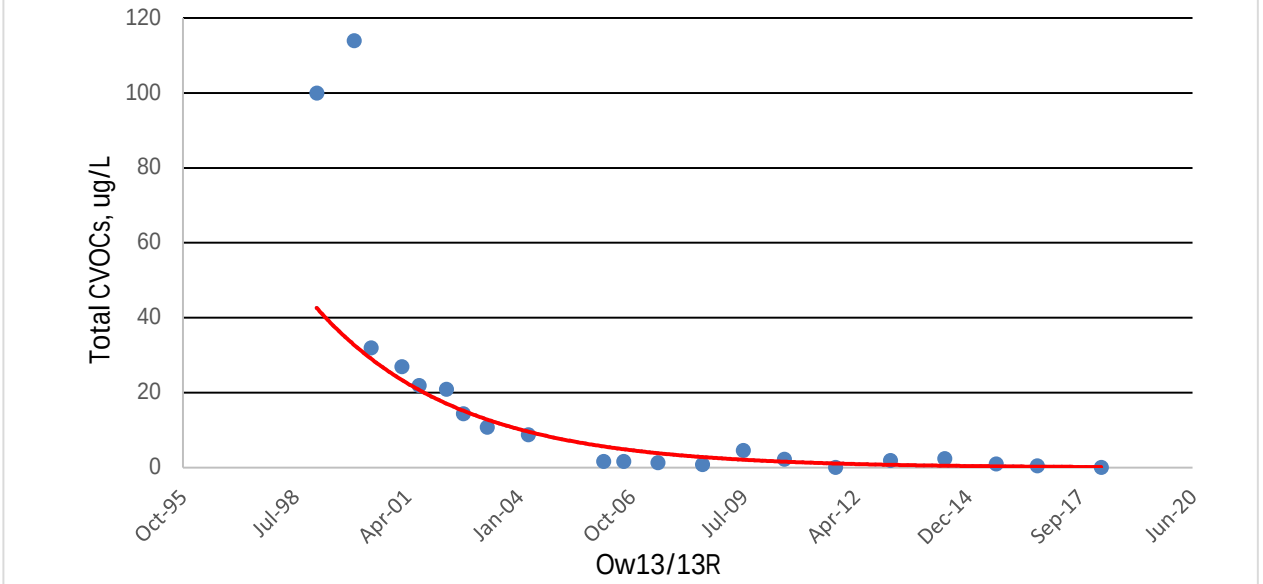
CARROLL AND DUBIES SUPERFUND SITE
TOWN OF DEERPARK, ORANGE COUNTY, NEW YORK
104-0012

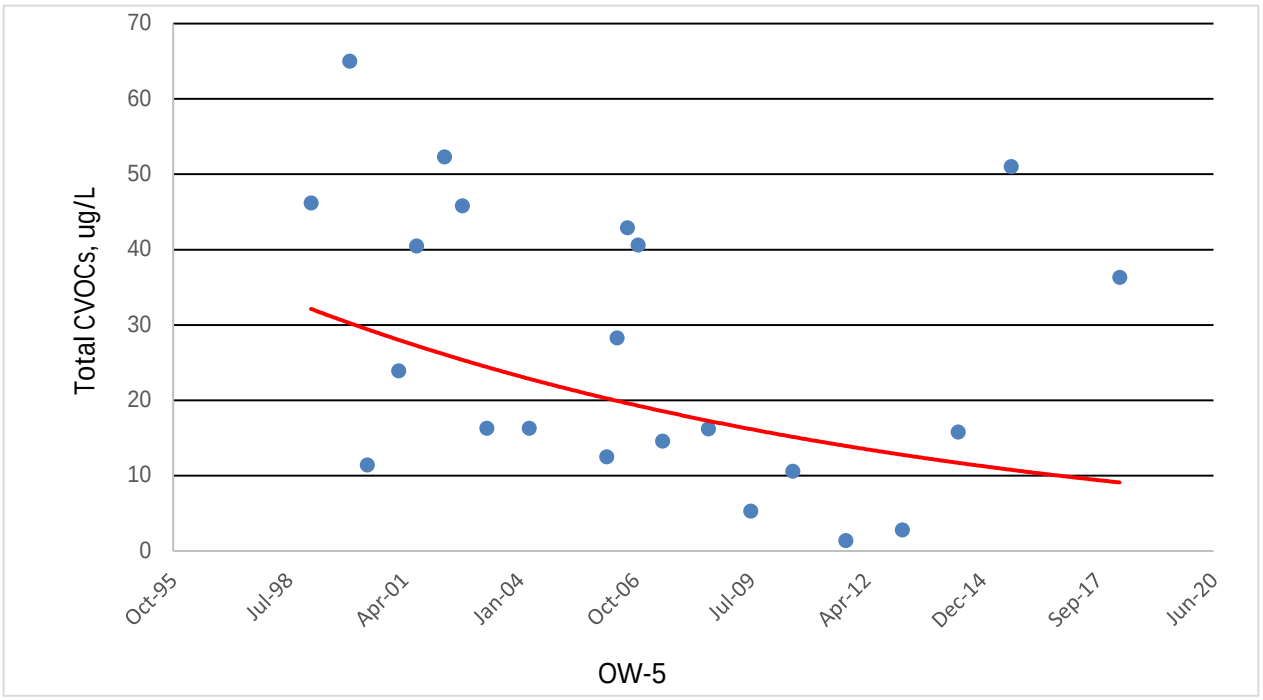
FIGURE 4
VOLATILE ORGANIC COMPOUND EXCEEDANCES IN GROUNDWATER
MARCH 2018

CARDINAL

CURRENT DATE	05/22/2018	CB		DRAWING NO.	104–0012–0300 MAR 18	SCALE	AS NOTED	REVISION	

Figure 5
Chlorinated VOC[1] Trends in OW-13/13R and OW-5
Pre-Excavation to March 2018

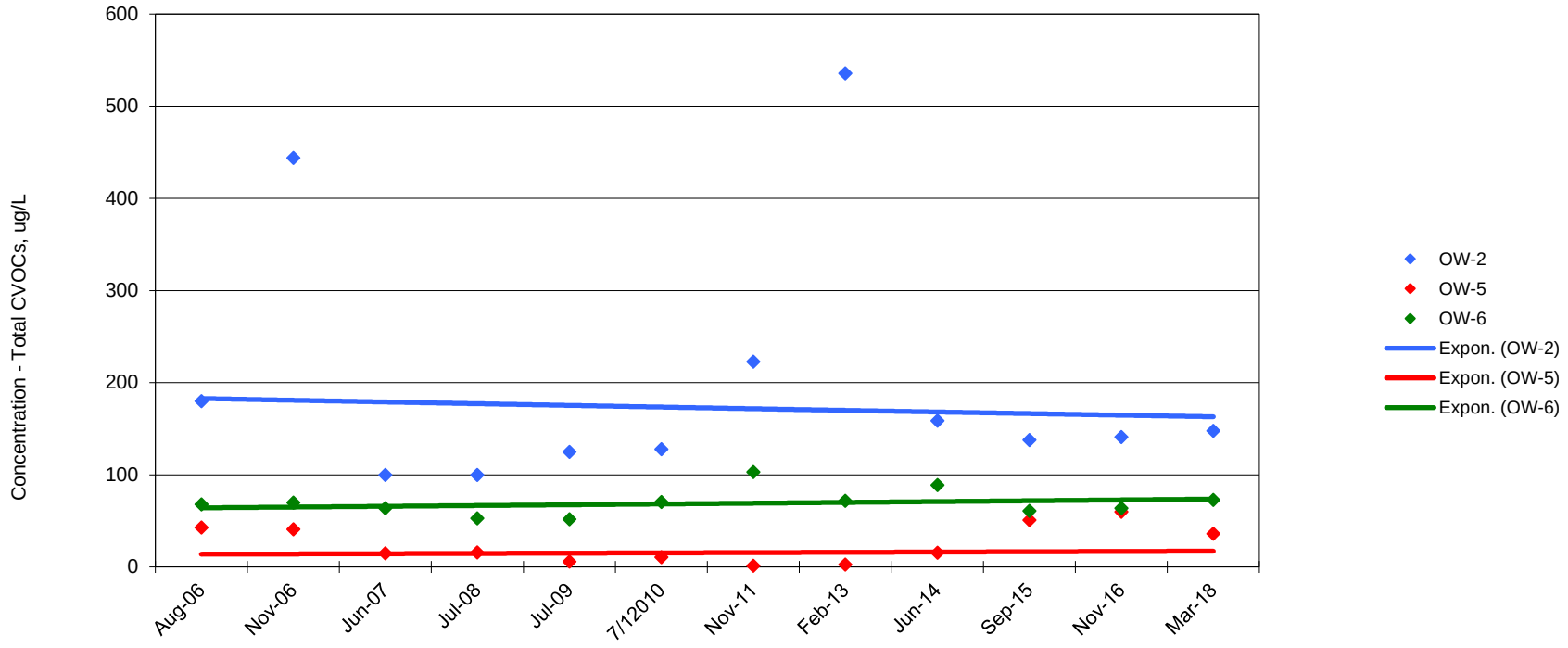




[1]Sum of vinyl chloride, 1,2-dichloroethene, trichloroethene, and tetrachloroethene.

C/Projects/104-0012March 2018/Figure 5 - CVOC Trends 1

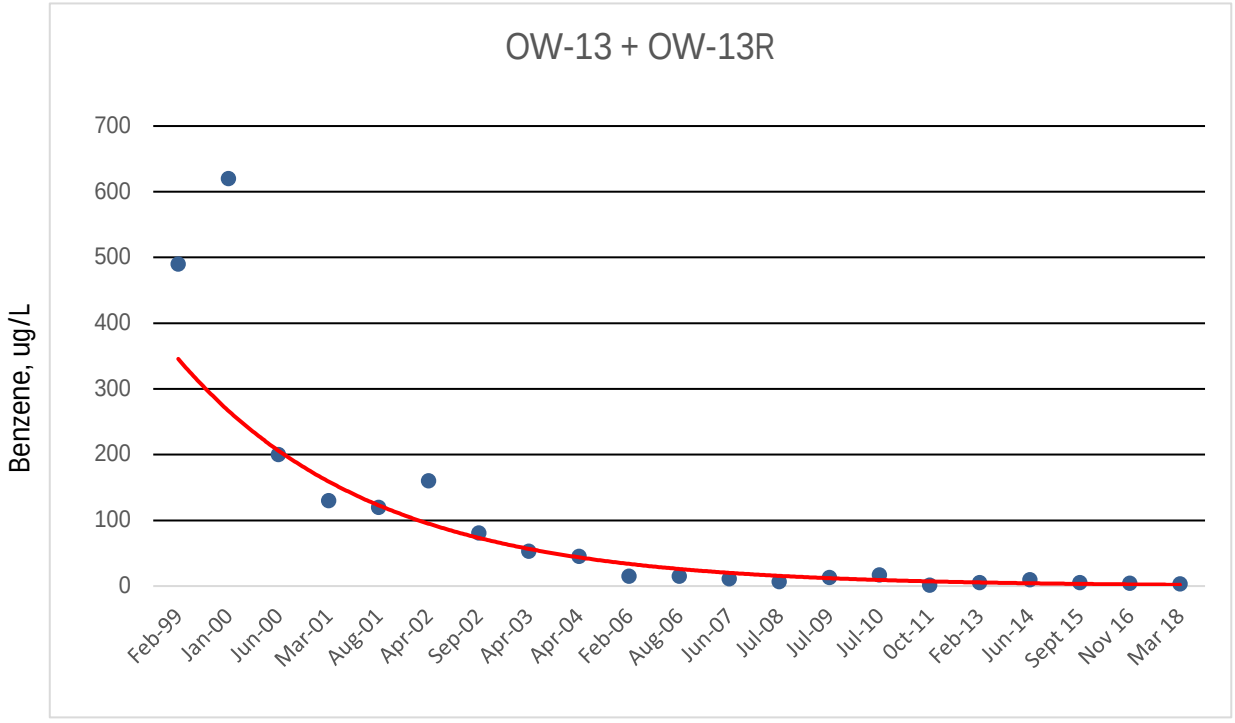
Figure 6
Chlorinated VOC[(1)] Trends in OW-2, OW-5, and OW-6
2006 - 2018

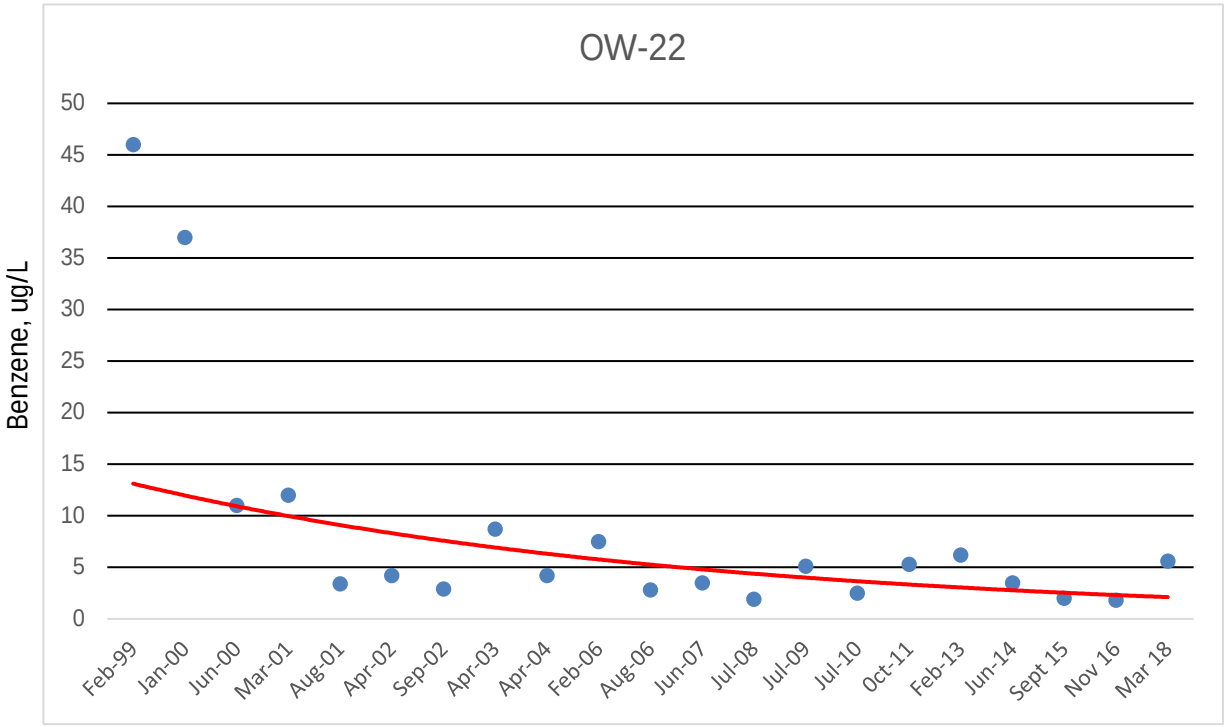


[(1)]Sum of vinyl chloride, 1,2-dichloroethene, trichloroethene, and tetrachloroethene

C: Projects/104-0012/March 2018/Figure 6-CVOC Trends 2

Figure 7
Benzene Concentration Trends in OW-13/OW-13R and OW-22
Pre-Excavation to March 2018





C:Projects/104-0012/March 2018/Figure 7 - Benzene Pre-exc to Current

Appendix A
Laboratory Report with Marked Form Is from Data Review

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-93471-1
Client Project/Site: C & D GW Sampling

For:
Cardinal Resources
4410 Broadway Blvd
Monroeville, Pennsylvania 15146

Attn: Barbara Jones

Kris Brooks

Authorized for release by:
4/12/2018 7:25:21 PM

Kris Brooks, Project Manager II
(330)966-9790
kris.brooks@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*	ISTD response or retention time outside acceptable limits
X	Surrogate is outside control limits
B	Compound was found in the blank and sample.
F2	MS/MSD RPD exceeds control limits
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 240-93471-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: Cardinal Resources

Project: C & D GW Sampling

Report Number: 240-93471-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 3/30/2018 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9º C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples SED-1 (240-93471-10), SED-2 (240-93471-12) and SED-2 DUP (240-93471-13) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were prepared and analyzed on 04/02/2018.

4-Bromofluorobenzene (Surr) failed the surrogate recovery criteria high for SED-1 (240-93471-10). 4-Bromofluorobenzene (Surr) and Toluene-d8 (Surr) failed the surrogate recovery criteria high for SED-2 (240-93471-12) and SED-2 DUP (240-93471-13). Refer to the QC report for details.

Methylene Chloride was detected in method blank MB 240-320926/5 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Internal standard (ISTD) response for the following samples were outside control limits: SED-2 (240-93471-12) and SED-2 DUP (240-93471-13). The samples were re-extracted and/or re-analyzed with concurring results, and the original set of data has been reported.

Job ID: 240-93471-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Surrogate recovery for the following samples were outside control limits: SED-2 (240-93471-12) and SED-2 DUP (240-93471-13). Re-extraction and/or re-analysis was performed with concurring results. The original analysis has been reported.

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

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples OW-24 (240-93471-1), OW-18 (240-93471-2), OW-19 (240-93471-3), RINSATE BLANK (240-93471-4), FIELD BLANK 1 (240-93471-5), OW-10R (240-93471-6), OW-21 (240-93471-7), SW-1 (240-93471-8), SW-1 DUP (240-93471-9), SW-2 (240-93471-11), OW-22 (240-93471-14), OW-2 (240-93471-15), FB-2 (240-93471-16), TRIP BLANK (240-93471-17), OW-6 (240-93471-18), OW-5 (240-93471-19), OW-5 DUP (240-93471-20) and OW-13R (240-93471-21) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 04/05/2018, 04/08/2018, 04/09/2018 and 04/10/2018.

1,1,2-Trichloro-1,2,2-trifluoroethane, Cyclohexane, Dichlorodifluoromethane and Methylcyclohexane failed the recovery criteria low for LCS 240-321646/4. Refer to the QC report for details.

Several analytes exceeded the RPD limit for the MSD of sample SW-2MSD (240-93471-11) in batch 240-321360. Acetone failed the recovery criteria low for the MS of sample OW-6MS (240-93471-18) in batch 240-321895. 2-Butanone (MEK) and Acetone failed the recovery criteria low for the MSD of sample OW-6MSD (240-93471-18) in batch 240-321895. Refer to the QC report for details.

Samples OW-2 (240-93471-15)[2.5X] and OW-6 (240-93471-18)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The method blank for preparation batch 240-320940 and analytical batch 240-320926 contained Methylene Chloride above the reporting limit (RL). This compound is considered a common laboratory contaminant. The associated sample(s) SED-1 (240-93471-10), SED-1 (240-93471-10[MS]), SED-1 (240-93471-10[MSD]), SED-2 (240-93471-12), SED-2 DUP (240-93471-13) and (MB 240-320926/5) was not re-extracted and/or re-analyzed because the concentration of the common lab contaminant in the method blank was less than 5 times the RL.

Internal standard (ISTD) response for the following sample was outside control limits: SED-1 (240-93471-10). The sample was re-extracted and/or re-analyzed with concurring results, and the second set of data has been reported OR both sets of data have been reported.

Surrogate recovery for the following sample was outside control limits: SED-1 (240-93471-10). Re-extraction and/or re-analysis was performed with concurring results. The second analysis has been reported.

The continuing calibration verification (CCV) associated with batch 321646 recovered above the upper control limit for Toluene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: OW-24 (240-93471-1), OW-18 (240-93471-2), OW-19 (240-93471-3), RINSATE BLANK (240-93471-4), FIELD BLANK 1 (240-93471-5), OW-10R (240-93471-6) and OW-21 (240-93471-7).

The laboratory control sample (LCS) for 321646 recovered outside control limits for multiple analyte(s). These analytes have been identified as poor performing analytes when analyzed using this method; therefore, re-extraction/re-analysis was not performed. OW-24 (240-93471-1), OW-18 (240-93471-2), OW-19 (240-93471-3), RINSATE BLANK (240-93471-4), FIELD BLANK 1 (240-93471-5), OW-10R (240-93471-6), OW-21 (240-93471-7) and (LCS 240-321646/4)

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

PERCENT SOLIDS

Samples SED-1 (240-93471-10), SED-2 (240-93471-12) and SED-2 DUP (240-93471-13) were analyzed for percent solids in accordance with ASTM Method D2216-80. The samples were analyzed on 04/02/2018.

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

Method Summary

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
Moisture	Percent Moisture	EPA	TAL CAN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-93471-1	OW-24	Water	03/27/18 12:05	03/30/18 09:20
240-93471-2	OW-18	Water	03/27/18 14:17	03/30/18 09:20
240-93471-3	OW-19	Water	03/27/18 15:20	03/30/18 09:20
240-93471-4	RINSATE BLANK	Water	03/27/18 15:25	03/30/18 09:20
240-93471-5	FIELD BLANK 1	Water	03/27/18 15:30	03/30/18 09:20
240-93471-6	OW-10R	Water	03/27/18 16:45	03/30/18 09:20
240-93471-7	OW-21	Water	03/27/18 17:25	03/30/18 09:20
240-93471-8	SW-1	Water	03/28/18 09:05	03/30/18 09:20
240-93471-9	SW-1 DUP	Water	03/28/18 09:05	03/30/18 09:20
240-93471-10	SED-1	Solid	03/28/18 09:10	03/30/18 09:20
240-93471-11	SW-2	Water	03/28/18 09:45	03/30/18 09:20
240-93471-12	SED-2	Solid	03/28/18 09:50	03/30/18 09:20
240-93471-13	SED-2 DUP	Solid	03/28/18 09:50	03/30/18 09:20
240-93471-14	OW-22	Water	03/28/18 11:10	03/30/18 09:20
240-93471-15	OW-2	Water	03/28/18 12:10	03/30/18 09:20
240-93471-16	FB-2	Water	03/28/18 13:15	03/30/18 09:20
240-93471-17	TRIP BLANK	Water	03/28/18 00:00	03/30/18 09:20
240-93471-18	OW-6	Water	03/28/18 14:00	03/30/18 09:20
240-93471-19	OW-5	Water	03/28/18 14:55	03/30/18 09:20
240-93471-20	OW-5 DUP	Water	03/28/18 14:55	03/30/18 09:20
240-93471-21	OW-13R	Water	03/28/18 16:00	03/30/18 09:20

Detection Summary

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-24 — Lab Sample ID: 240-93471-1

No Detections.

Client Sample ID: OW-18 — Lab Sample ID: 240-93471-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzene	4.5		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	14		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: OW-19 — Lab Sample ID: 240-93471-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzene	1.6		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	9.8		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: RINSATE BLANK — Lab Sample ID: 240-93471-4

No Detections.

Client Sample ID: FIELD BLANK 1 — Lab Sample ID: 240-93471-5

No Detections.

Client Sample ID: OW-10R — Lab Sample ID: 240-93471-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzene	1.2		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	2.6		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: OW-21 — Lab Sample ID: 240-93471-7

No Detections.

Client Sample ID: SW-1 — Lab Sample ID: 240-93471-8

No Detections.

Client Sample ID: SW-1 DUP — Lab Sample ID: 240-93471-9

No Detections.

Client Sample ID: SED-1 — Lab Sample ID: 240-93471-10

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	280		180		ug/Kg	1	☼	8260B	Total/NA
Methylene Chloride	160	B	45		ug/Kg	1	☼	8260B	Total/NA

Client Sample ID: SW-2 — Lab Sample ID: 240-93471-11

No Detections.

Client Sample ID: SED-2 — Lab Sample ID: 240-93471-12

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: SED-2 (Continued) — Lab Sample ID: 240-93471-12

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	120		120		ug/Kg	1	☼	8260B	Total/NA
Methylene Chloride	51	B	29		ug/Kg	1	☼	8260B	Total/NA

Client Sample ID: SED-2 DUP — Lab Sample ID: 240-93471-13

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	71	B	36		ug/Kg	1	☼	8260B	Total/NA

Client Sample ID: OW-22 — Lab Sample ID: 240-93471-14

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzene	5.6		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	7.2		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: OW-2 — Lab Sample ID: 240-93471-15

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	89		2.5		ug/L	2.5		8260B	Total/NA
Trichloroethene	11		2.5		ug/L	2.5		8260B	Total/NA
cis-1,2-Dichloroethene	48		2.5		ug/L	2.5		8260B	Total/NA

Client Sample ID: FB-2 — Lab Sample ID: 240-93471-16

No Detections.

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-93471-17

No Detections.

Client Sample ID: OW-6 — Lab Sample ID: 240-93471-18

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	62	F1	20		ug/L	2		8260B	Total/NA
Tetrachloroethene	47		2.0		ug/L	2		8260B	Total/NA
Trichloroethene	9.1		2.0		ug/L	2		8260B	Total/NA
cis-1,2-Dichloroethene	17		2.0		ug/L	2		8260B	Total/NA

Client Sample ID: OW-5 — Lab Sample ID: 240-93471-19

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	18		1.0		ug/L	1		8260B	Total/NA
Trichloroethene	4.2		1.0		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	14		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: OW-5 DUP — Lab Sample ID: 240-93471-20

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	18		1.0		ug/L	1		8260B	Total/NA
Trichloroethene	4.3		1.0		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	14		1.0		ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-13R

Lab Sample ID: 240-93471-21

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzene	3.4		1.0		ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-24
Date Collected: 03/27/18 12:05
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	ug/L			04/08/18 15:41	1
Benzene	ND		1.0	ug/L			04/08/18 15:41	1
Dichlorobromomethane	ND		1.0	ug/L			04/08/18 15:41	1
Bromoform	ND		1.0	ug/L			04/08/18 15:41	1
Bromomethane	ND		1.0	ug/L			04/08/18 15:41	1
2-Butanone (MEK)	ND		10	ug/L			04/08/18 15:41	1
Carbon disulfide	ND		1.0	ug/L			04/08/18 15:41	1
Carbon tetrachloride	ND		1.0	ug/L			04/08/18 15:41	1
Chlorobenzene	ND		1.0	ug/L			04/08/18 15:41	1
Chloroethane	ND		1.0	ug/L			04/08/18 15:41	1
Chloroform	ND		1.0	ug/L			04/08/18 15:41	1
Chloromethane	ND		1.0	ug/L			04/08/18 15:41	1
1,1-Dichloroethane	ND		1.0	ug/L			04/08/18 15:41	1
1,2-Dichloroethane	ND		1.0	ug/L			04/08/18 15:41	1
1,1-Dichloroethene	ND		1.0	ug/L			04/08/18 15:41	1
1,2-Dichloropropane	ND		1.0	ug/L			04/08/18 15:41	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			04/08/18 15:41	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			04/08/18 15:41	1
Ethylbenzene	ND		1.0	ug/L			04/08/18 15:41	1
2-Hexanone	ND		10	ug/L			04/08/18 15:41	1
Methylene Chloride	ND		1.0	ug/L			04/08/18 15:41	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			04/08/18 15:41	1
Styrene	ND		1.0	ug/L			04/08/18 15:41	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			04/08/18 15:41	1
Tetrachloroethene	ND		1.0	ug/L			04/08/18 15:41	1
Toluene	ND		1.0	ug/L			04/08/18 15:41	1
Trichloroethene	ND		1.0	ug/L			04/08/18 15:41	1
Vinyl chloride	ND		1.0	ug/L			04/08/18 15:41	1
Xylenes, Total	ND		2.0	ug/L			04/08/18 15:41	1
1,1,1-Trichloroethane	ND		1.0	ug/L			04/08/18 15:41	1
1,1,2-Trichloroethane	ND	* UJ	1.0	ug/L			04/08/18 15:41	1
Cyclohexane	ND		1.0	ug/L			04/08/18 15:41	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			04/08/18 15:41	1
Ethylene Dibromide	ND	* UJ	1.0	ug/L			04/08/18 15:41	1
Dichlorodifluoromethane	ND	* UJ	1.0	ug/L			04/08/18 15:41	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			04/08/18 15:41	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			04/08/18 15:41	1
Isopropylbenzene	ND		1.0	ug/L			04/08/18 15:41	1
Methyl acetate	ND		10	ug/L			04/08/18 15:41	1
Methyl tert-butyl ether	ND	* UJ	1.0	ug/L			04/08/18 15:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	ug/L			04/08/18 15:41	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			04/08/18 15:41	1
1,2-Dichlorobenzene	ND		1.0	ug/L			04/08/18 15:41	1
1,3-Dichlorobenzene	ND		1.0	ug/L			04/08/18 15:41	1
1,4-Dichlorobenzene	ND		1.0	ug/L			04/08/18 15:41	1
Trichlorofluoromethane	ND		1.0	ug/L			04/08/18 15:41	1
Chlorodibromomethane	ND	* UJ	1.0	ug/L			04/08/18 15:41	1
Methylcyclohexane	ND		1.0	ug/L			04/08/18 15:41	1

BLQ 7/12/18 LCS

8

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-24
Date Collected: 03/27/18 12:05
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-1
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		61 - 138		04/08/18 15:41	1
4-Bromofluorobenzene (Surr)	85		69 - 120		04/08/18 15:41	1
Toluene-d8 (Surr)	107		73 - 120		04/08/18 15:41	1
Dibromofluoromethane (Surr)	103		69 - 124		04/08/18 15:41	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-18
Date Collected: 03/27/18 14:17
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	ug/L			04/08/18 16:03	1
Benzene	**4.5**		1.0	ug/L			04/08/18 16:03	1
Dichlorobromomethane	ND		1.0	ug/L			04/08/18 16:03	1
Bromoform	ND		1.0	ug/L			04/08/18 16:03	1
Bromomethane	ND		1.0	ug/L			04/08/18 16:03	1
2-Butanone (MEK)	ND		10	ug/L			04/08/18 16:03	1
Carbon disulfide	ND		1.0	ug/L			04/08/18 16:03	1
Carbon tetrachloride	ND		1.0	ug/L			04/08/18 16:03	1
Chlorobenzene	**14**		1.0	ug/L			04/08/18 16:03	1
Chloroethane	ND		1.0	ug/L			04/08/18 16:03	1
Chloroform	ND		1.0	ug/L			04/08/18 16:03	1
Chloromethane	ND		1.0	ug/L			04/08/18 16:03	1
1,1-Dichloroethane	ND		1.0	ug/L			04/08/18 16:03	1
1,2-Dichloroethane	ND		1.0	ug/L			04/08/18 16:03	1
1,1-Dichloroethene	ND		1.0	ug/L			04/08/18 16:03	1
1,2-Dichloropropane	ND		1.0	ug/L			04/08/18 16:03	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			04/08/18 16:03	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			04/08/18 16:03	1
Ethylbenzene	ND		1.0	ug/L			04/08/18 16:03	1
2-Hexanone	ND		10	ug/L			04/08/18 16:03	1
Methylene Chloride	ND		1.0	ug/L			04/08/18 16:03	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			04/08/18 16:03	1
Styrene	ND		1.0	ug/L			04/08/18 16:03	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			04/08/18 16:03	1
Tetrachloroethene	ND		1.0	ug/L			04/08/18 16:03	1
Toluene	ND		1.0	ug/L			04/08/18 16:03	1
Trichloroethene	ND		1.0	ug/L			04/08/18 16:03	1
Vinyl chloride	ND		1.0	ug/L			04/08/18 16:03	1
Xylenes, Total	ND		2.0	ug/L			04/08/18 16:03	1
1,1,1-Trichloroethane	ND		1.0	ug/L			04/08/18 16:03	1
1,1,2-Trichloroethane	ND		1.0	ug/L			04/08/18 16:03	1
Cyclohexane	ND	* UJ	1.0	ug/L			04/08/18 16:03	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			04/08/18 16:03	1
Ethylene Dibromide	ND		1.0	ug/L			04/08/18 16:03	1
Dichlorodifluoromethane	ND	* UJ	1.0	ug/L			04/08/18 16:03	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			04/08/18 16:03	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			04/08/18 16:03	1
Isopropylbenzene	ND		1.0	ug/L			04/08/18 16:03	1
Methyl acetate	ND	UJ	10	ug/L			04/08/18 16:03	1
Methyl tert-butyl ether	ND		1.0	ug/L			04/08/18 16:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	*	1.0	ug/L			04/08/18 16:03	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			04/08/18 16:03	1
1,2-Dichlorobenzene	ND		1.0	ug/L			04/08/18 16:03	1
1,3-Dichlorobenzene	ND		1.0	ug/L			04/08/18 16:03	1
1,4-Dichlorobenzene	ND		1.0	ug/L			04/08/18 16:03	1
Trichlorofluoromethane	ND		1.0	ug/L			04/08/18 16:03	1
Chlorodibromomethane	ND	* UJ	1.0	ug/L			04/08/18 16:03	1
Methylcyclohexane	ND		1.0	ug/L			04/08/18 16:03	1

7/2/18 LCS BNQ

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-18
Date Collected: 03/27/18 14:17
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-2
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		61 - 138		04/08/18 16:03	1
4-Bromofluorobenzene (Surr)	75		69 - 120		04/08/18 16:03	1
Toluene-d8 (Surr)	96		73 - 120		04/08/18 16:03	1
Dibromofluoromethane (Surr)	96		69 - 124		04/08/18 16:03	1

Client Sample ID: OW-19
Date Collected: 03/27/18 15:20
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	ug/L			04/08/18 16:26	1
Benzene	**1.6**		1.0	ug/L			04/08/18 16:26	1
Dichlorobromomethane	ND		1.0	ug/L			04/08/18 16:26	1
Bromoform	ND		1.0	ug/L			04/08/18 16:26	1
Bromomethane	ND		1.0	ug/L			04/08/18 16:26	1
2-Butanone (MEK)	ND		10	ug/L			04/08/18 16:26	1
Carbon disulfide	ND		1.0	ug/L			04/08/18 16:26	1
Carbon tetrachloride	ND		1.0	ug/L			04/08/18 16:26	1
Chlorobenzene	**9.8**		1.0	ug/L			04/08/18 16:26	1
Chloroethane	ND		1.0	ug/L			04/08/18 16:26	1
Chloroform	ND		1.0	ug/L			04/08/18 16:26	1
Chloromethane	ND		1.0	ug/L			04/08/18 16:26	1
1,1-Dichloroethane	ND		1.0	ug/L			04/08/18 16:26	1
1,2-Dichloroethane	ND		1.0	ug/L			04/08/18 16:26	1
1,1-Dichloroethene	ND		1.0	ug/L			04/08/18 16:26	1
1,2-Dichloropropane	ND		1.0	ug/L			04/08/18 16:26	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			04/08/18 16:26	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			04/08/18 16:26	1
Ethylbenzene	ND		1.0	ug/L			04/08/18 16:26	1
2-Hexanone	ND		10	ug/L			04/08/18 16:26	1
Methylene Chloride	ND		1.0	ug/L			04/08/18 16:26	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			04/08/18 16:26	1
Styrene	ND		1.0	ug/L			04/08/18 16:26	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			04/08/18 16:26	1
Tetrachloroethene	ND		1.0	ug/L			04/08/18 16:26	1
Toluene	ND		1.0	ug/L			04/08/18 16:26	1
Trichloroethene	ND		1.0	ug/L			04/08/18 16:26	1
Vinyl chloride	ND		1.0	ug/L			04/08/18 16:26	1
Xylenes, Total	ND		2.0	ug/L			04/08/18 16:26	1
1,1,1-Trichloroethane	ND		1.0	ug/L			04/08/18 16:26	1
1,1,2-Trichloroethane	ND		1.0	ug/L			04/08/18 16:26	1
Cyclohexane	ND	* UJ	1.0	ug/L			04/08/18 16:26	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			04/08/18 16:26	1
Ethylene Dibromide	ND		1.0	ug/L			04/08/18 16:26	1
Dichlorodifluoromethane	ND	* UJ	1.0	ug/L			04/08/18 16:26	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			04/08/18 16:26	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			04/08/18 16:26	1
Isopropylbenzene	ND		1.0	ug/L			04/08/18 16:26	1
Methyl acetate	ND		10	ug/L			04/08/18 16:26	1
Methyl tert-butyl ether	ND	* UJ	1.0	ug/L			04/08/18 16:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	ug/L			04/08/18 16:26	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			04/08/18 16:26	1
1,2-Dichlorobenzene	ND		1.0	ug/L			04/08/18 16:26	1
1,3-Dichlorobenzene	ND		1.0	ug/L			04/08/18 16:26	1
1,4-Dichlorobenzene	ND		1.0	ug/L			04/08/18 16:26	1
Trichlorofluoromethane	ND		1.0	ug/L			04/08/18 16:26	1
Chlorodibromomethane	ND	* UJ	1.0	ug/L			04/08/18 16:26	1
Methylcyclohexane	ND	*	1.0	ug/L			04/08/18 16:26	1

BNA 7/2/18 LCS

Client Sample Results

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-19
Date Collected: 03/27/18 15:20
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-3
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		61 - 138		04/08/18 16:26	1
4-Bromofluorobenzene (Surr)	80		69 - 120		04/08/18 16:26	1
Toluene-d8 (Surr)	108		73 - 120		04/08/18 16:26	1
Dibromofluoromethane (Surr)	103		69 - 124		04/08/18 16:26	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: RINSATE BLANK
Date Collected: 03/27/18 15:25
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10		ug/L			04/08/18 16:48	1
Benzene	ND		1.0		ug/L			04/08/18 16:48	1
Dichlorobromomethane	ND		1.0		ug/L			04/08/18 16:48	1
Bromoform	ND		1.0		ug/L			04/08/18 16:48	1
Bromomethane	ND		1.0		ug/L			04/08/18 16:48	1
2-Butanone (MEK)	ND		10		ug/L			04/08/18 16:48	1
Carbon disulfide	ND		1.0		ug/L			04/08/18 16:48	1
Carbon tetrachloride	ND		1.0		ug/L			04/08/18 16:48	1
Chlorobenzene	ND		1.0		ug/L			04/08/18 16:48	1
Chloroethane	ND		1.0		ug/L			04/08/18 16:48	1
Chloroform	ND		1.0		ug/L			04/08/18 16:48	1
Chloromethane	ND		1.0		ug/L			04/08/18 16:48	1
1,1-Dichloroethane	ND		1.0		ug/L			04/08/18 16:48	1
1,2-Dichloroethane	ND		1.0		ug/L			04/08/18 16:48	1
1,1-Dichloroethene	ND		1.0		ug/L			04/08/18 16:48	1
1,2-Dichloropropane	ND		1.0		ug/L			04/08/18 16:48	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/08/18 16:48	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/08/18 16:48	1
Ethylbenzene	ND		1.0		ug/L			04/08/18 16:48	1
2-Hexanone	ND		10		ug/L			04/08/18 16:48	1
Methylene Chloride	ND		1.0		ug/L			04/08/18 16:48	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/08/18 16:48	1
Styrene	ND		1.0		ug/L			04/08/18 16:48	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/08/18 16:48	1
Tetrachloroethene	ND		1.0		ug/L			04/08/18 16:48	1
Toluene	ND		1.0		ug/L			04/08/18 16:48	1
Trichloroethene	ND		1.0		ug/L			04/08/18 16:48	1
Vinyl chloride	ND		1.0		ug/L			04/08/18 16:48	1
Xylenes, Total	ND		2.0		ug/L			04/08/18 16:48	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/08/18 16:48	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/08/18 16:48	1
Cyclohexane	ND	*	1.0		ug/L			04/08/18 16:48	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/08/18 16:48	1
Ethylene Dibromide	ND		1.0		ug/L			04/08/18 16:48	1
Dichlorodifluoromethane	ND	*	1.0		ug/L			04/08/18 16:48	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/08/18 16:48	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/08/18 16:48	1
Isopropylbenzene	ND		1.0		ug/L			04/08/18 16:48	1
Methyl acetate	ND		10		ug/L			04/08/18 16:48	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/08/18 16:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	*	1.0		ug/L			04/08/18 16:48	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/08/18 16:48	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/08/18 16:48	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/08/18 16:48	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/08/18 16:48	1
Trichlorofluoromethane	ND		1.0		ug/L			04/08/18 16:48	1
Chlorodibromomethane	ND		1.0		ug/L			04/08/18 16:48	1
Methylcyclohexane	ND	*	1.0		ug/L			04/08/18 16:48	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: RINSATE BLANK
Date Collected: 03/27/18 15:25
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-4
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		61 - 138		04/08/18 16:48	1
4-Bromofluorobenzene (Surr)	80		69 - 120		04/08/18 16:48	1
Toluene-d8 (Surr)	112		73 - 120		04/08/18 16:48	1
Dibromofluoromethane (Surr)	107		69 - 124		04/08/18 16:48	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: FIELD BLANK 1
Date Collected: 03/27/18 15:30
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10		ug/L			04/08/18 17:11	1
Benzene	ND		1.0		ug/L			04/08/18 17:11	1
Dichlorobromomethane	ND		1.0		ug/L			04/08/18 17:11	1
Bromoform	ND		1.0		ug/L			04/08/18 17:11	1
Bromomethane	ND		1.0		ug/L			04/08/18 17:11	1
2-Butanone (MEK)	ND		10		ug/L			04/08/18 17:11	1
Carbon disulfide	ND		1.0		ug/L			04/08/18 17:11	1
Carbon tetrachloride	ND		1.0		ug/L			04/08/18 17:11	1
Chlorobenzene	ND		1.0		ug/L			04/08/18 17:11	1
Chloroethane	ND		1.0		ug/L			04/08/18 17:11	1
Chloroform	ND		1.0		ug/L			04/08/18 17:11	1
Chloromethane	ND		1.0		ug/L			04/08/18 17:11	1
1,1-Dichloroethane	ND		1.0		ug/L			04/08/18 17:11	1
1,2-Dichloroethane	ND		1.0		ug/L			04/08/18 17:11	1
1,1-Dichloroethene	ND		1.0		ug/L			04/08/18 17:11	1
1,2-Dichloropropane	ND		1.0		ug/L			04/08/18 17:11	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/08/18 17:11	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/08/18 17:11	1
Ethylbenzene	ND		1.0		ug/L			04/08/18 17:11	1
2-Hexanone	ND		10		ug/L			04/08/18 17:11	1
Methylene Chloride	ND		1.0		ug/L			04/08/18 17:11	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/08/18 17:11	1
Styrene	ND		1.0		ug/L			04/08/18 17:11	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/08/18 17:11	1
Tetrachloroethene	ND		1.0		ug/L			04/08/18 17:11	1
Toluene	ND		1.0		ug/L			04/08/18 17:11	1
Trichloroethene	ND		1.0		ug/L			04/08/18 17:11	1
Vinyl chloride	ND		1.0		ug/L			04/08/18 17:11	1
Xylenes, Total	ND		2.0		ug/L			04/08/18 17:11	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/08/18 17:11	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/08/18 17:11	1
Cyclohexane	ND	*	1.0		ug/L			04/08/18 17:11	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/08/18 17:11	1
Ethylene Dibromide	ND		1.0		ug/L			04/08/18 17:11	1
Dichlorodifluoromethane	ND	*	1.0		ug/L			04/08/18 17:11	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/08/18 17:11	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/08/18 17:11	1
Isopropylbenzene	ND		1.0		ug/L			04/08/18 17:11	1
Methyl acetate	ND		10		ug/L			04/08/18 17:11	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/08/18 17:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	*	1.0		ug/L			04/08/18 17:11	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/08/18 17:11	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/08/18 17:11	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/08/18 17:11	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/08/18 17:11	1
Trichlorofluoromethane	ND		1.0		ug/L			04/08/18 17:11	1
Chlorodibromomethane	ND		1.0		ug/L			04/08/18 17:11	1
Methylcyclohexane	ND	*	1.0		ug/L			04/08/18 17:11	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: FIELD BLANK 1
Date Collected: 03/27/18 15:30
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-5
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		61 - 138		04/08/18 17:11	1
4-Bromofluorobenzene (Surr)	73		69 - 120		04/08/18 17:11	1
Toluene-d8 (Surr)	98		73 - 120		04/08/18 17:11	1
Dibromofluoromethane (Surr)	95		69 - 124		04/08/18 17:11	1

Client Sample ID: OW-10R
Date Collected: 03/27/18 16:45
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	ug/L			04/08/18 17:33	1
Benzene	**1.2**		1.0	ug/L			04/08/18 17:33	1
Dichlorobromomethane	ND		1.0	ug/L			04/08/18 17:33	1
Bromoform	ND		1.0	ug/L			04/08/18 17:33	1
Bromomethane	ND		1.0	ug/L			04/08/18 17:33	1
2-Butanone (MEK)	ND		10	ug/L			04/08/18 17:33	1
Carbon disulfide	ND		1.0	ug/L			04/08/18 17:33	1
Carbon tetrachloride	ND		1.0	ug/L			04/08/18 17:33	1
Chlorobenzene	**2.6**		1.0	ug/L			04/08/18 17:33	1
Chloroethane	ND		1.0	ug/L			04/08/18 17:33	1
Chloroform	ND		1.0	ug/L			04/08/18 17:33	1
Chloromethane	ND		1.0	ug/L			04/08/18 17:33	1
1,1-Dichloroethane	ND		1.0	ug/L			04/08/18 17:33	1
1,2-Dichloroethane	ND		1.0	ug/L			04/08/18 17:33	1
1,1-Dichloroethene	ND		1.0	ug/L			04/08/18 17:33	1
1,2-Dichloropropane	ND		1.0	ug/L			04/08/18 17:33	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			04/08/18 17:33	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			04/08/18 17:33	1
Ethylbenzene	ND		1.0	ug/L			04/08/18 17:33	1
2-Hexanone	ND		10	ug/L			04/08/18 17:33	1
Methylene Chloride	ND		1.0	ug/L			04/08/18 17:33	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			04/08/18 17:33	1
Styrene	ND		1.0	ug/L			04/08/18 17:33	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			04/08/18 17:33	1
Tetrachloroethene	ND		1.0	ug/L			04/08/18 17:33	1
Toluene	ND		1.0	ug/L			04/08/18 17:33	1
Trichloroethene	ND		1.0	ug/L			04/08/18 17:33	1
Vinyl chloride	ND		1.0	ug/L			04/08/18 17:33	1
Xylenes, Total	ND		2.0	ug/L			04/08/18 17:33	1
1,1,1-Trichloroethane	ND		1.0	ug/L			04/08/18 17:33	1
1,1,2-Trichloroethane	ND		1.0	ug/L			04/08/18 17:33	1
Cyclohexane	ND * UJ		1.0	ug/L			04/08/18 17:33	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			04/08/18 17:33	1
Ethylene Dibromide	ND * UJ		1.0	ug/L			04/08/18 17:33	1
Dichlorodifluoromethane	ND		1.0	ug/L			04/08/18 17:33	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			04/08/18 17:33	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			04/08/18 17:33	1
Isopropylbenzene	ND		1.0	ug/L			04/08/18 17:33	1
Methyl acetate	ND		10	ug/L			04/08/18 17:33	1
Methyl tert-butyl ether	ND * UJ		1.0	ug/L			04/08/18 17:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	ug/L			04/08/18 17:33	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			04/08/18 17:33	1
1,2-Dichlorobenzene	ND		1.0	ug/L			04/08/18 17:33	1
1,3-Dichlorobenzene	ND		1.0	ug/L			04/08/18 17:33	1
1,4-Dichlorobenzene	ND		1.0	ug/L			04/08/18 17:33	1
Trichlorofluoromethane	ND		1.0	ug/L			04/08/18 17:33	1
Chlorodibromomethane	ND * UJ		1.0	ug/L			04/08/18 17:33	1
Methylcyclohexane	ND		1.0	ug/L			04/08/18 17:33	1

BNQ 7/2/18 LCS

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-10R
Date Collected: 03/27/18 16:45
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-6
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		61 - 138		04/08/18 17:33	1
4-Bromofluorobenzene (Surr)	74		69 - 120		04/08/18 17:33	1
Toluene-d8 (Surr)	93		73 - 120		04/08/18 17:33	1
Dibromofluoromethane (Surr)	93		69 - 124		04/08/18 17:33	1

Client Sample ID: OW-21
Date Collected: 03/27/18 17:25
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	ug/L			04/08/18 17:56	1
Benzene	ND		1.0	ug/L			04/08/18 17:56	1
Dichlorobromomethane	ND		1.0	ug/L			04/08/18 17:56	1
Bromoform	ND		1.0	ug/L			04/08/18 17:56	1
Bromomethane	ND		1.0	ug/L			04/08/18 17:56	1
2-Butanone (MEK)	ND		10	ug/L			04/08/18 17:56	1
Carbon disulfide	ND		1.0	ug/L			04/08/18 17:56	1
Carbon tetrachloride	ND		1.0	ug/L			04/08/18 17:56	1
Chlorobenzene	ND		1.0	ug/L			04/08/18 17:56	1
Chloroethane	ND		1.0	ug/L			04/08/18 17:56	1
Chloroform	ND		1.0	ug/L			04/08/18 17:56	1
Chloromethane	ND		1.0	ug/L			04/08/18 17:56	1
1,1-Dichloroethane	ND		1.0	ug/L			04/08/18 17:56	1
1,2-Dichloroethane	ND		1.0	ug/L			04/08/18 17:56	1
1,1-Dichloroethene	ND		1.0	ug/L			04/08/18 17:56	1
1,2-Dichloropropane	ND		1.0	ug/L			04/08/18 17:56	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			04/08/18 17:56	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			04/08/18 17:56	1
Ethylbenzene	ND		1.0	ug/L			04/08/18 17:56	1
2-Hexanone	ND		10	ug/L			04/08/18 17:56	1
Methylene Chloride	ND		1.0	ug/L			04/08/18 17:56	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			04/08/18 17:56	1
Styrene	ND		1.0	ug/L			04/08/18 17:56	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			04/08/18 17:56	1
Tetrachloroethene	ND		1.0	ug/L			04/08/18 17:56	1
Toluene	ND		1.0	ug/L			04/08/18 17:56	1
Trichloroethene	ND		1.0	ug/L			04/08/18 17:56	1
Vinyl chloride	ND		1.0	ug/L			04/08/18 17:56	1
Xylenes, Total	ND		2.0	ug/L			04/08/18 17:56	1
1,1,1-Trichloroethane	ND		1.0	ug/L			04/08/18 17:56	1
1,1,2-Trichloroethane	ND	* UJ	1.0	ug/L			04/08/18 17:56	1
Cyclohexane	ND		1.0	ug/L			04/08/18 17:56	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			04/08/18 17:56	1
Ethylene Dibromide	ND	* UJ	1.0	ug/L			04/08/18 17:56	1
Dichlorodifluoromethane	ND		1.0	ug/L			04/08/18 17:56	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			04/08/18 17:56	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			04/08/18 17:56	1
Isopropylbenzene	ND		1.0	ug/L			04/08/18 17:56	1
Methyl acetate	ND		10	ug/L			04/08/18 17:56	1
Methyl tert-butyl ether	ND	* UJ	1.0	ug/L			04/08/18 17:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	ug/L			04/08/18 17:56	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			04/08/18 17:56	1
1,2-Dichlorobenzene	ND		1.0	ug/L			04/08/18 17:56	1
1,3-Dichlorobenzene	ND		1.0	ug/L			04/08/18 17:56	1
1,4-Dichlorobenzene	ND		1.0	ug/L			04/08/18 17:56	1
Trichlorofluoromethane	ND		1.0	ug/L			04/08/18 17:56	1
Chlorodibromomethane	ND	* UJ	1.0	ug/L			04/08/18 17:56	1
Methylcyclohexane	ND		1.0	ug/L			04/08/18 17:56	1

BNQ 7/2/18 LCS

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-21
Date Collected: 03/27/18 17:25
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-7
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		61 - 138		04/08/18 17:56	1
4-Bromofluorobenzene (Surr)	79		69 - 120		04/08/18 17:56	1
Toluene-d8 (Surr)	106		73 - 120		04/08/18 17:56	1
Dibromofluoromethane (Surr)	101		69 - 124		04/08/18 17:56	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: SW-1
Date Collected: 03/28/18 09:05
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-8
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10		ug/L			04/05/18 20:25	1
Benzene	ND		1.0		ug/L			04/05/18 20:25	1
Dichlorobromomethane	ND		1.0		ug/L			04/05/18 20:25	1
Bromoform	ND		1.0		ug/L			04/05/18 20:25	1
Bromomethane	ND		1.0		ug/L			04/05/18 20:25	1
2-Butanone (MEK)	ND		10		ug/L			04/05/18 20:25	1
Carbon disulfide	ND		1.0		ug/L			04/05/18 20:25	1
Carbon tetrachloride	ND		1.0		ug/L			04/05/18 20:25	1
Chlorobenzene	ND		1.0		ug/L			04/05/18 20:25	1
Chloroethane	ND		1.0		ug/L			04/05/18 20:25	1
Chloroform	ND		1.0		ug/L			04/05/18 20:25	1
Chloromethane	ND		1.0		ug/L			04/05/18 20:25	1
1,1-Dichloroethane	ND		1.0		ug/L			04/05/18 20:25	1
1,2-Dichloroethane	ND		1.0		ug/L			04/05/18 20:25	1
1,1-Dichloroethene	ND		1.0		ug/L			04/05/18 20:25	1
1,2-Dichloropropane	ND		1.0		ug/L			04/05/18 20:25	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/05/18 20:25	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/05/18 20:25	1
Ethylbenzene	ND		1.0		ug/L			04/05/18 20:25	1
2-Hexanone	ND		10		ug/L			04/05/18 20:25	1
Methylene Chloride	ND		1.0		ug/L			04/05/18 20:25	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/05/18 20:25	1
Styrene	ND		1.0		ug/L			04/05/18 20:25	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/05/18 20:25	1
Tetrachloroethene	ND		1.0		ug/L			04/05/18 20:25	1
Toluene	ND		1.0		ug/L			04/05/18 20:25	1
Trichloroethene	ND		1.0		ug/L			04/05/18 20:25	1
Vinyl chloride	ND		1.0		ug/L			04/05/18 20:25	1
Xylenes, Total	ND		2.0		ug/L			04/05/18 20:25	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/05/18 20:25	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/05/18 20:25	1
Cyclohexane	ND		1.0		ug/L			04/05/18 20:25	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/05/18 20:25	1
Ethylene Dibromide	ND		1.0		ug/L			04/05/18 20:25	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/05/18 20:25	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/05/18 20:25	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/05/18 20:25	1
Isopropylbenzene	ND		1.0		ug/L			04/05/18 20:25	1
Methyl acetate	ND		10		ug/L			04/05/18 20:25	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/05/18 20:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			04/05/18 20:25	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/05/18 20:25	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/05/18 20:25	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/05/18 20:25	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/05/18 20:25	1
Trichlorofluoromethane	ND		1.0		ug/L			04/05/18 20:25	1
Chlorodibromomethane	ND		1.0		ug/L			04/05/18 20:25	1
Methylcyclohexane	ND		1.0		ug/L			04/05/18 20:25	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: SW-1
Date Collected: 03/28/18 09:05
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-8
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		61 - 138		04/05/18 20:25	1
4-Bromofluorobenzene (Surr)	89		69 - 120		04/05/18 20:25	1
Toluene-d8 (Surr)	98		73 - 120		04/05/18 20:25	1
Dibromofluoromethane (Surr)	99		69 - 124		04/05/18 20:25	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: SW-1 DUP
Date Collected: 03/28/18 09:05
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-9
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10		ug/L			04/05/18 20:47	1
Benzene	ND		1.0		ug/L			04/05/18 20:47	1
Dichlorobromomethane	ND		1.0		ug/L			04/05/18 20:47	1
Bromoform	ND		1.0		ug/L			04/05/18 20:47	1
Bromomethane	ND		1.0		ug/L			04/05/18 20:47	1
2-Butanone (MEK)	ND		10		ug/L			04/05/18 20:47	1
Carbon disulfide	ND		1.0		ug/L			04/05/18 20:47	1
Carbon tetrachloride	ND		1.0		ug/L			04/05/18 20:47	1
Chlorobenzene	ND		1.0		ug/L			04/05/18 20:47	1
Chloroethane	ND		1.0		ug/L			04/05/18 20:47	1
Chloroform	ND		1.0		ug/L			04/05/18 20:47	1
Chloromethane	ND		1.0		ug/L			04/05/18 20:47	1
1,1-Dichloroethane	ND		1.0		ug/L			04/05/18 20:47	1
1,2-Dichloroethane	ND		1.0		ug/L			04/05/18 20:47	1
1,1-Dichloroethene	ND		1.0		ug/L			04/05/18 20:47	1
1,2-Dichloropropane	ND		1.0		ug/L			04/05/18 20:47	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/05/18 20:47	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/05/18 20:47	1
Ethylbenzene	ND		1.0		ug/L			04/05/18 20:47	1
2-Hexanone	ND		10		ug/L			04/05/18 20:47	1
Methylene Chloride	ND		1.0		ug/L			04/05/18 20:47	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/05/18 20:47	1
Styrene	ND		1.0		ug/L			04/05/18 20:47	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/05/18 20:47	1
Tetrachloroethene	ND		1.0		ug/L			04/05/18 20:47	1
Toluene	ND		1.0		ug/L			04/05/18 20:47	1
Trichloroethene	ND		1.0		ug/L			04/05/18 20:47	1
Vinyl chloride	ND		1.0		ug/L			04/05/18 20:47	1
Xylenes, Total	ND		2.0		ug/L			04/05/18 20:47	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/05/18 20:47	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/05/18 20:47	1
Cyclohexane	ND		1.0		ug/L			04/05/18 20:47	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/05/18 20:47	1
Ethylene Dibromide	ND		1.0		ug/L			04/05/18 20:47	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/05/18 20:47	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/05/18 20:47	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/05/18 20:47	1
Isopropylbenzene	ND		1.0		ug/L			04/05/18 20:47	1
Methyl acetate	ND		10		ug/L			04/05/18 20:47	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/05/18 20:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			04/05/18 20:47	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/05/18 20:47	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/05/18 20:47	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/05/18 20:47	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/05/18 20:47	1
Trichlorofluoromethane	ND		1.0		ug/L			04/05/18 20:47	1
Chlorodibromomethane	ND		1.0		ug/L			04/05/18 20:47	1
Methylcyclohexane	ND		1.0		ug/L			04/05/18 20:47	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: SW-1 DUP
Date Collected: 03/28/18 09:05
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-9
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		61 - 138		04/05/18 20:47	1
4-Bromofluorobenzene (Surr)	90		69 - 120		04/05/18 20:47	1
Toluene-d8 (Surr)	101		73 - 120		04/05/18 20:47	1
Dibromofluoromethane (Surr)	99		69 - 124		04/05/18 20:47	1

Client Sample ID: SED-1

Date Collected: 03/28/18 09:10
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-10

Matrix: Solid
Percent Solids: 10.0

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
1,1,2,2-Tetrachloroethane	ND	*	45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
1,1,2-Trichloroethane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
1,1-Dichloroethane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
1,1-Dichloroethene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
1,2,4-Trichlorobenzene	ND	*	45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
1,2-Dibromo-3-Chloropropane	ND	*	90	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
1,2-Dichlorobenzene	ND	*	45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
1,2-Dichloroethane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
1,2-Dichloropropane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
1,3-Dichlorobenzene	ND	*	45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
1,4-Dichlorobenzene	ND	*	45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
2-Hexanone	ND		180	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Acetone	**280**	J surrogate recovery	180	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Benzene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Bromoform	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Bromomethane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Carbon disulfide	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Carbon tetrachloride	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Chlorobenzene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Chloroethane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Chloroform	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Chloromethane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
cis-1,2-Dichloroethene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
cis-1,3-Dichloropropene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Cyclohexane	ND		90	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Dichlorobromomethane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Dichlorodifluoromethane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Ethylbenzene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Ethylene Dibromide	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Isopropylbenzene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Methyl acetate	ND		230	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
2-Butanone (MEK)	ND		180	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
4-Methyl-2-pentanone (MIBK)	ND		180	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Methyl tert-butyl ether	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Methylene Chloride	**160**	B 160 B/B method blank J surrogate recovery	45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Styrene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Tetrachloroethene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Toluene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
trans-1,2-Dichloroethene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
trans-1,3-Dichloropropene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Trichloroethene	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Trichlorofluoromethane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Vinyl chloride	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Xylenes, Total	ND		90	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Methylcyclohexane	ND		90	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1
Chlorodibromomethane	ND		45	ug/Kg	☼	04/02/18 11:39	04/02/18 14:40	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: SED-1
Date Collected: 03/28/18 09:10
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-10
Matrix: Solid
Percent Solids: 10.0

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*61 - 127*	*04/02/18 11:39*	*04/02/18 14:40*	*1*
4-Bromofluorobenzene (Surr)	*133*	** X*	*61 - 132*	*04/02/18 11:39*	*04/02/18 14:40*	*1*
Toluene-d8 (Surr)	*125*		*66 - 125*	*04/02/18 11:39*	*04/02/18 14:40*	*1*
Dibromofluoromethane (Surr)	*93*		*43 - 131*	*04/02/18 11:39*	*04/02/18 14:40*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**10.0**		0.1	%			04/02/18 14:31	1
Percent Moisture	**90.0**		0.1	%			04/02/18 14:31	1

Client Sample ID: SW-2
Date Collected: 03/28/18 09:45
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-11
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	ug/L			04/05/18 21:09	1
Benzene	ND		1.0	ug/L			04/05/18 21:09	1
Dichlorobromomethane	ND		1.0	ug/L			04/05/18 21:09	1
Bromoform	ND		1.0	ug/L			04/05/18 21:09	1
Bromomethane	ND	F2	1.0	ug/L			04/05/18 21:09	1
2-Butanone (MEK)	ND	F2	10	ug/L			04/05/18 21:09	1
Carbon disulfide	ND		1.0	ug/L			04/05/18 21:09	1
Carbon tetrachloride	ND		1.0	ug/L			04/05/18 21:09	1
Chlorobenzene	ND		1.0	ug/L			04/05/18 21:09	1
Chloroethane	ND	F2	1.0	ug/L			04/05/18 21:09	1
Chloroform	ND		1.0	ug/L			04/05/18 21:09	1
Chloromethane	ND		1.0	ug/L			04/05/18 21:09	1
1,1-Dichloroethane	ND	F2	1.0	ug/L			04/05/18 21:09	1
1,2-Dichloroethane	ND		1.0	ug/L			04/05/18 21:09	1
1,1-Dichloroethene	ND		1.0	ug/L			04/05/18 21:09	1
1,2-Dichloropropane	ND		1.0	ug/L			04/05/18 21:09	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			04/05/18 21:09	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			04/05/18 21:09	1
Ethylbenzene	ND		1.0	ug/L			04/05/18 21:09	1
2-Hexanone	ND		10	ug/L			04/05/18 21:09	1
Methylene Chloride	ND	F2	1.0	ug/L			04/05/18 21:09	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			04/05/18 21:09	1
Styrene	ND		1.0	ug/L			04/05/18 21:09	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			04/05/18 21:09	1
Tetrachloroethene	ND		1.0	ug/L			04/05/18 21:09	1
Toluene	ND		1.0	ug/L			04/05/18 21:09	1
Trichloroethene	ND		1.0	ug/L			04/05/18 21:09	1
Vinyl chloride	ND		1.0	ug/L			04/05/18 21:09	1
Xylenes, Total	ND		2.0	ug/L			04/05/18 21:09	1
1,1,1-Trichloroethane	ND		1.0	ug/L			04/05/18 21:09	1
1,1,2-Trichloroethane	ND		1.0	ug/L			04/05/18 21:09	1
Cyclohexane	ND		1.0	ug/L			04/05/18 21:09	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			04/05/18 21:09	1
Ethylene Dibromide	ND		1.0	ug/L			04/05/18 21:09	1
Dichlorodifluoromethane	ND		1.0	ug/L			04/05/18 21:09	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			04/05/18 21:09	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			04/05/18 21:09	1
Isopropylbenzene	ND		1.0	ug/L			04/05/18 21:09	1
Methyl acetate	ND		10	ug/L			04/05/18 21:09	1
Methyl tert-butyl ether	ND		1.0	ug/L			04/05/18 21:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	ug/L			04/05/18 21:09	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			04/05/18 21:09	1
1,2-Dichlorobenzene	ND		1.0	ug/L			04/05/18 21:09	1
1,3-Dichlorobenzene	ND		1.0	ug/L			04/05/18 21:09	1
1,4-Dichlorobenzene	ND		1.0	ug/L			04/05/18 21:09	1
Trichlorofluoromethane	ND	F2	1.0	ug/L			04/05/18 21:09	1
Chlorodibromomethane	ND		1.0	ug/L			04/05/18 21:09	1
Methylcyclohexane	ND		1.0	ug/L			04/05/18 21:09	1

UJ UJ UJ UJ UJ UJ UJ

BNQ 7/2/18 MS/MSD

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: SW-2
Date Collected: 03/28/18 09:45
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-11
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		61 - 138		04/05/18 21:09	1
4-Bromofluorobenzene (Surr)	85		69 - 120		04/05/18 21:09	1
Toluene-d8 (Surr)	95		73 - 120		04/05/18 21:09	1
Dibromofluoromethane (Surr)	91		69 - 124		04/05/18 21:09	1

Client Sample ID: SED-2

Date Collected: 03/28/18 09:50
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-12

Matrix: Solid
Percent Solids: 14.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
1,1,2,2-Tetrachloroethane	ND	*	29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
1,1,2-Trichloroethane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
1,1-Dichloroethane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
1,1-Dichloroethene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
1,2,4-Trichlorobenzene	ND	*	29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
1,2-Dibromo-3-Chloropropane	ND	*	59	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
1,2-Dichlorobenzene	ND	*	29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
1,2-Dichloroethane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
1,2-Dichloropropane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
1,3-Dichlorobenzene	ND	*	29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
1,4-Dichlorobenzene	ND	*	29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
2-Hexanone	ND		120	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Acetone	**120**		120	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Benzene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Bromoform	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Bromomethane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Carbon disulfide	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Carbon tetrachloride	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Chlorobenzene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Chloroethane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Chloroform	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Chloromethane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
cis-1,2-Dichloroethene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
cis-1,3-Dichloropropene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Cyclohexane	ND		59	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Dichlorobromomethane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Dichlorodifluoromethane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Ethylbenzene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Ethylene Dibromide	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Isopropylbenzene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Methyl acetate	ND		150	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
2-Butanone (MEK)	ND		120	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
4-Methyl-2-pentanone (MIBK)	ND		120	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Methyl tert-butyl ether	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Methylene Chloride	**51**	B	29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Styrene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Tetrachloroethene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Toluene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
trans-1,2-Dichloroethene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
trans-1,3-Dichloropropene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Trichloroethene	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Trichlorofluoromethane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Vinyl chloride	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Xylenes, Total	ND		59	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Methylcyclohexane	ND		59	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1
Chlorodibromomethane	ND		29	ug/Kg	☼	04/02/18 11:39	04/02/18 15:05	1

J surrogate recovery. Field Dup

J IS

SIB NJ method blank

J surrogate recovery

B, NJ 7/2/18

8

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: SED-2
Date Collected: 03/28/18 09:50
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-12
Matrix: Solid
Percent Solids: 14.7

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*117*		*61 - 127*	*04/02/18 11:39*	*04/02/18 15:05*	*1*
4-Bromofluorobenzene (Surr)	*154*	** X*	*61 - 132*	*04/02/18 11:39*	*04/02/18 15:05*	*1*
Toluene-d8 (Surr)	*149*	*X*	*66 - 125*	*04/02/18 11:39*	*04/02/18 15:05*	*1*
Dibromofluoromethane (Surr)	*118*		*43 - 131*	*04/02/18 11:39*	*04/02/18 15:05*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**14.7**		0.1	%			04/02/18 14:31	1
Percent Moisture	**85.3**		0.1	%			04/02/18 14:31	1

Client Sample ID: SED-2 DUP
Date Collected: 03/28/18 09:50
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-13
Matrix: Solid
Percent Solids: 12.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
1,1,2,2-Tetrachloroethane	ND	*	36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
1,1,2-Trichloroethane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
1,1-Dichloroethane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
1,1-Dichloroethene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
1,2,4-Trichlorobenzene	ND	*	36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
1,2-Dibromo-3-Chloropropane	ND	*	72	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
1,2-Dichlorobenzene	ND	*	36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
1,2-Dichloroethane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
1,2-Dichloropropane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
1,3-Dichlorobenzene	ND	*	36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
1,4-Dichlorobenzene	ND	*	36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
2-Hexanone	ND		140	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Acetone	ND		140	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Benzene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Bromoform	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Bromomethane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Carbon disulfide	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Carbon tetrachloride	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Chlorobenzene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Chloroethane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Chloroform	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Chloromethane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
cis-1,2-Dichloroethene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
cis-1,3-Dichloropropene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Cyclohexane	ND		72	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Dichlorobromomethane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Dichlorodifluoromethane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Ethylbenzene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Ethylene Dibromide	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Isopropylbenzene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Methyl acetate	ND		180	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
2-Butanone (MEK)	ND		140	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
4-Methyl-2-pentanone (MIBK)	ND		140	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Methyl tert-butyl ether	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Methylene Chloride	71	B	36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Styrene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Tetrachloroethene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Toluene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
trans-1,2-Dichloroethene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
trans-1,3-Dichloropropene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Trichloroethene	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Trichlorofluoromethane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Vinyl chloride	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Xylenes, Total	ND		72	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Methylcyclohexane	ND		72	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1
Chlorodibromomethane	ND		36	ug/Kg	☼	04/02/18 11:39	04/02/18 15:30	1

UJ Field DUP

7/2/18 71 BNQ method blank

J surrogate recovery, IS

8

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: SED-2 DUP
Date Collected: 03/28/18 09:50
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-13
Matrix: Solid
Percent Solids: 12.2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*83*		*61 - 127*	*04/02/18 11:39*	*04/02/18 15:30*	*1*
4-Bromofluorobenzene (Surr)	*141*	** X*	*61 - 132*	*04/02/18 11:39*	*04/02/18 15:30*	*1*
Toluene-d8 (Surr)	*128*	*X*	*66 - 125*	*04/02/18 11:39*	*04/02/18 15:30*	*1*
Dibromofluoromethane (Surr)	*95*		*43 - 131*	*04/02/18 11:39*	*04/02/18 15:30*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**12.2**		0.1	%			04/02/18 14:31	1
Percent Moisture	**87.8**		0.1	%			04/02/18 14:31	1

Client Sample ID: OW-22
Date Collected: 03/28/18 11:10
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-14
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10		ug/L			04/09/18 19:20	1
Benzene	**5.6**		1.0		ug/L			04/09/18 19:20	1
Dichlorobromomethane	ND		1.0		ug/L			04/09/18 19:20	1
Bromoform	ND		1.0		ug/L			04/09/18 19:20	1
Bromomethane	ND		1.0		ug/L			04/09/18 19:20	1
2-Butanone (MEK)	ND		10		ug/L			04/09/18 19:20	1
Carbon disulfide	ND		1.0		ug/L			04/09/18 19:20	1
Carbon tetrachloride	ND		1.0		ug/L			04/09/18 19:20	1
Chlorobenzene	**7.2**		1.0		ug/L			04/09/18 19:20	1
Chloroethane	ND		1.0		ug/L			04/09/18 19:20	1
Chloroform	ND		1.0		ug/L			04/09/18 19:20	1
Chloromethane	ND		1.0		ug/L			04/09/18 19:20	1
1,1-Dichloroethane	ND		1.0		ug/L			04/09/18 19:20	1
1,2-Dichloroethane	ND		1.0		ug/L			04/09/18 19:20	1
1,1-Dichloroethene	ND		1.0		ug/L			04/09/18 19:20	1
1,2-Dichloropropane	ND		1.0		ug/L			04/09/18 19:20	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/09/18 19:20	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/09/18 19:20	1
Ethylbenzene	ND		1.0		ug/L			04/09/18 19:20	1
2-Hexanone	ND		10		ug/L			04/09/18 19:20	1
Methylene Chloride	ND		1.0		ug/L			04/09/18 19:20	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/09/18 19:20	1
Styrene	ND		1.0		ug/L			04/09/18 19:20	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/09/18 19:20	1
Tetrachloroethene	ND		1.0		ug/L			04/09/18 19:20	1
Toluene	ND		1.0		ug/L			04/09/18 19:20	1
Trichloroethene	ND		1.0		ug/L			04/09/18 19:20	1
Vinyl chloride	ND		1.0		ug/L			04/09/18 19:20	1
Xylenes, Total	ND		2.0		ug/L			04/09/18 19:20	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/09/18 19:20	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/09/18 19:20	1
Cyclohexane	ND		1.0		ug/L			04/09/18 19:20	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/09/18 19:20	1
Ethylene Dibromide	ND		1.0		ug/L			04/09/18 19:20	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/09/18 19:20	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/09/18 19:20	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/09/18 19:20	1
Isopropylbenzene	ND		1.0		ug/L			04/09/18 19:20	1
Methyl acetate	ND		10		ug/L			04/09/18 19:20	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/09/18 19:20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			04/09/18 19:20	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/09/18 19:20	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/09/18 19:20	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/09/18 19:20	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/09/18 19:20	1
Trichlorofluoromethane	ND		1.0		ug/L			04/09/18 19:20	1
Chlorodibromomethane	ND		1.0		ug/L			04/09/18 19:20	1
Methylcyclohexane	ND		1.0		ug/L			04/09/18 19:20	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-22
Date Collected: 03/28/18 11:10
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-14
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		61 - 138		04/09/18 19:20	1
4-Bromofluorobenzene (Surr)	81		69 - 120		04/09/18 19:20	1
Toluene-d8 (Surr)	91		73 - 120		04/09/18 19:20	1
Dibromofluoromethane (Surr)	100		69 - 124		04/09/18 19:20	1

Client Sample ID: OW-2
Date Collected: 03/28/18 12:10
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-15
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		25		ug/L			04/10/18 13:40	2.5
Benzene	ND		2.5		ug/L			04/10/18 13:40	2.5
Dichlorobromomethane	ND		2.5		ug/L			04/10/18 13:40	2.5
Bromoform	ND		2.5		ug/L			04/10/18 13:40	2.5
Bromomethane	ND		2.5		ug/L			04/10/18 13:40	2.5
2-Butanone (MEK)	ND		25		ug/L			04/10/18 13:40	2.5
Carbon disulfide	ND		2.5		ug/L			04/10/18 13:40	2.5
Carbon tetrachloride	ND		2.5		ug/L			04/10/18 13:40	2.5
Chlorobenzene	ND		2.5		ug/L			04/10/18 13:40	2.5
Chloroethane	ND		2.5		ug/L			04/10/18 13:40	2.5
Chloroform	ND		2.5		ug/L			04/10/18 13:40	2.5
Chloromethane	ND		2.5		ug/L			04/10/18 13:40	2.5
1,1-Dichloroethane	ND		2.5		ug/L			04/10/18 13:40	2.5
1,2-Dichloroethane	ND		2.5		ug/L			04/10/18 13:40	2.5
1,1-Dichloroethene	ND		2.5		ug/L			04/10/18 13:40	2.5
1,2-Dichloropropane	ND		2.5		ug/L			04/10/18 13:40	2.5
cis-1,3-Dichloropropene	ND		2.5		ug/L			04/10/18 13:40	2.5
trans-1,3-Dichloropropene	ND		2.5		ug/L			04/10/18 13:40	2.5
Ethylbenzene	ND		2.5		ug/L			04/10/18 13:40	2.5
2-Hexanone	ND		25		ug/L			04/10/18 13:40	2.5
Methylene Chloride	ND		2.5		ug/L			04/10/18 13:40	2.5
4-Methyl-2-pentanone (MIBK)	ND		25		ug/L			04/10/18 13:40	2.5
Styrene	ND		2.5		ug/L			04/10/18 13:40	2.5
1,1,2,2-Tetrachloroethane	ND		2.5		ug/L			04/10/18 13:40	2.5
Tetrachloroethene	**89**		2.5		ug/L			04/10/18 13:40	2.5
Toluene	ND		2.5		ug/L			04/10/18 13:40	2.5
Trichloroethene	**11**		2.5		ug/L			04/10/18 13:40	2.5
Vinyl chloride	ND		2.5		ug/L			04/10/18 13:40	2.5
Xylenes, Total	ND		5.0		ug/L			04/10/18 13:40	2.5
1,1,1-Trichloroethane	ND		2.5		ug/L			04/10/18 13:40	2.5
1,1,2-Trichloroethane	ND		2.5		ug/L			04/10/18 13:40	2.5
Cyclohexane	ND		2.5		ug/L			04/10/18 13:40	2.5
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			04/10/18 13:40	2.5
Ethylene Dibromide	ND		2.5		ug/L			04/10/18 13:40	2.5
Dichlorodifluoromethane	ND		2.5		ug/L			04/10/18 13:40	2.5
cis-1,2-Dichloroethene	**48**		2.5		ug/L			04/10/18 13:40	2.5
trans-1,2-Dichloroethene	ND		2.5		ug/L			04/10/18 13:40	2.5
Isopropylbenzene	ND		2.5		ug/L			04/10/18 13:40	2.5
Methyl acetate	ND		25		ug/L			04/10/18 13:40	2.5
Methyl tert-butyl ether	ND		2.5		ug/L			04/10/18 13:40	2.5
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.5		ug/L			04/10/18 13:40	2.5
1,2,4-Trichlorobenzene	ND		2.5		ug/L			04/10/18 13:40	2.5
1,2-Dichlorobenzene	ND		2.5		ug/L			04/10/18 13:40	2.5
1,3-Dichlorobenzene	ND		2.5		ug/L			04/10/18 13:40	2.5
1,4-Dichlorobenzene	ND		2.5		ug/L			04/10/18 13:40	2.5
Trichlorofluoromethane	ND		2.5		ug/L			04/10/18 13:40	2.5
Chlorodibromomethane	ND		2.5		ug/L			04/10/18 13:40	2.5
Methylcyclohexane	ND		2.5		ug/L			04/10/18 13:40	2.5

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-2
Date Collected: 03/28/18 12:10
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-15
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		61 - 138		04/10/18 13:40	2.5
4-Bromofluorobenzene (Surr)	80		69 - 120		04/10/18 13:40	2.5
Toluene-d8 (Surr)	93		73 - 120		04/10/18 13:40	2.5
Dibromofluoromethane (Surr)	91		69 - 124		04/10/18 13:40	2.5

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: FB-2
Date Collected: 03/28/18 13:15
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-16
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10		ug/L			04/10/18 14:12	1
Benzene	ND		1.0		ug/L			04/10/18 14:12	1
Dichlorobromomethane	ND		1.0		ug/L			04/10/18 14:12	1
Bromoform	ND		1.0		ug/L			04/10/18 14:12	1
Bromomethane	ND		1.0		ug/L			04/10/18 14:12	1
2-Butanone (MEK)	ND		10		ug/L			04/10/18 14:12	1
Carbon disulfide	ND		1.0		ug/L			04/10/18 14:12	1
Carbon tetrachloride	ND		1.0		ug/L			04/10/18 14:12	1
Chlorobenzene	ND		1.0		ug/L			04/10/18 14:12	1
Chloroethane	ND		1.0		ug/L			04/10/18 14:12	1
Chloroform	ND		1.0		ug/L			04/10/18 14:12	1
Chloromethane	ND		1.0		ug/L			04/10/18 14:12	1
1,1-Dichloroethane	ND		1.0		ug/L			04/10/18 14:12	1
1,2-Dichloroethane	ND		1.0		ug/L			04/10/18 14:12	1
1,1-Dichloroethene	ND		1.0		ug/L			04/10/18 14:12	1
1,2-Dichloropropane	ND		1.0		ug/L			04/10/18 14:12	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/10/18 14:12	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/10/18 14:12	1
Ethylbenzene	ND		1.0		ug/L			04/10/18 14:12	1
2-Hexanone	ND		10		ug/L			04/10/18 14:12	1
Methylene Chloride	ND		1.0		ug/L			04/10/18 14:12	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/10/18 14:12	1
Styrene	ND		1.0		ug/L			04/10/18 14:12	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/10/18 14:12	1
Tetrachloroethene	ND		1.0		ug/L			04/10/18 14:12	1
Toluene	ND		1.0		ug/L			04/10/18 14:12	1
Trichloroethene	ND		1.0		ug/L			04/10/18 14:12	1
Vinyl chloride	ND		1.0		ug/L			04/10/18 14:12	1
Xylenes, Total	ND		2.0		ug/L			04/10/18 14:12	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/10/18 14:12	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/10/18 14:12	1
Cyclohexane	ND		1.0		ug/L			04/10/18 14:12	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/10/18 14:12	1
Ethylene Dibromide	ND		1.0		ug/L			04/10/18 14:12	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/10/18 14:12	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/10/18 14:12	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/10/18 14:12	1
Isopropylbenzene	ND		1.0		ug/L			04/10/18 14:12	1
Methyl acetate	ND		10		ug/L			04/10/18 14:12	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/10/18 14:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			04/10/18 14:12	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/10/18 14:12	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/10/18 14:12	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/10/18 14:12	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/10/18 14:12	1
Trichlorofluoromethane	ND		1.0		ug/L			04/10/18 14:12	1
Chlorodibromomethane	ND		1.0		ug/L			04/10/18 14:12	1
Methylcyclohexane	ND		1.0		ug/L			04/10/18 14:12	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: FB-2
Date Collected: 03/28/18 13:15
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-16
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		61 - 138		04/10/18 14:12	1
4-Bromofluorobenzene (Surr)	81		69 - 120		04/10/18 14:12	1
Toluene-d8 (Surr)	96		73 - 120		04/10/18 14:12	1
Dibromofluoromethane (Surr)	101		69 - 124		04/10/18 14:12	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: TRIP BLANK
Date Collected: 03/28/18 00:00
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-17
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10		ug/L			04/10/18 14:34	1
Benzene	ND		1.0		ug/L			04/10/18 14:34	1
Dichlorobromomethane	ND		1.0		ug/L			04/10/18 14:34	1
Bromoform	ND		1.0		ug/L			04/10/18 14:34	1
Bromomethane	ND		1.0		ug/L			04/10/18 14:34	1
2-Butanone (MEK)	ND		10		ug/L			04/10/18 14:34	1
Carbon disulfide	ND		1.0		ug/L			04/10/18 14:34	1
Carbon tetrachloride	ND		1.0		ug/L			04/10/18 14:34	1
Chlorobenzene	ND		1.0		ug/L			04/10/18 14:34	1
Chloroethane	ND		1.0		ug/L			04/10/18 14:34	1
Chloroform	ND		1.0		ug/L			04/10/18 14:34	1
Chloromethane	ND		1.0		ug/L			04/10/18 14:34	1
1,1-Dichloroethane	ND		1.0		ug/L			04/10/18 14:34	1
1,2-Dichloroethane	ND		1.0		ug/L			04/10/18 14:34	1
1,1-Dichloroethene	ND		1.0		ug/L			04/10/18 14:34	1
1,2-Dichloropropane	ND		1.0		ug/L			04/10/18 14:34	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/10/18 14:34	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/10/18 14:34	1
Ethylbenzene	ND		1.0		ug/L			04/10/18 14:34	1
2-Hexanone	ND		10		ug/L			04/10/18 14:34	1
Methylene Chloride	ND		1.0		ug/L			04/10/18 14:34	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/10/18 14:34	1
Styrene	ND		1.0		ug/L			04/10/18 14:34	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/10/18 14:34	1
Tetrachloroethene	ND		1.0		ug/L			04/10/18 14:34	1
Toluene	ND		1.0		ug/L			04/10/18 14:34	1
Trichloroethene	ND		1.0		ug/L			04/10/18 14:34	1
Vinyl chloride	ND		1.0		ug/L			04/10/18 14:34	1
Xylenes, Total	ND		2.0		ug/L			04/10/18 14:34	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/10/18 14:34	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/10/18 14:34	1
Cyclohexane	ND		1.0		ug/L			04/10/18 14:34	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/10/18 14:34	1
Ethylene Dibromide	ND		1.0		ug/L			04/10/18 14:34	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/10/18 14:34	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/10/18 14:34	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/10/18 14:34	1
Isopropylbenzene	ND		1.0		ug/L			04/10/18 14:34	1
Methyl acetate	ND		10		ug/L			04/10/18 14:34	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/10/18 14:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			04/10/18 14:34	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/10/18 14:34	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/10/18 14:34	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/10/18 14:34	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/10/18 14:34	1
Trichlorofluoromethane	ND		1.0		ug/L			04/10/18 14:34	1
Chlorodibromomethane	ND		1.0		ug/L			04/10/18 14:34	1
Methylcyclohexane	ND		1.0		ug/L			04/10/18 14:34	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: TRIP BLANK
Date Collected: 03/28/18 00:00
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-17
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		61 - 138		04/10/18 14:34	1
4-Bromofluorobenzene (Surr)	80		69 - 120		04/10/18 14:34	1
Toluene-d8 (Surr)	93		73 - 120		04/10/18 14:34	1
Dibromofluoromethane (Surr)	93		69 - 124		04/10/18 14:34	1

Client Sample ID: OW-6
Date Collected: 03/28/18 14:00
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-18
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**62**	F1	20	ug/L			04/10/18 13:18	2
Benzene	ND		2.0	ug/L			04/10/18 13:18	2
Dichlorobromomethane	ND		2.0	ug/L			04/10/18 13:18	2
Bromoform	ND		2.0	ug/L			04/10/18 13:18	2
Bromomethane	ND		2.0	ug/L			04/10/18 13:18	2
2-Butanone (MEK)	ND	F1	20	ug/L			04/10/18 13:18	2
Carbon disulfide	ND		2.0	ug/L			04/10/18 13:18	2
Carbon tetrachloride	ND		2.0	ug/L			04/10/18 13:18	2
Chlorobenzene	ND		2.0	ug/L			04/10/18 13:18	2
Chloroethane	ND		2.0	ug/L			04/10/18 13:18	2
Chloroform	ND		2.0	ug/L			04/10/18 13:18	2
Chloromethane	ND		2.0	ug/L			04/10/18 13:18	2
1,1-Dichloroethane	ND		2.0	ug/L			04/10/18 13:18	2
1,2-Dichloroethane	ND		2.0	ug/L			04/10/18 13:18	2
1,1-Dichloroethene	ND		2.0	ug/L			04/10/18 13:18	2
1,2-Dichloropropane	ND		2.0	ug/L			04/10/18 13:18	2
cis-1,3-Dichloropropene	ND		2.0	ug/L			04/10/18 13:18	2
trans-1,3-Dichloropropene	ND		2.0	ug/L			04/10/18 13:18	2
Ethylbenzene	ND		2.0	ug/L			04/10/18 13:18	2
2-Hexanone	ND		20	ug/L			04/10/18 13:18	2
Methylene Chloride	ND		2.0	ug/L			04/10/18 13:18	2
4-Methyl-2-pentanone (MIBK)	ND		20	ug/L			04/10/18 13:18	2
Styrene	ND		2.0	ug/L			04/10/18 13:18	2
1,1,2,2-Tetrachloroethane	ND		2.0	ug/L			04/10/18 13:18	2
Tetrachloroethene	**47**		2.0	ug/L			04/10/18 13:18	2
Toluene	ND		2.0	ug/L			04/10/18 13:18	2
Trichloroethene	**9.1**		2.0	ug/L			04/10/18 13:18	2
Vinyl chloride	ND		2.0	ug/L			04/10/18 13:18	2
Xylenes, Total	ND		4.0	ug/L			04/10/18 13:18	2
1,1,1-Trichloroethane	ND		2.0	ug/L			04/10/18 13:18	2
1,1,2-Trichloroethane	ND		2.0	ug/L			04/10/18 13:18	2
Cyclohexane	ND		2.0	ug/L			04/10/18 13:18	2
1,2-Dibromo-3-Chloropropane	ND		4.0	ug/L			04/10/18 13:18	2
Ethylene Dibromide	ND		2.0	ug/L			04/10/18 13:18	2
Dichlorodifluoromethane	ND		2.0	ug/L			04/10/18 13:18	2
cis-1,2-Dichloroethene	**17**		2.0	ug/L			04/10/18 13:18	2
trans-1,2-Dichloroethene	ND		2.0	ug/L			04/10/18 13:18	2
Isopropylbenzene	ND		2.0	ug/L			04/10/18 13:18	2
Methyl acetate	ND		20	ug/L			04/10/18 13:18	2
Methyl tert-butyl ether	ND		2.0	ug/L			04/10/18 13:18	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	ug/L			04/10/18 13:18	2
1,2,4-Trichlorobenzene	ND		2.0	ug/L			04/10/18 13:18	2
1,2-Dichlorobenzene	ND		2.0	ug/L			04/10/18 13:18	2
1,3-Dichlorobenzene	ND		2.0	ug/L			04/10/18 13:18	2
1,4-Dichlorobenzene	ND		2.0	ug/L			04/10/18 13:18	2
Trichlorofluoromethane	ND		2.0	ug/L			04/10/18 13:18	2
Chlorodibromomethane	ND		2.0	ug/L			04/10/18 13:18	2
Methylcyclohexane	ND		2.0	ug/L			04/10/18 13:18	2

BNQ 7/2/18 MS/MSD

MEK nondetect UJ for MS/MSD low

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-6
Date Collected: 03/28/18 14:00
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-18
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		61 - 138		04/10/18 13:18	2
4-Bromofluorobenzene (Surr)	86		69 - 120		04/10/18 13:18	2
Toluene-d8 (Surr)	91		73 - 120		04/10/18 13:18	2
Dibromofluoromethane (Surr)	94		69 - 124		04/10/18 13:18	2

Client Sample ID: OW-5
Date Collected: 03/28/18 14:55
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-19
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10		ug/L			04/10/18 14:56	1
Benzene	ND		1.0		ug/L			04/10/18 14:56	1
Dichlorobromomethane	ND		1.0		ug/L			04/10/18 14:56	1
Bromoform	ND		1.0		ug/L			04/10/18 14:56	1
Bromomethane	ND		1.0		ug/L			04/10/18 14:56	1
2-Butanone (MEK)	ND		10		ug/L			04/10/18 14:56	1
Carbon disulfide	ND		1.0		ug/L			04/10/18 14:56	1
Carbon tetrachloride	ND		1.0		ug/L			04/10/18 14:56	1
Chlorobenzene	ND		1.0		ug/L			04/10/18 14:56	1
Chloroethane	ND		1.0		ug/L			04/10/18 14:56	1
Chloroform	ND		1.0		ug/L			04/10/18 14:56	1
Chloromethane	ND		1.0		ug/L			04/10/18 14:56	1
1,1-Dichloroethane	ND		1.0		ug/L			04/10/18 14:56	1
1,2-Dichloroethane	ND		1.0		ug/L			04/10/18 14:56	1
1,1-Dichloroethene	ND		1.0		ug/L			04/10/18 14:56	1
1,2-Dichloropropane	ND		1.0		ug/L			04/10/18 14:56	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/10/18 14:56	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/10/18 14:56	1
Ethylbenzene	ND		1.0		ug/L			04/10/18 14:56	1
2-Hexanone	ND		10		ug/L			04/10/18 14:56	1
Methylene Chloride	ND		1.0		ug/L			04/10/18 14:56	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/10/18 14:56	1
Styrene	ND		1.0		ug/L			04/10/18 14:56	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/10/18 14:56	1
Tetrachloroethene	**18**		1.0		ug/L			04/10/18 14:56	1
Toluene	ND		1.0		ug/L			04/10/18 14:56	1
Trichloroethene	**4.2**		1.0		ug/L			04/10/18 14:56	1
Vinyl chloride	ND		1.0		ug/L			04/10/18 14:56	1
Xylenes, Total	ND		2.0		ug/L			04/10/18 14:56	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/10/18 14:56	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/10/18 14:56	1
Cyclohexane	ND		1.0		ug/L			04/10/18 14:56	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/10/18 14:56	1
Ethylene Dibromide	ND		1.0		ug/L			04/10/18 14:56	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/10/18 14:56	1
cis-1,2-Dichloroethene	**14**		1.0		ug/L			04/10/18 14:56	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/10/18 14:56	1
Isopropylbenzene	ND		1.0		ug/L			04/10/18 14:56	1
Methyl acetate	ND		10		ug/L			04/10/18 14:56	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/10/18 14:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			04/10/18 14:56	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/10/18 14:56	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/10/18 14:56	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/10/18 14:56	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/10/18 14:56	1
Trichlorofluoromethane	ND		1.0		ug/L			04/10/18 14:56	1
Chlorodibromomethane	ND		1.0		ug/L			04/10/18 14:56	1
Methylcyclohexane	ND		1.0		ug/L			04/10/18 14:56	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-5
Date Collected: 03/28/18 14:55
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-19
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		61 - 138		04/10/18 14:56	1
4-Bromofluorobenzene (Surr)	80		69 - 120		04/10/18 14:56	1
Toluene-d8 (Surr)	91		73 - 120		04/10/18 14:56	1
Dibromofluoromethane (Surr)	94		69 - 124		04/10/18 14:56	1

Client Sample ID: OW-5 DUP
Date Collected: 03/28/18 14:55
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-20
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10		ug/L			04/10/18 15:18	1
Benzene	ND		1.0		ug/L			04/10/18 15:18	1
Dichlorobromomethane	ND		1.0		ug/L			04/10/18 15:18	1
Bromoform	ND		1.0		ug/L			04/10/18 15:18	1
Bromomethane	ND		1.0		ug/L			04/10/18 15:18	1
2-Butanone (MEK)	ND		10		ug/L			04/10/18 15:18	1
Carbon disulfide	ND		1.0		ug/L			04/10/18 15:18	1
Carbon tetrachloride	ND		1.0		ug/L			04/10/18 15:18	1
Chlorobenzene	ND		1.0		ug/L			04/10/18 15:18	1
Chloroethane	ND		1.0		ug/L			04/10/18 15:18	1
Chloroform	ND		1.0		ug/L			04/10/18 15:18	1
Chloromethane	ND		1.0		ug/L			04/10/18 15:18	1
1,1-Dichloroethane	ND		1.0		ug/L			04/10/18 15:18	1
1,2-Dichloroethane	ND		1.0		ug/L			04/10/18 15:18	1
1,1-Dichloroethene	ND		1.0		ug/L			04/10/18 15:18	1
1,2-Dichloropropane	ND		1.0		ug/L			04/10/18 15:18	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/10/18 15:18	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/10/18 15:18	1
Ethylbenzene	ND		1.0		ug/L			04/10/18 15:18	1
2-Hexanone	ND		10		ug/L			04/10/18 15:18	1
Methylene Chloride	ND		1.0		ug/L			04/10/18 15:18	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/10/18 15:18	1
Styrene	ND		1.0		ug/L			04/10/18 15:18	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/10/18 15:18	1
Tetrachloroethene	**18**		1.0		ug/L			04/10/18 15:18	1
Toluene	ND		1.0		ug/L			04/10/18 15:18	1
Trichloroethene	**4.3**		1.0		ug/L			04/10/18 15:18	1
Vinyl chloride	ND		1.0		ug/L			04/10/18 15:18	1
Xylenes, Total	ND		2.0		ug/L			04/10/18 15:18	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/10/18 15:18	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/10/18 15:18	1
Cyclohexane	ND		1.0		ug/L			04/10/18 15:18	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/10/18 15:18	1
Ethylene Dibromide	ND		1.0		ug/L			04/10/18 15:18	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/10/18 15:18	1
cis-1,2-Dichloroethene	**14**		1.0		ug/L			04/10/18 15:18	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/10/18 15:18	1
Isopropylbenzene	ND		1.0		ug/L			04/10/18 15:18	1
Methyl acetate	ND		10		ug/L			04/10/18 15:18	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/10/18 15:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			04/10/18 15:18	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/10/18 15:18	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/10/18 15:18	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/10/18 15:18	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/10/18 15:18	1
Trichlorofluoromethane	ND		1.0		ug/L			04/10/18 15:18	1
Chlorodibromomethane	ND		1.0		ug/L			04/10/18 15:18	1
Methylcyclohexane	ND		1.0		ug/L			04/10/18 15:18	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-5 DUP
Date Collected: 03/28/18 14:55
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-20
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		61 - 138		04/10/18 15:18	1
4-Bromofluorobenzene (Surr)	80		69 - 120		04/10/18 15:18	1
Toluene-d8 (Surr)	92		73 - 120		04/10/18 15:18	1
Dibromofluoromethane (Surr)	93		69 - 124		04/10/18 15:18	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-13R
Date Collected: 03/28/18 16:00
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-21
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10		ug/L			04/10/18 15:40	1
Benzene	**3.4**		1.0		ug/L			04/10/18 15:40	1
Dichlorobromomethane	ND		1.0		ug/L			04/10/18 15:40	1
Bromoform	ND		1.0		ug/L			04/10/18 15:40	1
Bromomethane	ND		1.0		ug/L			04/10/18 15:40	1
2-Butanone (MEK)	ND		10		ug/L			04/10/18 15:40	1
Carbon disulfide	ND		1.0		ug/L			04/10/18 15:40	1
Carbon tetrachloride	ND		1.0		ug/L			04/10/18 15:40	1
Chlorobenzene	ND		1.0		ug/L			04/10/18 15:40	1
Chloroethane	ND		1.0		ug/L			04/10/18 15:40	1
Chloroform	ND		1.0		ug/L			04/10/18 15:40	1
Chloromethane	ND		1.0		ug/L			04/10/18 15:40	1
1,1-Dichloroethane	ND		1.0		ug/L			04/10/18 15:40	1
1,2-Dichloroethane	ND		1.0		ug/L			04/10/18 15:40	1
1,1-Dichloroethene	ND		1.0		ug/L			04/10/18 15:40	1
1,2-Dichloropropane	ND		1.0		ug/L			04/10/18 15:40	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/10/18 15:40	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/10/18 15:40	1
Ethylbenzene	ND		1.0		ug/L			04/10/18 15:40	1
2-Hexanone	ND		10		ug/L			04/10/18 15:40	1
Methylene Chloride	ND		1.0		ug/L			04/10/18 15:40	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/10/18 15:40	1
Styrene	ND		1.0		ug/L			04/10/18 15:40	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/10/18 15:40	1
Tetrachloroethene	ND		1.0		ug/L			04/10/18 15:40	1
Toluene	ND		1.0		ug/L			04/10/18 15:40	1
Trichloroethene	ND		1.0		ug/L			04/10/18 15:40	1
Vinyl chloride	ND		1.0		ug/L			04/10/18 15:40	1
Xylenes, Total	ND		2.0		ug/L			04/10/18 15:40	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/10/18 15:40	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/10/18 15:40	1
Cyclohexane	ND		1.0		ug/L			04/10/18 15:40	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/10/18 15:40	1
Ethylene Dibromide	ND		1.0		ug/L			04/10/18 15:40	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/10/18 15:40	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/10/18 15:40	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/10/18 15:40	1
Isopropylbenzene	ND		1.0		ug/L			04/10/18 15:40	1
Methyl acetate	ND		10		ug/L			04/10/18 15:40	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/10/18 15:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			04/10/18 15:40	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/10/18 15:40	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/10/18 15:40	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/10/18 15:40	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/10/18 15:40	1
Trichlorofluoromethane	ND		1.0		ug/L			04/10/18 15:40	1
Chlorodibromomethane	ND		1.0		ug/L			04/10/18 15:40	1
Methylcyclohexane	ND		1.0		ug/L			04/10/18 15:40	1

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-13R
Date Collected: 03/28/18 16:00
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-21
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		61 - 138		04/10/18 15:40	1
4-Bromofluorobenzene (Surr)	84		69 - 120		04/10/18 15:40	1
Toluene-d8 (Surr)	91		73 - 120		04/10/18 15:40	1
Dibromofluoromethane (Surr)	93		69 - 124		04/10/18 15:40	1

Surrogate Summary

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(61-127)	(61-132)	(66-125)	(43-131)
240-93471-10	SED-1	82	133 * X	125	93
240-93471-10 MS	SED-1	80	130	123	95
240-93471-10 MSD	SED-1	77	129	124	93
240-93471-12	SED-2	117	154 * X	149 X	118
240-93471-13	SED-2 DUP	83	141 * X	128 X	95
LCS 240-320926/4	Lab Control Sample	91	104	108	100
MB 240-320926/5	Method Blank	92	102	108	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(61-138)	(69-120)	(73-120)	(69-124)
240-93471-1	OW-24	99	85	107	103
240-93471-2	OW-18	85	75	96	96
240-93471-3	OW-19	92	80	108	103
240-93471-4	RINSATE BLANK	98	80	112	107
240-93471-5	FIELD BLANK 1	91	73	98	95
240-93471-6	OW-10R	92	74	93	93
240-93471-7	OW-21	95	79	106	101
240-93471-8	SW-1	87	89	98	99
240-93471-9	SW-1 DUP	89	90	101	99
240-93471-11	SW-2	88	85	95	91
240-93471-11 MS	SW-2	94	89	97	95
240-93471-11 MSD	SW-2	96	93	103	104
240-93471-14	OW-22	97	81	91	100
240-93471-15	OW-2	93	80	93	91
240-93471-16	FB-2	102	81	96	101
240-93471-17	TRIP BLANK	96	80	93	93
240-93471-18	OW-6	113	86	91	94
240-93471-18 MS	OW-6	91	91	97	96
240-93471-18 MSD	OW-6	91	93	98	95
240-93471-19	OW-5	91	80	91	94
240-93471-20	OW-5 DUP	95	80	92	93
240-93471-21	OW-13R	111	84	91	93
LCS 240-321360/4	Lab Control Sample	85	90	102	101
LCS 240-321646/4	Lab Control Sample	99	80	108	101
LCS 240-321714/4	Lab Control Sample	97	91	99	99
LCS 240-321895/4	Lab Control Sample	101	96	101	101
MB 240-321360/6	Method Blank	89	88	92	94
MB 240-321646/6	Method Blank	91	77	100	97
MB 240-321714/6	Method Blank	100	81	94	93

Surrogate Summary

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

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

		Percent Surrogate Recovery (Acceptance Limits)							
		DCA	BFB	TOL	DBFM				
Lab Sample ID	Client Sample ID	(61-138)	(69-120)	(73-120)	(69-124)				
MB 240-321895/6	Method Blank	95	82	93	91				

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-320926/5
Matrix: Solid
Analysis Batch: 320926

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		5.0		ug/Kg			04/02/18 12:08	1
1,2-Dichloroethane	ND		5.0		ug/Kg			04/02/18 12:08	1
1,1-Dichloroethene	ND		5.0		ug/Kg			04/02/18 12:08	1
1,2-Dichloropropane	ND		5.0		ug/Kg			04/02/18 12:08	1
Acetone	ND		20		ug/Kg			04/02/18 12:08	1
Benzene	ND		5.0		ug/Kg			04/02/18 12:08	1
Bromoform	ND		5.0		ug/Kg			04/02/18 12:08	1
2-Hexanone	ND		20		ug/Kg			04/02/18 12:08	1
Bromomethane	ND		5.0		ug/Kg			04/02/18 12:08	1
Carbon disulfide	ND		5.0		ug/Kg			04/02/18 12:08	1
Carbon tetrachloride	ND		5.0		ug/Kg			04/02/18 12:08	1
Chlorobenzene	ND		5.0		ug/Kg			04/02/18 12:08	1
1,1,2,2-Tetrachloroethane	ND		5.0		ug/Kg			04/02/18 12:08	1
Chloroethane	ND		5.0		ug/Kg			04/02/18 12:08	1
Chloroform	ND		5.0		ug/Kg			04/02/18 12:08	1
Chloromethane	ND		5.0		ug/Kg			04/02/18 12:08	1
cis-1,3-Dichloropropene	ND		5.0		ug/Kg			04/02/18 12:08	1
1,1,1-Trichloroethane	ND		5.0		ug/Kg			04/02/18 12:08	1
Dichlorobromomethane	ND		5.0		ug/Kg			04/02/18 12:08	1
1,1,2-Trichloroethane	ND		5.0		ug/Kg			04/02/18 12:08	1
Cyclohexane	ND		10		ug/Kg			04/02/18 12:08	1
Ethylbenzene	ND		5.0		ug/Kg			04/02/18 12:08	1
1,2-Dibromo-3-Chloropropane	ND		10		ug/Kg			04/02/18 12:08	1
Ethylene Dibromide	ND		5.0		ug/Kg			04/02/18 12:08	1
Dichlorodifluoromethane	ND		5.0		ug/Kg			04/02/18 12:08	1
cis-1,2-Dichloroethene	ND		5.0		ug/Kg			04/02/18 12:08	1
2-Butanone (MEK)	ND		20		ug/Kg			04/02/18 12:08	1
4-Methyl-2-pentanone (MIBK)	ND		20		ug/Kg			04/02/18 12:08	1
Isopropylbenzene	ND		5.0		ug/Kg			04/02/18 12:08	1
Methyl acetate	ND		25		ug/Kg			04/02/18 12:08	1
Methyl tert-butyl ether	ND		5.0		ug/Kg			04/02/18 12:08	1
Methylene Chloride	10.3		5.0		ug/Kg			04/02/18 12:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0		ug/Kg			04/02/18 12:08	1
1,2,4-Trichlorobenzene	ND		5.0		ug/Kg			04/02/18 12:08	1
Styrene	ND		5.0		ug/Kg			04/02/18 12:08	1
1,2-Dichlorobenzene	ND		5.0		ug/Kg			04/02/18 12:08	1
Tetrachloroethene	ND		5.0		ug/Kg			04/02/18 12:08	1
1,3-Dichlorobenzene	ND		5.0		ug/Kg			04/02/18 12:08	1
Toluene	ND		5.0		ug/Kg			04/02/18 12:08	1
1,4-Dichlorobenzene	ND		5.0		ug/Kg			04/02/18 12:08	1
trans-1,2-Dichloroethene	ND		5.0		ug/Kg			04/02/18 12:08	1
trans-1,3-Dichloropropene	ND		5.0		ug/Kg			04/02/18 12:08	1
Trichloroethene	ND		5.0		ug/Kg			04/02/18 12:08	1
Trichlorofluoromethane	ND		5.0		ug/Kg			04/02/18 12:08	1
Vinyl chloride	ND		5.0		ug/Kg			04/02/18 12:08	1
Xylenes, Total	ND		10		ug/Kg			04/02/18 12:08	1
Methylcyclohexane	ND		10		ug/Kg			04/02/18 12:08	1
Chlorodibromomethane	ND		5.0		ug/Kg			04/02/18 12:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*92*		*61 - 127*		*04/02/18 12:08*	*1*
4-Bromofluorobenzene (Surr)	*102*		*61 - 132*		*04/02/18 12:08*	*1*
Toluene-d8 (Surr)	*108*		*66 - 125*		*04/02/18 12:08*	*1*
Dibromofluoromethane (Surr)	*99*		*43 - 131*		*04/02/18 12:08*	*1*

Lab Sample ID: LCS 240-320926/4
Matrix: Solid
Analysis Batch: 320926

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	50.0	45.3		ug/Kg		91	72 - 120
1,2-Dichloroethane	50.0	41.6		ug/Kg		83	71 - 120
1,1-Dichloroethene	50.0	43.7		ug/Kg		87	58 - 130
1,2-Dichloropropane	50.0	44.3		ug/Kg		89	78 - 122
Acetone	100	71.2		ug/Kg		71	24 - 125
Benzene	50.0	44.4		ug/Kg		89	77 - 120
Bromoform	50.0	46.5		ug/Kg		93	40 - 140
2-Hexanone	100	83.9		ug/Kg		84	52 - 129
Bromomethane	20.0	18.2		ug/Kg		91	10 - 153
Carbon disulfide	50.0	42.0		ug/Kg		84	17 - 163
Carbon tetrachloride	50.0	49.7		ug/Kg		99	43 - 144
Chlorobenzene	50.0	44.9		ug/Kg		90	76 - 120
1,1,2,2-Tetrachloroethane	50.0	42.2		ug/Kg		84	78 - 120
Chloroethane	20.0	15.5		ug/Kg		78	10 - 166
Chloroform	50.0	44.4		ug/Kg		89	74 - 120
Chloromethane	20.0	16.2		ug/Kg		81	41 - 124
cis-1,3-Dichloropropene	50.0	45.6		ug/Kg		91	66 - 126
1,1,1-Trichloroethane	50.0	46.4		ug/Kg		93	60 - 136
Dichlorobromomethane	50.0	45.1		ug/Kg		90	61 - 132
1,1,2-Trichloroethane	50.0	42.3		ug/Kg		85	80 - 120
Cyclohexane	50.0	43.9		ug/Kg		88	66 - 129
Ethylbenzene	50.0	45.8		ug/Kg		92	76 - 120
1,2-Dibromo-3-Chloropropane	50.0	41.8		ug/Kg		84	40 - 133
Ethylene Dibromide	50.0	41.4		ug/Kg		83	80 - 120
Dichlorodifluoromethane	20.0	14.1		ug/Kg		70	15 - 127
cis-1,2-Dichloroethene	50.0	44.4		ug/Kg		89	78 - 120
2-Butanone (MEK)	100	68.9		ug/Kg		69	51 - 120
4-Methyl-2-pentanone (MIBK)	100	82.8		ug/Kg		83	65 - 131
Isopropylbenzene	50.0	46.9		ug/Kg		94	76 - 124
Methyl acetate	100	77.0		ug/Kg		77	63 - 126
Methyl tert-butyl ether	50.0	39.9		ug/Kg		80	68 - 129
Methylene Chloride	50.0	48.5		ug/Kg		97	64 - 126
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	42.8		ug/Kg		86	64 - 125
1,2,4-Trichlorobenzene	50.0	43.6		ug/Kg		87	60 - 124
Styrene	50.0	45.4		ug/Kg		91	80 - 120
1,2-Dichlorobenzene	50.0	44.0		ug/Kg		88	75 - 120
Tetrachloroethene	50.0	47.1		ug/Kg		94	68 - 122
1,3-Dichlorobenzene	50.0	45.6		ug/Kg		91	72 - 120
Toluene	50.0	44.3		ug/Kg		89	74 - 120
1,4-Dichlorobenzene	50.0	46.4		ug/Kg		93	71 - 120
trans-1,2-Dichloroethene	50.0	45.7		ug/Kg		91	74 - 124
trans-1,3-Dichloropropene	50.0	42.3		ug/Kg		85	55 - 121
Trichloroethene	50.0	45.3		ug/Kg		91	73 - 123

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-320926/4
Matrix: Solid
Analysis Batch: 320926

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	20.0	17.3		ug/Kg		87	28 - 152
Vinyl chloride	20.0	17.1		ug/Kg		85	49 - 131
Xylenes, Total	100	90.6		ug/Kg		91	78 - 120
Methylcyclohexane	50.0	42.4		ug/Kg		85	71 - 126
m-Xylene & p-Xylene	50.0	45.3		ug/Kg		91	78 - 120
Chlorodibromomethane	50.0	46.9		ug/Kg		94	46 - 125
o-Xylene	50.0	45.3		ug/Kg		91	77 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*61 - 127*
4-Bromofluorobenzene (Surr)	*104*		*61 - 132*
Toluene-d8 (Surr)	*108*		*66 - 125*
Dibromofluoromethane (Surr)	*100*		*43 - 131*

Lab Sample ID: 240-93471-10 MS
Matrix: Solid
Analysis Batch: 320926

Client Sample ID: SED-1
Prep Type: Total/NA
Prep Batch: 320940

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		494	462		ug/Kg	☼	93	33 - 130
1,1,2,2-Tetrachloroethane	ND	*	494	507		ug/Kg	☼	103	16 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		494	454		ug/Kg	☼	92	26 - 130
1,1,2-Trichloroethane	ND		494	425		ug/Kg	☼	86	19 - 137
1,1-Dichloroethane	ND		494	466		ug/Kg	☼	94	41 - 122
1,1-Dichloroethene	ND		494	522		ug/Kg	☼	106	30 - 139
1,2,4-Trichlorobenzene	ND	*	494	219		ug/Kg	☼	44	10 - 120
1,2-Dibromo-3-Chloropropane	ND	*	494	338		ug/Kg	☼	68	10 - 128
1,2-Dichlorobenzene	ND	*	494	431		ug/Kg	☼	87	10 - 120
1,2-Dichloroethane	ND		494	411		ug/Kg	☼	82	35 - 122
1,2-Dichloropropane	ND		494	438		ug/Kg	☼	89	38 - 130
1,3-Dichlorobenzene	ND	*	494	506		ug/Kg	☼	102	10 - 120
1,4-Dichlorobenzene	ND	*	494	493		ug/Kg	☼	100	10 - 120
2-Hexanone	ND		988	663		ug/Kg	☼	67	21 - 136
Acetone	280		988	866		ug/Kg	☼	59	15 - 127
Benzene	ND		494	454		ug/Kg	☼	92	33 - 127
Bromoform	ND		494	219		ug/Kg	☼	44	10 - 120
Bromomethane	ND		198	144		ug/Kg	☼	73	13 - 138
Carbon disulfide	ND		494	463		ug/Kg	☼	93	15 - 131
Carbon tetrachloride	ND		494	228		ug/Kg	☼	46	17 - 127
Chlorobenzene	ND		494	474		ug/Kg	☼	96	15 - 122
Chloroethane	ND		198	194		ug/Kg	☼	94	15 - 148
Chloroform	ND		494	465		ug/Kg	☼	94	41 - 121
Chloromethane	ND		198	165		ug/Kg	☼	84	33 - 122
cis-1,2-Dichloroethene	ND		494	462		ug/Kg	☼	92	46 - 120
cis-1,3-Dichloropropene	ND		494	321		ug/Kg	☼	65	13 - 127
Cyclohexane	ND		494	435		ug/Kg	☼	88	22 - 135
Dichlorobromomethane	ND		494	313		ug/Kg	☼	63	22 - 127

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-93471-10 MS
Matrix: Solid
Analysis Batch: 320926

Client Sample ID: SED-1
Prep Type: Total/NA
Prep Batch: 320940

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	ND		198	149		ug/Kg	☼	76	10 - 126
Ethylbenzene	ND		494	501		ug/Kg	☼	101	18 - 126
Ethylene Dibromide	ND		494	395		ug/Kg	☼	80	25 - 137
m-Xylene & p-Xylene	ND		494	482		ug/Kg	☼	98	10 - 136
Isopropylbenzene	ND		494	465		ug/Kg	☼	94	10 - 128
Methyl acetate	ND		988	572		ug/Kg	☼	58	14 - 151
2-Butanone (MEK)	ND		988	644		ug/Kg	☼	56	29 - 127
4-Methyl-2-pentanone (MIBK)	ND		988	736		ug/Kg	☼	74	16 - 164
Methyl tert-butyl ether	ND		494	360		ug/Kg	☼	73	49 - 134
Methylene Chloride	160	B	494	625		ug/Kg	☼	94	34 - 134
o-Xylene	ND		494	467		ug/Kg	☼	95	17 - 128
Styrene	ND		494	412		ug/Kg	☼	83	10 - 128
Tetrachloroethene	ND		494	504		ug/Kg	☼	102	17 - 126
Toluene	ND		494	520		ug/Kg	☼	105	29 - 127
trans-1,2-Dichloroethene	ND		494	489		ug/Kg	☼	99	32 - 134
trans-1,3-Dichloropropene	ND		494	318		ug/Kg	☼	64	11 - 120
Trichloroethene	ND		494	454		ug/Kg	☼	92	10 - 160
Trichlorofluoromethane	ND		198	183		ug/Kg	☼	93	24 - 137
Vinyl chloride	ND		198	182		ug/Kg	☼	89	31 - 134
Xylenes, Total	ND		988	949		ug/Kg	☼	96	10 - 137
Methylcyclohexane	ND		494	346		ug/Kg	☼	70	13 - 134
Chlorodibromomethane	ND		494	303		ug/Kg	☼	61	19 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*80*		*61 - 127*
4-Bromofluorobenzene (Surr)	*130*		*61 - 132*
Toluene-d8 (Surr)	*123*		*66 - 125*
Dibromofluoromethane (Surr)	*95*		*43 - 131*

Lab Sample ID: 240-93471-10 MSD
Matrix: Solid
Analysis Batch: 320926

Client Sample ID: SED-1
Prep Type: Total/NA
Prep Batch: 320940

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		453	390		ug/Kg	☼	86	33 - 130	17	40
1,1,2,2-Tetrachloroethane	ND	*	453	436		ug/Kg	☼	96	16 - 157	15	40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		453	379		ug/Kg	☼	84	26 - 130	18	40
1,1,2-Trichloroethane	ND		453	379		ug/Kg	☼	84	19 - 137	11	40
1,1-Dichloroethane	ND		453	406		ug/Kg	☼	90	41 - 122	14	40
1,1-Dichloroethene	ND		453	421		ug/Kg	☼	93	30 - 139	21	40
1,2,4-Trichlorobenzene	ND	*	453	205		ug/Kg	☼	45	10 - 120	6	40
1,2-Dibromo-3-Chloropropane	ND	*	453	305		ug/Kg	☼	67	10 - 128	10	40
1,2-Dichlorobenzene	ND	*	453	378		ug/Kg	☼	84	10 - 120	13	40
1,2-Dichloroethane	ND		453	358		ug/Kg	☼	78	35 - 122	14	40
1,2-Dichloropropane	ND		453	380		ug/Kg	☼	84	38 - 130	14	40
1,3-Dichlorobenzene	ND	*	453	449		ug/Kg	☼	99	10 - 120	12	40
1,4-Dichlorobenzene	ND	*	453	442		ug/Kg	☼	98	10 - 120	11	40

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-93471-10 MSD
Matrix: Solid
Analysis Batch: 320926

Client Sample ID: SED-1
Prep Type: Total/NA
Prep Batch: 320940

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Hexanone	ND		906	594		ug/Kg	☼	66	21 - 136	11	40
Acetone	280		906	706		ug/Kg	☼	47	15 - 127	20	40
Benzene	ND		453	395		ug/Kg	☼	87	33 - 127	14	40
Bromoform	ND		453	195		ug/Kg	☼	43	10 - 120	12	40
Bromomethane	ND		181	127		ug/Kg	☼	70	13 - 138	13	40
Carbon disulfide	ND		453	369		ug/Kg	☼	81	15 - 131	22	40
Carbon tetrachloride	ND		453	193		ug/Kg	☼	43	17 - 127	16	40
Chlorobenzene	ND		453	421		ug/Kg	☼	93	15 - 122	12	40
Chloroethane	ND		181	181		ug/Kg	☼	95	15 - 148	7	40
Chloroform	ND		453	411		ug/Kg	☼	91	41 - 121	12	40
Chloromethane	ND		181	156		ug/Kg	☼	86	33 - 122	5	40
cis-1,2-Dichloroethene	ND		453	411		ug/Kg	☼	89	46 - 120	12	40
cis-1,3-Dichloropropene	ND		453	276		ug/Kg	☼	61	13 - 127	15	40
Cyclohexane	ND		453	371		ug/Kg	☼	82	22 - 135	16	40
Dichlorobromomethane	ND		453	274		ug/Kg	☼	60	22 - 127	13	40
Dichlorodifluoromethane	ND		181	144		ug/Kg	☼	80	10 - 126	4	40
Ethylbenzene	ND		453	426		ug/Kg	☼	94	18 - 126	16	40
Ethylene Dibromide	ND		453	350		ug/Kg	☼	77	25 - 137	12	40
m-Xylene & p-Xylene	ND		453	425		ug/Kg	☼	94	10 - 136	13	40
Isopropylbenzene	ND		453	408		ug/Kg	☼	90	10 - 128	13	40
Methyl acetate	ND		906	487		ug/Kg	☼	54	14 - 151	16	40
2-Butanone (MEK)	ND		906	564		ug/Kg	☼	52	29 - 127	13	40
4-Methyl-2-pentanone (MIBK)	ND		906	649		ug/Kg	☼	72	16 - 164	13	40
Methyl tert-butyl ether	ND		453	328		ug/Kg	☼	72	49 - 134	9	40
Methylene Chloride	160	B	453	524		ug/Kg	☼	80	34 - 134	18	40
o-Xylene	ND		453	411		ug/Kg	☼	91	17 - 128	13	40
Styrene	ND		453	361		ug/Kg	☼	80	10 - 128	13	40
Tetrachloroethene	ND		453	448		ug/Kg	☼	99	17 - 126	12	40
Toluene	ND		453	461		ug/Kg	☼	102	29 - 127	12	40
trans-1,2-Dichloroethene	ND		453	415		ug/Kg	☼	92	32 - 134	17	40
trans-1,3-Dichloropropene	ND		453	280		ug/Kg	☼	62	11 - 120	13	40
Trichloroethene	ND		453	388		ug/Kg	☼	86	10 - 160	16	40
Trichlorofluoromethane	ND		181	170		ug/Kg	☼	94	24 - 137	7	40
Vinyl chloride	ND		181	173		ug/Kg	☼	92	31 - 134	5	40
Xylenes, Total	ND		906	836		ug/Kg	☼	92	10 - 137	13	40
Methylcyclohexane	ND		453	294		ug/Kg	☼	65	13 - 134	16	40
Chlorodibromomethane	ND		453	264		ug/Kg	☼	58	19 - 120	14	40

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*77*		*61 - 127*
4-Bromofluorobenzene (Surr)	*129*		*61 - 132*
Toluene-d8 (Surr)	*124*		*66 - 125*
Dibromofluoromethane (Surr)	*93*		*43 - 131*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-321360/6
Matrix: Water
Analysis Batch: 321360

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		1.0		ug/L			04/05/18 13:35	1
1,2-Dichloroethane	ND		1.0		ug/L			04/05/18 13:35	1
1,1-Dichloroethene	ND		1.0		ug/L			04/05/18 13:35	1
1,2-Dichloropropane	ND		1.0		ug/L			04/05/18 13:35	1
Acetone	ND		10		ug/L			04/05/18 13:35	1
Benzene	ND		1.0		ug/L			04/05/18 13:35	1
Bromoform	ND		1.0		ug/L			04/05/18 13:35	1
2-Hexanone	ND		10		ug/L			04/05/18 13:35	1
Bromomethane	ND		1.0		ug/L			04/05/18 13:35	1
Carbon disulfide	ND		1.0		ug/L			04/05/18 13:35	1
Carbon tetrachloride	ND		1.0		ug/L			04/05/18 13:35	1
Chlorobenzene	ND		1.0		ug/L			04/05/18 13:35	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/05/18 13:35	1
Chloroethane	ND		1.0		ug/L			04/05/18 13:35	1
Chloroform	ND		1.0		ug/L			04/05/18 13:35	1
Chloromethane	ND		1.0		ug/L			04/05/18 13:35	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/05/18 13:35	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/05/18 13:35	1
Dichlorobromomethane	ND		1.0		ug/L			04/05/18 13:35	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/05/18 13:35	1
Cyclohexane	ND		1.0		ug/L			04/05/18 13:35	1
Ethylbenzene	ND		1.0		ug/L			04/05/18 13:35	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/05/18 13:35	1
Ethylene Dibromide	ND		1.0		ug/L			04/05/18 13:35	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/05/18 13:35	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/05/18 13:35	1
2-Butanone (MEK)	ND		10		ug/L			04/05/18 13:35	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/05/18 13:35	1
Isopropylbenzene	ND		1.0		ug/L			04/05/18 13:35	1
Methyl acetate	ND		10		ug/L			04/05/18 13:35	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/05/18 13:35	1
Methylene Chloride	ND		1.0		ug/L			04/05/18 13:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			04/05/18 13:35	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/05/18 13:35	1
Styrene	ND		1.0		ug/L			04/05/18 13:35	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/05/18 13:35	1
Tetrachloroethene	ND		1.0		ug/L			04/05/18 13:35	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/05/18 13:35	1
Toluene	ND		1.0		ug/L			04/05/18 13:35	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/05/18 13:35	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/05/18 13:35	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/05/18 13:35	1
Trichloroethene	ND		1.0		ug/L			04/05/18 13:35	1
Trichlorofluoromethane	ND		1.0		ug/L			04/05/18 13:35	1
Vinyl chloride	ND		1.0		ug/L			04/05/18 13:35	1
Xylenes, Total	ND		2.0		ug/L			04/05/18 13:35	1
Methylcyclohexane	ND		1.0		ug/L			04/05/18 13:35	1
Chlorodibromomethane	ND		1.0		ug/L			04/05/18 13:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*89*		*61 - 138*		*04/05/18 13:35*	*1*
4-Bromofluorobenzene (Surr)	*88*		*69 - 120*		*04/05/18 13:35*	*1*
Toluene-d8 (Surr)	*92*		*73 - 120*		*04/05/18 13:35*	*1*
Dibromofluoromethane (Surr)	*94*		*69 - 124*		*04/05/18 13:35*	*1*

Lab Sample ID: LCS 240-321360/4
Matrix: Water
Analysis Batch: 321360

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	10.0	10.3		ug/L		103	74 - 120
1,2-Dichloroethane	10.0	10.4		ug/L		104	68 - 133
1,1-Dichloroethene	10.0	10.9		ug/L		109	65 - 127
1,2-Dichloropropane	10.0	9.30		ug/L		93	78 - 127
Acetone	20.0	14.7		ug/L		73	35 - 131
Benzene	10.0	9.62		ug/L		96	79 - 120
Bromoform	10.0	10.1		ug/L		101	55 - 145
2-Hexanone	20.0	15.4		ug/L		77	28 - 169
Bromomethane	10.0	11.1		ug/L		111	17 - 158
Carbon disulfide	10.0	11.2		ug/L		112	49 - 141
Carbon tetrachloride	10.0	11.7		ug/L		117	55 - 171
Chlorobenzene	10.0	10.9		ug/L		109	80 - 120
1,1,2,2-Tetrachloroethane	10.0	8.76		ug/L		88	58 - 122
Chloroethane	10.0	6.14		ug/L		61	10 - 149
Chloroform	10.0	10.8		ug/L		108	80 - 120
Chloromethane	10.0	7.65		ug/L		76	59 - 124
cis-1,3-Dichloropropene	10.0	8.58		ug/L		86	75 - 120
1,1,1-Trichloroethane	10.0	11.1		ug/L		111	64 - 147
Dichlorobromomethane	10.0	9.84		ug/L		98	79 - 125
1,1,2-Trichloroethane	10.0	10.2		ug/L		102	76 - 121
Cyclohexane	10.0	8.64		ug/L		86	66 - 135
Ethylbenzene	10.0	10.4		ug/L		104	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	8.04		ug/L		80	50 - 130
Ethylene Dibromide	10.0	9.58		ug/L		96	80 - 120
Dichlorodifluoromethane	10.0	8.16		ug/L		82	42 - 141
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	77 - 120
2-Butanone (MEK)	20.0	17.5		ug/L		88	43 - 149
4-Methyl-2-pentanone (MIBK)	20.0	14.5		ug/L		73	53 - 144
Isopropylbenzene	10.0	10.6		ug/L		106	80 - 128
Methyl acetate	20.0	13.6		ug/L		68	63 - 137
Methyl tert-butyl ether	10.0	9.28		ug/L		93	73 - 120
Methylene Chloride	10.0	10.9		ug/L		109	64 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	13.2		ug/L		132	65 - 144
1,2,4-Trichlorobenzene	10.0	9.79		ug/L		98	34 - 141
Styrene	10.0	10.3		ug/L		103	80 - 121
1,2-Dichlorobenzene	10.0	10.4		ug/L		104	80 - 120
Tetrachloroethene	10.0	11.6		ug/L		116	80 - 122
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120
Toluene	10.0	10.2		ug/L		102	78 - 120
1,4-Dichlorobenzene	10.0	10.4		ug/L		104	80 - 120
trans-1,2-Dichloroethene	10.0	11.3		ug/L		113	74 - 124
trans-1,3-Dichloropropene	10.0	8.30		ug/L		83	67 - 120
Trichloroethene	10.0	10.4		ug/L		104	76 - 124

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-321360/4
Matrix: Water
Analysis Batch: 321360

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	10.0	13.4		ug/L		134	27 - 176
Vinyl chloride	10.0	8.56		ug/L		86	65 - 124
Xylenes, Total	20.0	21.5		ug/L		108	80 - 120
Methylcyclohexane	10.0	8.69		ug/L		87	63 - 141
m-Xylene & p-Xylene	10.0	10.6		ug/L		106	80 - 120
Chlorodibromomethane	10.0	10.5		ug/L		105	64 - 129
o-Xylene	10.0	10.9		ug/L		109	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*85*		*61 - 138*
4-Bromofluorobenzene (Surr)	*90*		*69 - 120*
Toluene-d8 (Surr)	*102*		*73 - 120*
Dibromofluoromethane (Surr)	*101*		*69 - 124*

Lab Sample ID: 240-93471-11 MS
Matrix: Water
Analysis Batch: 321360

Client Sample ID: SW-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		20.0	15.5		ug/L		78	19 - 133
Benzene	ND		10.0	9.28		ug/L		93	69 - 127
Dichlorobromomethane	ND		10.0	9.23		ug/L		92	75 - 128
Bromoform	ND		10.0	9.29		ug/L		93	61 - 135
Bromomethane	ND	F2	10.0	6.39		ug/L		64	10 - 148
2-Butanone (MEK)	ND	F2	20.0	19.3		ug/L		97	34 - 153
Carbon disulfide	ND		10.0	9.97		ug/L		100	46 - 143
Carbon tetrachloride	ND		10.0	10.7		ug/L		107	53 - 175
Chlorobenzene	ND		10.0	9.96		ug/L		100	76 - 120
Chloroethane	ND	F2	10.0	3.14		ug/L		31	10 - 141
Chloroform	ND		10.0	9.75		ug/L		97	74 - 125
Chloromethane	ND		10.0	6.44		ug/L		64	34 - 127
1,1-Dichloroethane	ND	F2	10.0	9.26		ug/L		93	69 - 122
1,2-Dichloroethane	ND		10.0	9.75		ug/L		98	64 - 138
1,1-Dichloroethene	ND		10.0	11.1		ug/L		111	62 - 127
1,2-Dichloropropane	ND		10.0	9.21		ug/L		92	72 - 131
cis-1,3-Dichloropropene	ND		10.0	8.48		ug/L		85	68 - 120
trans-1,3-Dichloropropene	ND		10.0	7.92		ug/L		79	59 - 120
Ethylbenzene	ND		10.0	9.46		ug/L		95	72 - 121
2-Hexanone	ND		20.0	18.5		ug/L		93	21 - 184
Methylene Chloride	ND	F2	10.0	8.92		ug/L		89	52 - 137
4-Methyl-2-pentanone (MIBK)	ND		20.0	16.8		ug/L		84	53 - 147
Styrene	ND		10.0	8.41		ug/L		84	74 - 125
1,1,2,2-Tetrachloroethane	ND		10.0	9.73		ug/L		97	51 - 123
Tetrachloroethene	ND		10.0	10.7		ug/L		107	69 - 126
Toluene	ND		10.0	9.70		ug/L		97	69 - 125
Trichloroethene	ND		10.0	10.1		ug/L		101	68 - 129
Vinyl chloride	ND		10.0	8.01		ug/L		80	55 - 123
Xylenes, Total	ND		20.0	18.8		ug/L		94	71 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-93471-11 MS
Matrix: Water
Analysis Batch: 321360

Client Sample ID: SW-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		10.0	10.1		ug/L		101	57 - 156
1,1,2-Trichloroethane	ND		10.0	9.87		ug/L		99	68 - 127
Cyclohexane	ND		10.0	8.68		ug/L		87	56 - 135
1,2-Dibromo-3-Chloropropane	ND		10.0	8.28		ug/L		83	48 - 130
Ethylene Dibromide	ND		10.0	9.94		ug/L		99	73 - 121
Dichlorodifluoromethane	ND		10.0	8.42		ug/L		84	45 - 130
cis-1,2-Dichloroethene	ND		10.0	9.44		ug/L		94	69 - 127
trans-1,2-Dichloroethene	ND		10.0	10.3		ug/L		103	66 - 131
Isopropylbenzene	ND		10.0	9.01		ug/L		90	70 - 132
Methyl acetate	ND		20.0	14.3		ug/L		72	52 - 139
Methyl tert-butyl ether	ND		10.0	8.85		ug/L		89	67 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	13.5		ug/L		135	58 - 137
1,2,4-Trichlorobenzene	ND		10.0	7.27		ug/L		73	26 - 138
1,2-Dichlorobenzene	ND		10.0	9.06		ug/L		91	70 - 120
1,3-Dichlorobenzene	ND		10.0	8.83		ug/L		88	71 - 120
1,4-Dichlorobenzene	ND		10.0	9.07		ug/L		91	72 - 120
Trichlorofluoromethane	ND	F2	10.0	8.79		ug/L		88	28 - 172
Chlorodibromomethane	ND		10.0	10.0		ug/L		100	62 - 131
Methylcyclohexane	ND		10.0	8.57		ug/L		86	46 - 139
m-Xylene & p-Xylene	ND		10.0	9.39		ug/L		94	70 - 121
o-Xylene	ND		10.0	9.38		ug/L		94	71 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*61 - 138*
4-Bromofluorobenzene (Surr)	*89*		*69 - 120*
Toluene-d8 (Surr)	*97*		*73 - 120*
Dibromofluoromethane (Surr)	*95*		*69 - 124*

Lab Sample ID: 240-93471-11 MSD
Matrix: Water
Analysis Batch: 321360

Client Sample ID: SW-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		20.0	11.8		ug/L		59	19 - 133	28	35
Benzene	ND		10.0	9.67		ug/L		97	69 - 127	4	10
Dichlorobromomethane	ND		10.0	9.60		ug/L		96	75 - 128	4	13
Bromoform	ND		10.0	9.59		ug/L		96	61 - 135	3	13
Bromomethane	ND	F2	10.0	10.5	F2	ug/L		105	10 - 148	48	35
2-Butanone (MEK)	ND	F2	20.0	12.9	F2	ug/L		64	34 - 153	40	23
Carbon disulfide	ND		10.0	11.2		ug/L		112	46 - 143	12	18
Carbon tetrachloride	ND		10.0	11.2		ug/L		112	53 - 175	4	17
Chlorobenzene	ND		10.0	10.1		ug/L		101	76 - 120	2	12
Chloroethane	ND	F2	10.0	5.67	F2	ug/L		57	10 - 141	57	35
Chloroform	ND		10.0	10.8		ug/L		108	74 - 125	10	11
Chloromethane	ND		10.0	7.90		ug/L		79	34 - 127	20	25
1,1-Dichloroethane	ND	F2	10.0	10.5	F2	ug/L		105	69 - 122	12	11
1,2-Dichloroethane	ND		10.0	10.4		ug/L		104	64 - 138	6	11

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-93471-11 MSD
Matrix: Water
Analysis Batch: 321360

Client Sample ID: SW-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	ND		10.0	11.4		ug/L		114	62 - 127	3	14
1,2-Dichloropropane	ND		10.0	9.24		ug/L		92	72 - 131	0	12
cis-1,3-Dichloropropene	ND		10.0	8.42		ug/L		84	68 - 120	1	13
trans-1,3-Dichloropropene	ND		10.0	7.89		ug/L		79	59 - 120	0	14
Ethylbenzene	ND		10.0	9.51		ug/L		95	72 - 121	1	15
2-Hexanone	ND		20.0	17.2		ug/L		86	21 - 184	8	12
Methylene Chloride	ND	F2	10.0	10.1	F2	ug/L		101	52 - 137	13	12
4-Methyl-2-pentanone (MIBK)	ND		20.0	15.7		ug/L		78	53 - 147	7	16
Styrene	ND		10.0	8.66		ug/L		87	74 - 125	3	14
1,1,2,2-Tetrachloroethane	ND		10.0	9.29		ug/L		93	51 - 123	5	17
Tetrachloroethene	ND		10.0	10.6		ug/L		106	69 - 126	0	18
Toluene	ND		10.0	9.96		ug/L		100	69 - 125	3	14
Trichloroethene	ND		10.0	10.5		ug/L		105	68 - 129	4	12
Vinyl chloride	ND		10.0	8.86		ug/L		89	55 - 123	10	12
Xylenes, Total	ND		20.0	19.1		ug/L		96	71 - 122	2	14
1,1,1-Trichloroethane	ND		10.0	11.0		ug/L		110	57 - 156	9	13
1,1,2-Trichloroethane	ND		10.0	10.1		ug/L		101	68 - 127	3	11
Cyclohexane	ND		10.0	7.87		ug/L		79	56 - 135	10	35
1,2-Dibromo-3-Chloropropane	ND		10.0	7.66		ug/L		77	48 - 130	8	31
Ethylene Dibromide	ND		10.0	9.98		ug/L		100	73 - 121	0	12
Dichlorodifluoromethane	ND		10.0	7.67		ug/L		77	45 - 130	9	34
cis-1,2-Dichloroethene	ND		10.0	10.5		ug/L		105	69 - 127	10	11
trans-1,2-Dichloroethene	ND		10.0	11.3		ug/L		113	66 - 131	9	11
Isopropylbenzene	ND		10.0	9.19		ug/L		92	70 - 132	2	16
Methyl acetate	ND		20.0	13.0		ug/L		65	52 - 139	9	14
Methyl tert-butyl ether	ND		10.0	9.34		ug/L		93	67 - 125	5	12
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	12.5		ug/L		125	58 - 137	8	35
1,2,4-Trichlorobenzene	ND		10.0	6.96		ug/L		70	26 - 138	4	35
1,2-Dichlorobenzene	ND		10.0	8.79		ug/L		88	70 - 120	3	19
1,3-Dichlorobenzene	ND		10.0	8.43		ug/L		84	71 - 120	5	18
1,4-Dichlorobenzene	ND		10.0	8.75		ug/L		87	72 - 120	4	17
Trichlorofluoromethane	ND	F2	10.0	12.9	F2	ug/L		129	28 - 172	38	26
Chlorodibromomethane	ND		10.0	9.95		ug/L		100	62 - 131	1	15
Methylcyclohexane	ND		10.0	7.02		ug/L		70	46 - 139	20	35
m-Xylene & p-Xylene	ND		10.0	9.50		ug/L		95	70 - 121	1	15
o-Xylene	ND		10.0	9.62		ug/L		96	71 - 125	3	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*61 - 138*
4-Bromofluorobenzene (Surr)	*93*		*69 - 120*
Toluene-d8 (Surr)	*103*		*73 - 120*
Dibromofluoromethane (Surr)	*104*		*69 - 124*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-321646/6
Matrix: Water
Analysis Batch: 321646

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		1.0		ug/L			04/08/18 13:47	1
1,2-Dichloroethane	ND		1.0		ug/L			04/08/18 13:47	1
1,1-Dichloroethene	ND		1.0		ug/L			04/08/18 13:47	1
1,2-Dichloropropane	ND		1.0		ug/L			04/08/18 13:47	1
Acetone	ND		10		ug/L			04/08/18 13:47	1
Benzene	ND		1.0		ug/L			04/08/18 13:47	1
Bromoform	ND		1.0		ug/L			04/08/18 13:47	1
2-Hexanone	ND		10		ug/L			04/08/18 13:47	1
Bromomethane	ND		1.0		ug/L			04/08/18 13:47	1
Carbon disulfide	ND		1.0		ug/L			04/08/18 13:47	1
Carbon tetrachloride	ND		1.0		ug/L			04/08/18 13:47	1
Chlorobenzene	ND		1.0		ug/L			04/08/18 13:47	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/08/18 13:47	1
Chloroethane	ND		1.0		ug/L			04/08/18 13:47	1
Chloroform	ND		1.0		ug/L			04/08/18 13:47	1
Chloromethane	ND		1.0		ug/L			04/08/18 13:47	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/08/18 13:47	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/08/18 13:47	1
Dichlorobromomethane	ND		1.0		ug/L			04/08/18 13:47	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/08/18 13:47	1
Cyclohexane	ND		1.0		ug/L			04/08/18 13:47	1
Ethylbenzene	ND		1.0		ug/L			04/08/18 13:47	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/08/18 13:47	1
Ethylene Dibromide	ND		1.0		ug/L			04/08/18 13:47	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/08/18 13:47	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/08/18 13:47	1
2-Butanone (MEK)	ND		10		ug/L			04/08/18 13:47	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/08/18 13:47	1
Isopropylbenzene	ND		1.0		ug/L			04/08/18 13:47	1
Methyl acetate	ND		10		ug/L			04/08/18 13:47	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/08/18 13:47	1
Methylene Chloride	ND		1.0		ug/L			04/08/18 13:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			04/08/18 13:47	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/08/18 13:47	1
Styrene	ND		1.0		ug/L			04/08/18 13:47	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/08/18 13:47	1
Tetrachloroethene	ND		1.0		ug/L			04/08/18 13:47	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/08/18 13:47	1
Toluene	ND		1.0		ug/L			04/08/18 13:47	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/08/18 13:47	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/08/18 13:47	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/08/18 13:47	1
Trichloroethene	ND		1.0		ug/L			04/08/18 13:47	1
Trichlorofluoromethane	ND		1.0		ug/L			04/08/18 13:47	1
Vinyl chloride	ND		1.0		ug/L			04/08/18 13:47	1
Xylenes, Total	ND		2.0		ug/L			04/08/18 13:47	1
Methylcyclohexane	ND		1.0		ug/L			04/08/18 13:47	1
Chlorodibromomethane	ND		1.0		ug/L			04/08/18 13:47	1

QC Sample Results

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*91*		*61 - 138*		*04/08/18 13:47*	*1*
4-Bromofluorobenzene (Surr)	*77*		*69 - 120*		*04/08/18 13:47*	*1*
Toluene-d8 (Surr)	*100*		*73 - 120*		*04/08/18 13:47*	*1*
Dibromofluoromethane (Surr)	*97*		*69 - 124*		*04/08/18 13:47*	*1*

Lab Sample ID: LCS 240-321646/4
Matrix: Water
Analysis Batch: 321646

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	10.0	10.5		ug/L		105	74 - 120
1,2-Dichloroethane	10.0	10.2		ug/L		102	68 - 133
1,1-Dichloroethene	10.0	7.34		ug/L		73	65 - 127
1,2-Dichloropropane	10.0	10.4		ug/L		104	78 - 127
Acetone	20.0	10.7		ug/L		53	35 - 131
Benzene	10.0	10.1		ug/L		101	79 - 120
Bromoform	10.0	7.90		ug/L		79	55 - 145
2-Hexanone	20.0	12.2		ug/L		61	28 - 169
Bromomethane	10.0	12.3		ug/L		123	17 - 158
Carbon disulfide	10.0	7.96		ug/L		80	49 - 141
Carbon tetrachloride	10.0	9.24		ug/L		92	55 - 171
Chlorobenzene	10.0	10.0		ug/L		100	80 - 120
1,1,2,2-Tetrachloroethane	10.0	8.91		ug/L		89	58 - 122
Chloroethane	10.0	12.1		ug/L		121	10 - 149
Chloroform	10.0	10.3		ug/L		103	80 - 120
Chloromethane	10.0	9.62		ug/L		96	59 - 124
cis-1,3-Dichloropropene	10.0	9.99		ug/L		100	75 - 120
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	64 - 147
Dichlorobromomethane	10.0	10.1		ug/L		101	79 - 125
1,1,2-Trichloroethane	10.0	10.0		ug/L		100	76 - 121
Cyclohexane	10.0	5.89	*	ug/L		59	66 - 135
Ethylbenzene	10.0	9.53		ug/L		95	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	7.66		ug/L		77	50 - 130
Ethylene Dibromide	10.0	9.07		ug/L		91	80 - 120
Dichlorodifluoromethane	10.0	3.68	*	ug/L		37	42 - 141
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	77 - 120
2-Butanone (MEK)	20.0	13.4		ug/L		67	43 - 149
4-Methyl-2-pentanone (MIBK)	20.0	13.8		ug/L		69	53 - 144
Isopropylbenzene	10.0	8.38		ug/L		84	80 - 128
Methyl acetate	20.0	15.6		ug/L		78	63 - 137
Methyl tert-butyl ether	10.0	8.64		ug/L		86	73 - 120
Methylene Chloride	10.0	10.1		ug/L		101	64 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	5.01	*	ug/L		50	65 - 144
1,2,4-Trichlorobenzene	10.0	9.57		ug/L		96	34 - 141
Styrene	10.0	8.92		ug/L		89	80 - 121
1,2-Dichlorobenzene	10.0	9.18		ug/L		92	80 - 120
Tetrachloroethene	10.0	9.59		ug/L		96	80 - 122
1,3-Dichlorobenzene	10.0	9.46		ug/L		95	80 - 120
Toluene	10.0	10.4		ug/L		104	78 - 120
1,4-Dichlorobenzene	10.0	9.50		ug/L		95	80 - 120
trans-1,2-Dichloroethene	10.0	9.88		ug/L		99	74 - 124
trans-1,3-Dichloropropene	10.0	9.37		ug/L		94	67 - 120
Trichloroethene	10.0	10.4		ug/L		104	76 - 124

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-321646/4
Matrix: Water
Analysis Batch: 321646

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	10.0	5.61		ug/L		56	27 - 176
Vinyl chloride	10.0	7.61		ug/L		76	65 - 124
Xylenes, Total	20.0	18.4		ug/L		92	80 - 120
Methylcyclohexane	10.0	5.11	*	ug/L		51	63 - 141
m-Xylene & p-Xylene	10.0	9.28		ug/L		93	80 - 120
Chlorodibromomethane	10.0	9.41		ug/L		94	64 - 129
o-Xylene	10.0	9.12		ug/L		91	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*61 - 138*
4-Bromofluorobenzene (Surr)	*80*		*69 - 120*
Toluene-d8 (Surr)	*108*		*73 - 120*
Dibromofluoromethane (Surr)	*101*		*69 - 124*

Lab Sample ID: MB 240-321714/6
Matrix: Water
Analysis Batch: 321714

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		1.0	ug/L			04/09/18 11:44	1
1,2-Dichloroethane	ND		1.0	ug/L			04/09/18 11:44	1
1,1-Dichloroethene	ND		1.0	ug/L			04/09/18 11:44	1
1,2-Dichloropropane	ND		1.0	ug/L			04/09/18 11:44	1
Acetone	ND		10	ug/L			04/09/18 11:44	1
Benzene	ND		1.0	ug/L			04/09/18 11:44	1
Bromoform	ND		1.0	ug/L			04/09/18 11:44	1
2-Hexanone	ND		10	ug/L			04/09/18 11:44	1
Bromomethane	ND		1.0	ug/L			04/09/18 11:44	1
Carbon disulfide	ND		1.0	ug/L			04/09/18 11:44	1
Carbon tetrachloride	ND		1.0	ug/L			04/09/18 11:44	1
Chlorobenzene	ND		1.0	ug/L			04/09/18 11:44	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			04/09/18 11:44	1
Chloroethane	ND		1.0	ug/L			04/09/18 11:44	1
Chloroform	ND		1.0	ug/L			04/09/18 11:44	1
Chloromethane	ND		1.0	ug/L			04/09/18 11:44	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			04/09/18 11:44	1
1,1,1-Trichloroethane	ND		1.0	ug/L			04/09/18 11:44	1
Dichlorobromomethane	ND		1.0	ug/L			04/09/18 11:44	1
1,1,2-Trichloroethane	ND		1.0	ug/L			04/09/18 11:44	1
Cyclohexane	ND		1.0	ug/L			04/09/18 11:44	1
Ethylbenzene	ND		1.0	ug/L			04/09/18 11:44	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			04/09/18 11:44	1
Ethylene Dibromide	ND		1.0	ug/L			04/09/18 11:44	1
Dichlorodifluoromethane	ND		1.0	ug/L			04/09/18 11:44	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			04/09/18 11:44	1
2-Butanone (MEK)	ND		10	ug/L			04/09/18 11:44	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			04/09/18 11:44	1
Isopropylbenzene	ND		1.0	ug/L			04/09/18 11:44	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-321714/6
Matrix: Water
Analysis Batch: 321714

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methyl acetate	ND		10		ug/L			04/09/18 11:44	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/09/18 11:44	1
Methylene Chloride	ND		1.0		ug/L			04/09/18 11:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			04/09/18 11:44	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/09/18 11:44	1
Styrene	ND		1.0		ug/L			04/09/18 11:44	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/09/18 11:44	1
Tetrachloroethene	ND		1.0		ug/L			04/09/18 11:44	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/09/18 11:44	1
Toluene	ND		1.0		ug/L			04/09/18 11:44	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/09/18 11:44	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/09/18 11:44	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/09/18 11:44	1
Trichloroethene	ND		1.0		ug/L			04/09/18 11:44	1
Trichlorofluoromethane	ND		1.0		ug/L			04/09/18 11:44	1
Vinyl chloride	ND		1.0		ug/L			04/09/18 11:44	1
Xylenes, Total	ND		2.0		ug/L			04/09/18 11:44	1
Methylcyclohexane	ND		1.0		ug/L			04/09/18 11:44	1
Chlorodibromomethane	ND		1.0		ug/L			04/09/18 11:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*61 - 138*		*04/09/18 11:44*	*1*
4-Bromofluorobenzene (Surr)	*81*		*69 - 120*		*04/09/18 11:44*	*1*
Toluene-d8 (Surr)	*94*		*73 - 120*		*04/09/18 11:44*	*1*
Dibromofluoromethane (Surr)	*93*		*69 - 124*		*04/09/18 11:44*	*1*

Lab Sample ID: LCS 240-321714/4
Matrix: Water
Analysis Batch: 321714

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1-Dichloroethane			10.0	9.68		ug/L		97	74 - 120		
1,2-Dichloroethane			10.0	9.96		ug/L		100	68 - 133		
1,1-Dichloroethene			10.0	9.89		ug/L		99	65 - 127		
1,2-Dichloropropane			10.0	9.76		ug/L		98	78 - 127		
Acetone			20.0	13.7		ug/L		69	35 - 131		
Benzene			10.0	9.70		ug/L		97	79 - 120		
Bromoform			10.0	8.39		ug/L		84	55 - 145		
2-Hexanone			20.0	16.1		ug/L		81	28 - 169		
Bromomethane			10.0	11.6		ug/L		116	17 - 158		
Carbon disulfide			10.0	9.34		ug/L		93	49 - 141		
Carbon tetrachloride			10.0	10.3		ug/L		103	55 - 171		
Chlorobenzene			10.0	9.64		ug/L		96	80 - 120		
1,1,2,2-Tetrachloroethane			10.0	9.11		ug/L		91	58 - 122		
Chloroethane			10.0	9.47		ug/L		95	10 - 149		
Chloroform			10.0	10.2		ug/L		102	80 - 120		
Chloromethane			10.0	9.15		ug/L		91	59 - 124		
cis-1,3-Dichloropropene			10.0	8.43		ug/L		84	75 - 120		

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-321714/4
Matrix: Water
Analysis Batch: 321714

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	10.1		ug/L		101	64 - 147
Dichlorobromomethane	10.0	9.94		ug/L		99	79 - 125
1,1,2-Trichloroethane	10.0	9.75		ug/L		97	76 - 121
Cyclohexane	10.0	9.62		ug/L		96	66 - 135
Ethylbenzene	10.0	9.72		ug/L		97	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	7.63		ug/L		76	50 - 130
Ethylene Dibromide	10.0	9.32		ug/L		93	80 - 120
Dichlorodifluoromethane	10.0	8.63		ug/L		86	42 - 141
cis-1,2-Dichloroethene	10.0	9.78		ug/L		98	77 - 120
2-Butanone (MEK)	20.0	16.6		ug/L		83	43 - 149
4-Methyl-2-pentanone (MIBK)	20.0	16.7		ug/L		84	53 - 144
Isopropylbenzene	10.0	9.30		ug/L		93	80 - 128
Methyl acetate	20.0	17.4		ug/L		87	63 - 137
Methyl tert-butyl ether	10.0	8.35		ug/L		83	73 - 120
Methylene Chloride	10.0	9.57		ug/L		96	64 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.3		ug/L		103	65 - 144
1,2,4-Trichlorobenzene	10.0	7.27		ug/L		73	34 - 141
Styrene	10.0	9.38		ug/L		94	80 - 121
1,2-Dichlorobenzene	10.0	9.05		ug/L		90	80 - 120
Tetrachloroethene	10.0	10.2		ug/L		102	80 - 122
1,3-Dichlorobenzene	10.0	9.30		ug/L		93	80 - 120
Toluene	10.0	9.80		ug/L		98	78 - 120
1,4-Dichlorobenzene	10.0	9.18		ug/L		92	80 - 120
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	74 - 124
trans-1,3-Dichloropropene	10.0	7.63		ug/L		76	67 - 120
Trichloroethene	10.0	9.90		ug/L		99	76 - 124
Trichlorofluoromethane	10.0	11.2		ug/L		112	27 - 176
Vinyl chloride	10.0	10.0		ug/L		100	65 - 124
Xylenes, Total	20.0	19.3		ug/L		97	80 - 120
Methylcyclohexane	10.0	9.21		ug/L		92	63 - 141
m-Xylene & p-Xylene	10.0	9.65		ug/L		97	80 - 120
Chlorodibromomethane	10.0	9.07		ug/L		91	64 - 129
o-Xylene	10.0	9.67		ug/L		97	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*61 - 138*
4-Bromofluorobenzene (Surr)	*91*		*69 - 120*
Toluene-d8 (Surr)	*99*		*73 - 120*
Dibromofluoromethane (Surr)	*99*		*69 - 124*

Lab Sample ID: MB 240-321895/6
Matrix: Water
Analysis Batch: 321895

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		1.0	ug/L			04/10/18 12:35	1
1,2-Dichloroethane	ND		1.0	ug/L			04/10/18 12:35	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-321895/6
Matrix: Water
Analysis Batch: 321895

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		1.0		ug/L			04/10/18 12:35	1
1,2-Dichloropropane	ND		1.0		ug/L			04/10/18 12:35	1
Acetone	ND		10		ug/L			04/10/18 12:35	1
Benzene	ND		1.0		ug/L			04/10/18 12:35	1
Bromoform	ND		1.0		ug/L			04/10/18 12:35	1
2-Hexanone	ND		10		ug/L			04/10/18 12:35	1
Bromomethane	ND		1.0		ug/L			04/10/18 12:35	1
Carbon disulfide	ND		1.0		ug/L			04/10/18 12:35	1
Carbon tetrachloride	ND		1.0		ug/L			04/10/18 12:35	1
Chlorobenzene	ND		1.0		ug/L			04/10/18 12:35	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/10/18 12:35	1
Chloroethane	ND		1.0		ug/L			04/10/18 12:35	1
Chloroform	ND		1.0		ug/L			04/10/18 12:35	1
Chloromethane	ND		1.0		ug/L			04/10/18 12:35	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/10/18 12:35	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/10/18 12:35	1
Dichlorobromomethane	ND		1.0		ug/L			04/10/18 12:35	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/10/18 12:35	1
Cyclohexane	ND		1.0		ug/L			04/10/18 12:35	1
Ethylbenzene	ND		1.0		ug/L			04/10/18 12:35	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			04/10/18 12:35	1
Ethylene Dibromide	ND		1.0		ug/L			04/10/18 12:35	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/10/18 12:35	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/10/18 12:35	1
2-Butanone (MEK)	ND		10		ug/L			04/10/18 12:35	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/10/18 12:35	1
Isopropylbenzene	ND		1.0		ug/L			04/10/18 12:35	1
Methyl acetate	ND		10		ug/L			04/10/18 12:35	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/10/18 12:35	1
Methylene Chloride	ND		1.0		ug/L			04/10/18 12:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			04/10/18 12:35	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/10/18 12:35	1
Styrene	ND		1.0		ug/L			04/10/18 12:35	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/10/18 12:35	1
Tetrachloroethene	ND		1.0		ug/L			04/10/18 12:35	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/10/18 12:35	1
Toluene	ND		1.0		ug/L			04/10/18 12:35	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/10/18 12:35	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/10/18 12:35	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/10/18 12:35	1
Trichloroethene	ND		1.0		ug/L			04/10/18 12:35	1
Trichlorofluoromethane	ND		1.0		ug/L			04/10/18 12:35	1
Vinyl chloride	ND		1.0		ug/L			04/10/18 12:35	1
Xylenes, Total	ND		2.0		ug/L			04/10/18 12:35	1
Methylcyclohexane	ND		1.0		ug/L			04/10/18 12:35	1
Chlorodibromomethane	ND		1.0		ug/L			04/10/18 12:35	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-321895/6
Matrix: Water
Analysis Batch: 321895

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		61 - 138		04/10/18 12:35	1
4-Bromofluorobenzene (Surr)	82		69 - 120		04/10/18 12:35	1
Toluene-d8 (Surr)	93		73 - 120		04/10/18 12:35	1
Dibromofluoromethane (Surr)	91		69 - 124		04/10/18 12:35	1

Lab Sample ID: LCS 240-321895/4
Matrix: Water
Analysis Batch: 321895

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	10.0	9.09		ug/L		91	74 - 120
1,2-Dichloroethane	10.0	9.79		ug/L		98	68 - 133
1,1-Dichloroethene	10.0	9.42		ug/L		94	65 - 127
1,2-Dichloropropane	10.0	9.53		ug/L		95	78 - 127
Acetone	20.0	9.55	J	ug/L		48	35 - 131
Benzene	10.0	9.36		ug/L		94	79 - 120
Bromoform	10.0	8.98		ug/L		90	55 - 145
2-Hexanone	20.0	18.1		ug/L		91	28 - 169
Bromomethane	10.0	8.14		ug/L		81	17 - 158
Carbon disulfide	10.0	8.24		ug/L		82	49 - 141
Carbon tetrachloride	10.0	9.51		ug/L		95	55 - 171
Chlorobenzene	10.0	9.49		ug/L		95	80 - 120
1,1,2,2-Tetrachloroethane	10.0	9.31		ug/L		93	58 - 122
Chloroethane	10.0	8.04		ug/L		80	10 - 149
Chloroform	10.0	9.66		ug/L		97	80 - 120
Chloromethane	10.0	8.14		ug/L		81	59 - 124
cis-1,3-Dichloropropene	10.0	8.45		ug/L		85	75 - 120
1,1,1-Trichloroethane	10.0	9.04		ug/L		90	64 - 147
Dichlorobromomethane	10.0	9.72		ug/L		97	79 - 125
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	76 - 121
Cyclohexane	10.0	8.88		ug/L		89	66 - 135
Ethylbenzene	10.0	9.55		ug/L		95	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	8.53		ug/L		85	50 - 130
Ethylene Dibromide	10.0	9.60		ug/L		96	80 - 120
Dichlorodifluoromethane	10.0	9.30		ug/L		93	42 - 141
cis-1,2-Dichloroethene	10.0	9.37		ug/L		94	77 - 120
2-Butanone (MEK)	20.0	16.0		ug/L		80	43 - 149
4-Methyl-2-pentanone (MIBK)	20.0	17.4		ug/L		87	53 - 144
Isopropylbenzene	10.0	9.09		ug/L		91	80 - 128
Methyl acetate	20.0	16.5		ug/L		82	63 - 137
Methyl tert-butyl ether	10.0	8.41		ug/L		84	73 - 120
Methylene Chloride	10.0	8.81		ug/L		88	64 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.33		ug/L		93	65 - 144
1,2,4-Trichlorobenzene	10.0	7.83		ug/L		78	34 - 141
Styrene	10.0	9.28		ug/L		93	80 - 121
1,2-Dichlorobenzene	10.0	8.86		ug/L		89	80 - 120
Tetrachloroethene	10.0	9.86		ug/L		99	80 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-321895/4
Matrix: Water
Analysis Batch: 321895

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	10.0	8.86		ug/L		89	80 - 120
Toluene	10.0	9.62		ug/L		96	78 - 120
1,4-Dichlorobenzene	10.0	8.87		ug/L		89	80 - 120
trans-1,2-Dichloroethene	10.0	9.59		ug/L		96	74 - 124
trans-1,3-Dichloropropene	10.0	7.99		ug/L		80	67 - 120
Trichloroethene	10.0	9.70		ug/L		97	76 - 124
Trichlorofluoromethane	10.0	10.7		ug/L		107	27 - 176
Vinyl chloride	10.0	8.36		ug/L		84	65 - 124
Xylenes, Total	20.0	18.7		ug/L		93	80 - 120
Methylcyclohexane	10.0	8.66		ug/L		87	63 - 141
m-Xylene & p-Xylene	10.0	9.35		ug/L		94	80 - 120
Chlorodibromomethane	10.0	9.30		ug/L		93	64 - 129
o-Xylene	10.0	9.33		ug/L		93	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*61 - 138*
4-Bromofluorobenzene (Surr)	*96*		*69 - 120*
Toluene-d8 (Surr)	*101*		*73 - 120*
Dibromofluoromethane (Surr)	*101*		*69 - 124*

Lab Sample ID: 240-93471-18 MS
Matrix: Water
Analysis Batch: 321895

Client Sample ID: OW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	62	F1	40.0	ND	F1	ug/L		-132	19 - 133
Benzene	ND		20.0	17.7		ug/L		89	69 - 127
Dichlorobromomethane	ND		20.0	18.3		ug/L		92	75 - 128
Bromoform	ND		20.0	14.8		ug/L		74	61 - 135
Bromomethane	ND		20.0	23.8		ug/L		119	10 - 148
2-Butanone (MEK)	ND	F1	40.0	24.5		ug/L		61	34 - 153
Carbon disulfide	ND		20.0	16.6		ug/L		83	46 - 143
Carbon tetrachloride	ND		20.0	16.7		ug/L		83	53 - 175
Chlorobenzene	ND		20.0	17.2		ug/L		86	76 - 120
Chloroethane	ND		20.0	19.0		ug/L		95	10 - 141
Chloroform	ND		20.0	18.5		ug/L		93	74 - 125
Chloromethane	ND		20.0	17.8		ug/L		89	34 - 127
1,1-Dichloroethane	ND		20.0	17.7		ug/L		88	69 - 122
1,2-Dichloroethane	ND		20.0	18.0		ug/L		90	64 - 138
1,1-Dichloroethene	ND		20.0	17.8		ug/L		89	62 - 127
1,2-Dichloropropane	ND		20.0	18.2		ug/L		91	72 - 131
cis-1,3-Dichloropropene	ND		20.0	16.3		ug/L		81	68 - 120
trans-1,3-Dichloropropene	ND		20.0	14.8		ug/L		74	59 - 120
Ethylbenzene	ND		20.0	16.6		ug/L		83	72 - 121
2-Hexanone	ND		40.0	26.9		ug/L		67	21 - 184
Methylene Chloride	ND		20.0	17.0		ug/L		85	52 - 137
4-Methyl-2-pentanone (MIBK)	ND		40.0	28.7		ug/L		72	53 - 147
Styrene	ND		20.0	16.4		ug/L		82	74 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-93471-18 MS
Matrix: Water
Analysis Batch: 321895

Client Sample ID: OW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	ND		20.0	15.4		ug/L		77	51 - 123
Tetrachloroethene	47		20.0	63.3		ug/L		80	69 - 126
Toluene	ND		20.0	17.8		ug/L		89	69 - 125
Trichloroethene	9.1		20.0	27.8		ug/L		93	68 - 129
Vinyl chloride	ND		20.0	20.0		ug/L		100	55 - 123
Xylenes, Total	ND		40.0	33.9		ug/L		85	71 - 122
1,1,1-Trichloroethane	ND		20.0	17.0		ug/L		85	57 - 156
1,1,2-Trichloroethane	ND		20.0	18.2		ug/L		91	68 - 127
Cyclohexane	ND		20.0	15.5		ug/L		78	56 - 135
1,2-Dibromo-3-Chloropropane	ND		20.0	12.5		ug/L		62	48 - 130
Ethylene Dibromide	ND		20.0	17.1		ug/L		85	73 - 121
Dichlorodifluoromethane	ND		20.0	17.7		ug/L		88	45 - 130
cis-1,2-Dichloroethene	17		20.0	35.4		ug/L		91	69 - 127
trans-1,2-Dichloroethene	ND		20.0	18.5		ug/L		92	66 - 131
Isopropylbenzene	ND		20.0	15.5		ug/L		78	70 - 132
Methyl acetate	ND		40.0	23.4		ug/L		59	52 - 139
Methyl tert-butyl ether	ND		20.0	13.6		ug/L		68	67 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20.0	16.6		ug/L		83	58 - 137
1,2,4-Trichlorobenzene	ND		20.0	14.0		ug/L		70	26 - 138
1,2-Dichlorobenzene	ND		20.0	15.2		ug/L		76	70 - 120
1,3-Dichlorobenzene	ND		20.0	15.7		ug/L		78	71 - 120
1,4-Dichlorobenzene	ND		20.0	15.7		ug/L		78	72 - 120
Trichlorofluoromethane	ND		20.0	20.4		ug/L		102	28 - 172
Chlorodibromomethane	ND		20.0	16.5		ug/L		82	62 - 131
Methylcyclohexane	ND		20.0	15.1		ug/L		76	46 - 139
m-Xylene & p-Xylene	ND		20.0	17.5		ug/L		88	70 - 121
o-Xylene	ND		20.0	16.4		ug/L		82	71 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*61 - 138*
4-Bromofluorobenzene (Surr)	*91*		*69 - 120*
Toluene-d8 (Surr)	*97*		*73 - 120*
Dibromofluoromethane (Surr)	*96*		*69 - 124*

Lab Sample ID: 240-93471-18 MSD
Matrix: Water
Analysis Batch: 321895

Client Sample ID: OW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	62	F1	40.0	ND	F1	ug/L		-135	19 - 133	18	35
Benzene	ND		20.0	18.7		ug/L		93	69 - 127	5	10
Dichlorobromomethane	ND		20.0	19.1		ug/L		95	75 - 128	4	13
Bromoform	ND		20.0	15.0		ug/L		75	61 - 135	1	13
Bromomethane	ND		20.0	20.5		ug/L		103	10 - 148	15	35
2-Butanone (MEK)	ND	F1	40.0	ND	F1	ug/L		0	34 - 153	NC	23
Carbon disulfide	ND		20.0	17.5		ug/L		87	46 - 143	5	18
Carbon tetrachloride	ND		20.0	18.4		ug/L		92	53 - 175	10	17

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-93471-18 MSD
Matrix: Water
Analysis Batch: 321895

Client Sample ID: OW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene	ND		20.0	18.4		ug/L		92	76 - 120	7	12
Chloroethane	ND		20.0	17.7		ug/L		88	10 - 141	7	35
Chloroform	ND		20.0	19.3		ug/L		97	74 - 125	4	11
Chloromethane	ND		20.0	17.1		ug/L		86	34 - 127	4	25
1,1-Dichloroethane	ND		20.0	18.2		ug/L		91	69 - 122	3	11
1,2-Dichloroethane	ND		20.0	18.5		ug/L		92	64 - 138	3	11
1,1-Dichloroethene	ND		20.0	18.0		ug/L		90	62 - 127	1	14
1,2-Dichloropropane	ND		20.0	18.7		ug/L		93	72 - 131	2	12
cis-1,3-Dichloropropene	ND		20.0	16.5		ug/L		82	68 - 120	1	13
trans-1,3-Dichloropropene	ND		20.0	15.1		ug/L		75	59 - 120	2	14
Ethylbenzene	ND		20.0	17.9		ug/L		90	72 - 121	7	15
2-Hexanone	ND		40.0	26.6		ug/L		66	21 - 184	1	12
Methylene Chloride	ND		20.0	17.3		ug/L		86	52 - 137	1	12
4-Methyl-2-pentanone (MIBK)	ND		40.0	27.6		ug/L		69	53 - 147	4	16
Styrene	ND		20.0	17.7		ug/L		89	74 - 125	7	14
1,1,2,2-Tetrachloroethane	ND		20.0	14.7		ug/L		74	51 - 123	4	17
Tetrachloroethene	47		20.0	65.8		ug/L		92	69 - 126	4	18
Toluene	ND		20.0	18.7		ug/L		94	69 - 125	5	14
Trichloroethene	9.1		20.0	29.1		ug/L		100	68 - 129	5	12
Vinyl chloride	ND		20.0	19.8		ug/L		99	55 - 123	1	12
Xylenes, Total	ND		40.0	36.2		ug/L		91	71 - 122	7	14
1,1,1-Trichloroethane	ND		20.0	18.5		ug/L		92	57 - 156	8	13
1,1,2-Trichloroethane	ND		20.0	18.1		ug/L		90	68 - 127	1	11
Cyclohexane	ND		20.0	16.9		ug/L		84	56 - 135	9	35
1,2-Dibromo-3-Chloropropane	ND		20.0	13.3		ug/L		66	48 - 130	6	31
Ethylene Dibromide	ND		20.0	17.3		ug/L		86	73 - 121	1	12
Dichlorodifluoromethane	ND		20.0	17.4		ug/L		87	45 - 130	1	34
cis-1,2-Dichloroethene	17		20.0	35.8		ug/L		92	69 - 127	1	11
trans-1,2-Dichloroethene	ND		20.0	19.2		ug/L		96	66 - 131	4	11
Isopropylbenzene	ND		20.0	17.1		ug/L		86	70 - 132	10	16
Methyl acetate	ND		40.0	24.5		ug/L		61	52 - 139	4	14
Methyl tert-butyl ether	ND		20.0	14.3		ug/L		72	67 - 125	5	12
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20.0	17.9		ug/L		89	58 - 137	7	35
1,2,4-Trichlorobenzene	ND		20.0	16.4		ug/L		82	26 - 138	16	35
1,2-Dichlorobenzene	ND		20.0	16.6		ug/L		83	70 - 120	9	19
1,3-Dichlorobenzene	ND		20.0	16.9		ug/L		84	71 - 120	7	18
1,4-Dichlorobenzene	ND		20.0	16.7		ug/L		84	72 - 120	7	17
Trichlorofluoromethane	ND		20.0	19.2		ug/L		96	28 - 172	6	26
Chlorodibromomethane	ND		20.0	16.8		ug/L		84	62 - 131	2	15
Methylcyclohexane	ND		20.0	16.6		ug/L		83	46 - 139	9	35
m-Xylene & p-Xylene	ND		20.0	18.5		ug/L		93	70 - 121	6	15
o-Xylene	ND		20.0	17.7		ug/L		88	71 - 125	7	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*61 - 138*
4-Bromofluorobenzene (Surr)	*93*		*69 - 120*
Toluene-d8 (Surr)	*98*		*73 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-93471-18 MSD
Matrix: Water
Analysis Batch: 321895

Client Sample ID: OW-6
Prep Type: Total/NA

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*95*		*69 - 124*

Method: Moisture - Percent Moisture

Lab Sample ID: 240-93471-10 DU
Matrix: Solid
Analysis Batch: 320963

Client Sample ID: SED-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	10.0			8.6		%				15	20
Percent Moisture	90.0			91.4		%				2	20

GC/MS VOA

Analysis Batch: 320926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-93471-10	SED-1	Total/NA	Solid	8260B	320940
240-93471-12	SED-2	Total/NA	Solid	8260B	320940
240-93471-13	SED-2 DUP	Total/NA	Solid	8260B	320940
MB 240-320926/5	Method Blank	Total/NA	Solid	8260B	
LCS 240-320926/4	Lab Control Sample	Total/NA	Solid	8260B	
240-93471-10 MS	SED-1	Total/NA	Solid	8260B	320940
240-93471-10 MSD	SED-1	Total/NA	Solid	8260B	320940

Prep Batch: 320940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-93471-10	SED-1	Total/NA	Solid	5030A	
240-93471-12	SED-2	Total/NA	Solid	5030A	
240-93471-13	SED-2 DUP	Total/NA	Solid	5030A	
240-93471-10 MS	SED-1	Total/NA	Solid	5030A	
240-93471-10 MSD	SED-1	Total/NA	Solid	5030A	

Analysis Batch: 321360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-93471-8	SW-1	Total/NA	Water	8260B	
240-93471-9	SW-1 DUP	Total/NA	Water	8260B	
240-93471-11	SW-2	Total/NA	Water	8260B	
MB 240-321360/6	Method Blank	Total/NA	Water	8260B	
LCS 240-321360/4	Lab Control Sample	Total/NA	Water	8260B	
240-93471-11 MS	SW-2	Total/NA	Water	8260B	
240-93471-11 MSD	SW-2	Total/NA	Water	8260B	

Analysis Batch: 321646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-93471-1	OW-24	Total/NA	Water	8260B	
240-93471-2	OW-18	Total/NA	Water	8260B	
240-93471-3	OW-19	Total/NA	Water	8260B	
240-93471-4	RINSATE BLANK	Total/NA	Water	8260B	
240-93471-5	FIELD BLANK 1	Total/NA	Water	8260B	
240-93471-6	OW-10R	Total/NA	Water	8260B	
240-93471-7	OW-21	Total/NA	Water	8260B	
MB 240-321646/6	Method Blank	Total/NA	Water	8260B	
LCS 240-321646/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 321714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-93471-14	OW-22	Total/NA	Water	8260B	
MB 240-321714/6	Method Blank	Total/NA	Water	8260B	
LCS 240-321714/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 321895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-93471-15	OW-2	Total/NA	Water	8260B	
240-93471-16	FB-2	Total/NA	Water	8260B	
240-93471-17	TRIP BLANK	Total/NA	Water	8260B	
240-93471-18	OW-6	Total/NA	Water	8260B	
240-93471-19	OW-5	Total/NA	Water	8260B	

GC/MS VOA (Continued)

Analysis Batch: 321895 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-93471-20	OW-5 DUP	Total/NA	Water	8260B	
240-93471-21	OW-13R	Total/NA	Water	8260B	
MB 240-321895/6	Method Blank	Total/NA	Water	8260B	
LCS 240-321895/4	Lab Control Sample	Total/NA	Water	8260B	
240-93471-18 MS	OW-6	Total/NA	Water	8260B	
240-93471-18 MSD	OW-6	Total/NA	Water	8260B	

General Chemistry

Analysis Batch: 320963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-93471-10	SED-1	Total/NA	Solid	Moisture	
240-93471-12	SED-2	Total/NA	Solid	Moisture	
240-93471-13	SED-2 DUP	Total/NA	Solid	Moisture	
240-93471-10 DU	SED-1	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: OW-24
Date Collected: 03/27/18 12:05
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321646	04/08/18 15:41	LEE	TAL CAN

Client Sample ID: OW-18
Date Collected: 03/27/18 14:17
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321646	04/08/18 16:03	LEE	TAL CAN

Client Sample ID: OW-19
Date Collected: 03/27/18 15:20
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321646	04/08/18 16:26	LEE	TAL CAN

Client Sample ID: RINSATE BLANK
Date Collected: 03/27/18 15:25
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321646	04/08/18 16:48	LEE	TAL CAN

Client Sample ID: FIELD BLANK 1
Date Collected: 03/27/18 15:30
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321646	04/08/18 17:11	LEE	TAL CAN

Client Sample ID: OW-10R
Date Collected: 03/27/18 16:45
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321646	04/08/18 17:33	LEE	TAL CAN

Client Sample ID: OW-21
Lab Sample ID: 240-93471-7
Date Collected: 03/27/18 17:25
Matrix: Water
Date Received: 03/30/18 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321646	04/08/18 17:56	LEE	TAL CAN

Client Sample ID: SW-1
Lab Sample ID: 240-93471-8
Date Collected: 03/28/18 09:05
Matrix: Water
Date Received: 03/30/18 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321360	04/05/18 20:25	LRW	TAL CAN

Client Sample ID: SW-1 DUP
Lab Sample ID: 240-93471-9
Date Collected: 03/28/18 09:05
Matrix: Water
Date Received: 03/30/18 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321360	04/05/18 20:47	LRW	TAL CAN

Client Sample ID: SED-1
Lab Sample ID: 240-93471-10
Date Collected: 03/28/18 09:10
Matrix: Solid
Date Received: 03/30/18 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	320963	04/02/18 14:31	SEM	TAL CAN

Client Sample ID: SED-1
Lab Sample ID: 240-93471-10
Date Collected: 03/28/18 09:10
Matrix: Solid
Date Received: 03/30/18 09:20
Percent Solids: 10.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030A			320940	04/02/18 11:39	SAM	TAL CAN
Total/NA	Analysis	8260B		1	320926	04/02/18 14:40	SAM	TAL CAN

Client Sample ID: SW-2
Lab Sample ID: 240-93471-11
Date Collected: 03/28/18 09:45
Matrix: Water
Date Received: 03/30/18 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321360	04/05/18 21:09	LRW	TAL CAN

Client Sample ID: SED-2
Date Collected: 03/28/18 09:50
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	320963	04/02/18 14:31	SEM	TAL CAN

Client Sample ID: SED-2
Date Collected: 03/28/18 09:50
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-12
Matrix: Solid
Percent Solids: 14.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030A			320940	04/02/18 11:39	SAM	TAL CAN
Total/NA	Analysis	8260B		1	320926	04/02/18 15:05	SAM	TAL CAN

Client Sample ID: SED-2 DUP
Date Collected: 03/28/18 09:50
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	320963	04/02/18 14:31	SEM	TAL CAN

Client Sample ID: SED-2 DUP
Date Collected: 03/28/18 09:50
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-13
Matrix: Solid
Percent Solids: 12.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030A			320940	04/02/18 11:39	SAM	TAL CAN
Total/NA	Analysis	8260B		1	320926	04/02/18 15:30	SAM	TAL CAN

Client Sample ID: OW-22
Date Collected: 03/28/18 11:10
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321714	04/09/18 19:20	LEE	TAL CAN

Client Sample ID: OW-2
Date Collected: 03/28/18 12:10
Date Received: 03/30/18 09:20

Lab Sample ID: 240-93471-15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	321895	04/10/18 13:40	LEE	TAL CAN

Lab Chronicle

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Client Sample ID: FB-2
Lab Sample ID: 240-93471-16
Date Collected: 03/28/18 13:15
Matrix: Water
Date Received: 03/30/18 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321895	04/10/18 14:12	LEE	TAL CAN

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-93471-17
Date Collected: 03/28/18 00:00
Matrix: Water
Date Received: 03/30/18 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321895	04/10/18 14:34	LEE	TAL CAN

Client Sample ID: OW-6
Lab Sample ID: 240-93471-18
Date Collected: 03/28/18 14:00
Matrix: Water
Date Received: 03/30/18 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	321895	04/10/18 13:18	LEE	TAL CAN

Client Sample ID: OW-5
Lab Sample ID: 240-93471-19
Date Collected: 03/28/18 14:55
Matrix: Water
Date Received: 03/30/18 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321895	04/10/18 14:56	LEE	TAL CAN

Client Sample ID: OW-5 DUP
Lab Sample ID: 240-93471-20
Date Collected: 03/28/18 14:55
Matrix: Water
Date Received: 03/30/18 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321895	04/10/18 15:18	LEE	TAL CAN

Client Sample ID: OW-13R
Lab Sample ID: 240-93471-21
Date Collected: 03/28/18 16:00
Matrix: Water
Date Received: 03/30/18 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	321895	04/10/18 15:40	LEE	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: Cardinal Resources
Project/Site: C & D GW Sampling

TestAmerica Job ID: 240-93471-1

Laboratory: TestAmerica Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-18 *
Illinois	NELAP	5	200004	07-31-18
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18
Minnesota	NELAP	5	039-999-348	12-31-18
Minnesota (Petrofund)	State Program	1	3506	07-31-18
Nevada	State Program	9	OH-000482008A	07-31-18
New Jersey	NELAP	2	OH001	06-30-18 *
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-18
Texas	NELAP	6	T104704517-17-9	08-31-18
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-18
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18

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

TestAmerica Canton
4101 Shuffel Street, N. H.

North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

3.8/C3.9

Chain of Custody Record

1 of 2

155034

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: CERCLA

Client Contact	Project Manager: Barbara Jones	Site Contact:	Date: 3/27-3/28/18	COC No:
Company Name: Cardinal Resources	Tel/Fax: Cell 412-841-2363	Lab Contact: Kris Brooks	Carrier: FEDEX	1 of 2 COCs
Address: 4410 Broadway Blvd.	Analysis Turnaround Time			Sampler: B. Jones
City/State/Zip: Monroeville, PA 15146	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 412-374-0989	TAT if different from Below			Walk-in Client:
Fax:	☐ 2 weeks STANDARD TAT			Lab Sampling:
Project Name: Carroll & Dubies (C&D)	☐ 1 week			
Site: Port Jervis, NY	☐ 2 days			Job / SDG No.:
PO# 104-0012	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOCs	Sample Specific Notes:
OW-24	3-27	12:05	G	Water	3			✓	
OW-18	3-27	2:17	G	H_2O	3			✓	
OW-19	3-27	3:20	G	H_2O	3			✓	
Rinsate Blank	3-27	3:25	G	H_2O	3			✓	
Field Blank 1	3-27	3:30	G	H_2O	3			✓	
OW-10R	3-27	4:45	G	H_2O	3			✓	
OW-21	3-27	5:25	G	H_2O	3			✓	
SW-1 / SW-1 Dup	3-28	9:05	G	H_2O	6			✓	
SED-1 / SED-1 MS / SED-1 MSD	3-28	9:10	G	sed	3			✓	Okay to decant free water on SED-1 and SED-2 before sample prep.
SW-2 / SW-2 MS / SW-2 MSD	3-28	9:45	G	H_2O	9			✓	
SED-2 / SED-2 Dup	3-28	9:50	G	sed	2			✓	
OW-22	3-28	11:10	G	H_2O	3			✓	

240-93471 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:
Data report suitable for data validation project required, Do not report J values.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Barbara N. Jones	Cardinal Resources	3/29/18		TAC	3/30/18 920
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

4/12/2018

TestAmerica Canton
4101 Shuffel Street, N. H.

North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

2 of 2
155033

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: CERCLA

Client Contact	Project Manager: Barbara Jones	Site Contact:	Date: 3/27-3/28/18	COC No:
Company Name: Cardinal Resources	Tel/Fax: cell 412-841-2363	Lab Contact: Kris Brooks	Carrier: FEDEX	2 of 2 COCs
Address: 4410 Broadway Blvd,	Analysis Turnaround Time			Sampler: B. Jones
City/State/Zip: Monroeville PA 15146	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 412-374-0989	TAT if different from Below			Walk-in Client:
Fax:	☐ 2 weeks STANDARD TAT			Lab Sampling:
Project Name: Carroll & Dubies (C&D)	☐ 1 week			Job / SDG No.:
Site: Port Jervis, NY	☐ 2 days			
PO # 104-0012	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOCs	Sample Specific Notes:
OW-2	3-28-18	12:10	G	H_2O	3			✓	
FB-2	3-28-18	1:15	G	H_2O	3			✓	
Trip Blank	—	—	—	H_2O	1			✓	
OW-6, OW-6 MS/MSD	3-28-18	2:00	G	H_2O	9			✓	
OW-5, OW-5 DUP	3-28-18	2:55	G	H_2O	6			✓	
OW-13R	3-28-18	4:00	G	H_2O	3			✓	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:
Data report suitable for data validation required. Do not report J values.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Barbara N. Jones	Cardinal Resources	3/29/18		TAL	3/30/18 920
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

TestAmerica Canton Sample Receipt Form/Narrative **Login # : 173471**
Canton Facility

Client Cardinal Site Name _____ Cooler unpacked by: DSO

Cooler Received on 3/30/18 Opened on 3/30/18

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-8 (CF **+0.1** °C) Observed Cooler Temp. 3.8 °C Corrected Cooler Temp. 3.9 °C
   IR GUN #36 (CF **+0.3**°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
   ~~IR GUN # 627 (CF **-1.3**°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C~~

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels be reconciled with the COC?	Yes	No
9. Were correct bottle(s) used for the test(s) indicated?	Yes	No
10. Sufficient quantity received to perform indicated analyses?	Yes	No
11. Are these work share samples?	Yes	No
If yes, Questions 12-16 have been checked at the originating laboratory.		
12. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC732776
13. Were VOAs on the COC?	Yes	No
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B734501B	Yes	No
16. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: DSO

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

WI-NC-099

Appendix B
Historic Sampling Results

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroethane	Chloroform	Chloromethane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethylbenzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SGV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
MW-1	03/22/93	NR	0.9 J	NR	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.1 B	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
	09/26/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/20/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/18/99	<10	0.66 J	<1.0	<1.0	0.40 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	01/05/00	<10	0.65 J,B	<1.0	<1.0	0.37 J	<2.0	0.083 J	<2.0	<1.0	<1.0	0.22 J	<1.0	0.14 J	<10	0.35 J,B	<1.0	<1.0	-	0.097 J	<1.0	<2.0	<1.0
	06/06/00	<10	0.57 J	<1.0	<1.0	0.30 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	03/15/01	10 UJ	0.40 J	<1.0	<1.0	0.38 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	08/29/01	<10	<1.0	<1.0	<1.0	0.32 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/25/02	10 U	<1.0	<1.0	<1.0	0.17 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	1.0 U	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	09/18/02	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/09/03	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/25/04	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	0.24 J	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	1.0
	02/15/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	2.0 U	1.0 U
	08/30/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	06/13/07	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/24/08	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/14/09	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/21/10	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	10/13/11	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
MW-4	03/24/93	NR	18 J	NR	<0.5	0.4 J	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.3 J	<0.5	NR	<4.1 B,J	<0.5	<0.5	-	0.1 J	<0.5	<0.5	<0.5
	09/26/94	<10	11	<10	<1.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/24/95	<10	15	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/18/99	<10	5.7	<1.0	<1.0	0.20 J	<2.0	<1.0	<2.0	<1.0	<0.1	<1.0	9.8	<1.0	<10	<1.0	<1.0	0.16 J	-	0.16 J	0.20 J	<2.0	<1.0
	01/05/00	<10	6.9 B	<1.0	<1.0	0.26 J	<2.0	<1.0	<2.0	0.13 J	<1.0	0.45 J	3.3	<1.0	<10	0.11 J,B	<1.0	<1.0	-	0.090 J	0.15 J	0.30 J	<1.0
	06/06/00	<10	4.8	<1.0	<1.0	0.20 J	<2.0	<1.0	<2.0	0.11 J	<1.0	<1.0	3.8	<1.0	<10	<1.0	<1.0	0.30 J	-	<1.0	<1.0	0.18 J	<1.0
	03/14/01	<10	3.6	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.2	<1.0	<10	<1.0	<1.0	0.66 J	-	<1.0	0.42 J	<2.0	<1.0
	08/29/01	<10	12	<1.0	<1.0	0.21 J	<2.0	<1.0	0.26 J	<1.0	<1.0	<1.0	1.5	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/25/02	<10	10	<1.0	<1.0	0.21 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.2	<1.0	<10	1.0 U	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	09/18/02	<10	7.8	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/09/03	<10	2.2	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.84 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/26/04	10 U	2.5	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.50 J	<1.0	<10	<1.0	<1.0	0.72 J	-	<1.0	<1.0	<2.0	<1.0
	02/15/06	10 U	3.8	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.53 J	1.0 U	10 U	1.0 U	1.0 U	0.33 J	-	1.0 U	1.0 U	2.0 U	1.0 U
	08/29/06	10 U	9.1	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	06/13/07	10 U	7.1	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 UJ	1.0 U	0.26 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/24/08	10 U	4.4	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.48 J	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.28 J	2.0 U	1.0 U
	07/16/09	10 U	1.2	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	0.34 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/20/10	10 U	2.0	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	10/13/11	10 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/08/13	10 U	1.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	06/11/14	25 U	1.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroethane	Chloroform	Chloromethane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethylbenzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SGV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-2	03/23/93	NR	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	55	<0.5	NR	<1.3 B	<0.5	50	-	<0.5	22	<0.5	<0.5
	09/23/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	130	<10	NR	<10	<10	100	-	<10	24	<10	<10
	04/23/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	85	<10	<10	<10	<10	76	-	<10	22	<10	<10
	02/17/99	<50	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<5.0	130	<5.0	<50	3.6 J,B	<5.0	86	-	<5.0	22	<10	<5.0
	01/05/00	<10	0.46 J	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<5.0	150	<5.0	<50	<5.0	<5.0	80	-	<5.0	21	0.72 J	<5.0
	06/06/00	<33	<3.3	<3.3	<3.3	<3.3	<6.7	<3.3	<6.7	<3.3	<3.3	<3.3	99	<3.3	<33	<3.3	<3.3	80	-	<3.3	19	<6.7	<3.3
	03/15/01	<100	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	310	<10	<100	4.6 J	<10	160	-	<10	32	<20	<10
	08/29/01	<25	<2.5	<2.5	<2.5	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<2.5	69	<2.5	<25	<2.5	<2.5	61	-	<2.5	15	<5.0	<2.5
	04/25/02	<25	<2.5	<2.5	<2.5	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<2.5	81	<2.5	<25	1.2 U	<2.5	60	-	<2.5	18	0.95 J	<2.5
	09/18/02	<29	<2.9	<2.9	<2.9	<2.9	<5.7	<2.9	<5.7	<2.9	<2.9	<2.9	85	<2.9	<29	<2.9	<2.9	68	-	<2.9	18	<5.7	<2.9
	04/09/03	<120	<12	<12	<12	<12	<25	<12	<25	<12	<12	<12	290	<12	<120	<12	<12	160	-	<12	29	<25	<12
	04/26/04	10 U	1.5 J	<6.7	<6.7	<6.7	<13	<6.7	<13	<6.7	<6.7	<6.7	170	<6.7	<67	<6.7	<6.7	110	-	1.3 J	22	<13	<6.7
	02/15/06	40 U	4.0 U	4.0 U	4.0 U	4.0 U	8.0 U	4.0 U	8.0 U	4.0 U	4.0 U	4.0 U	150	4.0 U	40 U	4.0 U	4.0 U	120	-	4.0 U	20	8.0 U	4.0 U
	05/23/06	80 U	8.0 U	8.0 U	8.0 U	8.0 U	16 U	8.0 U	16 U	8.0 U	8.0 U	8.0 U	250	8.0 U	80 U	8.0 U	8.0 U	130	8.0 U	8.0 U	22	16 U	8.0 U
	08/30/06	25 U	2.5 U	2.5 U	2.5 U	2.5 U	5.0 U	2.5 U	5.0 U	2.5 U	2.5 U	2.5 U	74	2.5 U	25 U	2.5 U	2.5 U	90	2.5 U	2.5 U	16	5.0 U	2.5 U
	11/29/06	120 U	12 U	12 U	12 U	12 U	25 U	12 U	25 U	12 U	12 U	12 U	280	12 U	120 U	12 U	12 U	140	12 U	12 U	24	25 U	12 U
	06/13/07	20 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	4.0 U	2.0 U	2.0 U	2.0 U	36	2.0 U	20 U	2.0 UJ	2.0 U	52	2.0 U	2.0 U	12	4.0 U	2.0 U
	07/24/08	20 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	4.0 U	2.0 U	2.0 U	2.0 U	30	0.96 J	20 U	2.0 U	2.0 U	59	2.0 U	2.0 U	11	4.0 U	1.1 J
	07/16/09	25 U	2.5 U	2.5 U	2.5 U	2.5 U	5.0 U	2.5 U	5.0 U	2.5 U	2.5 U	2.5 U	53	2.5 U	25 U	2.5 U	2.5 U	62	2.5 U	2.5 U	9.7	5.0 U	2.5 U
	07/21/10	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	39	1.0 U	10 U	1.0 U	1.0 U	77	1.0 U	1.0 U	12	2.0 U	1.0 U
	10/13/11	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	98	2.5 U	2.5 U	2.5 U	2.5 U	110	2.5 U	2.5 U	15	2.5 U	5.0 U
	02/06/13	100 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	330	10 U	10 U	10 U	10 U	180	10 U	10 U	26	10 U	20 U
	06/11/14	25 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	54	1.0 U	10 U	5.0 U	1.0 U	94	1.0 U	1.0 U	11	1.0 U	2.0 U
	09/24/15	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	54	2.5 U	25 U	2.5 U	2.5 U	74	2.5 U	2.5 U	10	2.5 U	5.0 U
	11/01/16	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	63	2.5 U	25 U	2.5 U	2.5 U	68	2.5 U	2.5 U	9.9	2.5 U	5.0 U
	03/28/18	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	48	2.5 U	25 U	2.5 U	2.5 U	89	2.5 U	2.5 U	11	2.5 U	5.0 U
OW-5	03/23/93	NR	<3.0 J	NR	<0.5	0.1 J	<0.5	<0.5	<1.3	<0.5	<0.6	<0.5	8.0 R	<0.5	NR	<3.8	<0.6	1.0	-	<0.5	<1.3	1.8	<0.6
	09/29/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	19	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/25/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	7 J	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/18/99	<17	0.67 J	<1.7	<1.7	0.20 J	<3.3	<1.7	<3.3	<1.7	<1.0	<1.7	33	<1.7	<17	1.3 J,B	<1.0	7.8	-	<1.7	5.4	<3.3	<1.7
	01/06/00	1.3 J	0.66 J	<1.0	<1.0	0.29 J	<2.0	<1.0	<2.0	<1.0	<1.0	0.20 J	38	<1.0	<10	0.25 J,B	<1.0	18	-	0.041 J	9.0	0.26 J	<1.0
	06/07/00	<10	0.91 J	<1.0	<1.0	0.19 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.3	<1.0	<10	<1.0	<1.0	2.4	-	<1.0	1.7	<2.0	<1.0
	03/14/01	<10	0.46 J	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	14	<1.0	<10	<1.0	<1.0	6.2	-	<1.0	3.7	<2.0	<1.0
	08/29/01	<12	<1.2	<1.2	<1.2	0.21 J	<2.5	<1.2	<2.5	<1.2	<1.2	<1.2	29	<1.2	<12	<1.2	<1.2	7.0	-	<1.2	4.5	<2.5	<1.2
	04/24/02	14 U	0.35 J	<1.4	<1.4	0.20 J	<2.9	<1.4	<2.9	<1.4	<1.4	<1.4	37	<1.4	<14	1.4 U	<1.4	10	-	<1.4	5.3	<2.9	<1.4
	09/19/02	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	31	<1.0	<10	<1.0	<1.0	9.5	-	<1.0	5.3	<2.0	<1.0
	04/10/03	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.8	<1.0	<10	<1.0	<1.0	5.5	-	<1.0	3	<2.0	<1.0
	04/25/04	<10	0.38 J	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	8.6	<1.0	<10	<1.0	<1.0	5.2	-	<1.0	2.5	<2.0	<1.0
	02/16/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	6.2	1.0 U	10 U	1.0 U	1.0 U	4.3	-	1.0 U	2.0	2.0 U	1.0 U
	05/23/06	10 U	0.69 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	20	1.0 U	10 U	1.0 U	1.0 U	5.7	1.0 U	1.0 U	2.6	0.27 J	1.0 U
	08/29/06	14 U	1.4 U	1.4 U	1.4 U	1.4 U	2.9 U	1.4 U	2.9 U	1.4 U	1.4 U	1.4 U	34	1.4 U	14 U	1.4 U	1.4 U	6.1	1.4 U	1.4 U	2.8 J	0.82 J	1.4 U
	11/29/06	10 U	0.26 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	30	1.0 U	10 U	1.0 U	1.0 U	7.1	1.0 U	1.0 U	3.5	2.0 U	1.0 U
	06/12/07	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	8.7	1.0 U	10 U	1.0 UJ	1.0 U	4.0	1.0 U	1.0 U	1.9	2.0 U	1.0 U
	07/23/08	1.0 U	0.53 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	10	1.0 U	1.0 U	1.0 U	1.0 U	4.4	1.0 U	1.0 U	1.8	0.28 J	1.0 U
	07/14/09	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	3.7	1.0 U	1.0 U	1.5	2.0 U	1.0 U
	07/21/10	10 U	0.37 J	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	4.8	1.0 U	10 U	1.0 U	1.0 U	4.2	1.0 U	1.0 U	1.6	2.0 U	1.0 U

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroethane	Chloroform	Chloromethane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethylbenzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SGV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-5	10/13/11	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/06/13	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.3	1.0 U	1.0 U	1.0 U	1.0 U	1.5	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	06/11/14	25 U	0.32 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10	1.0 U	10 U	5.0 U	1.0 U	4.0	1.0 U	1.0 U	1.5	1.0 U	2.0 U
	09/24/15	13 U/17 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	31/33	1.3 U/1.7 U	13 U/17 U	1.3 U/1.7 U	1.3 U/1.7 U	14/16	1.3 U/1.7 U	1.3 U/1.7 U	4.2/4.5	1.3 U/1.7 U	2.7 U/3.3 U
	11/01/16	13 U/13 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	34/33	1.3 U/1.3 U	13 U/13 U	1.3 U/1.3 U	1.3 U/1.3 U	22/21	1.3 U/1.3 U	1.3 U/1.3 U	5.1/5.0	1.3 U/1.3 U	2.5 U/2.5 U
	03/28/18	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	14/14	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	18/18	1.0 U/1.0 U	1.3 U/1.3 U	4.2/4.3	1.0 U/1.0 U	2.0 U/2.0 U
OW-6	03/23/93	NR	<1.3 J	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.1 J	<1.3 J	<0.5	NR	<0.7 J,B	<0.5	13		<0.5	<2.9	1.1	<0.5
	09/27/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	4 J	<10	NR	<10	<10	17	-	<10	6.0 J	<10	<10
	04/23/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	19	-	<10	5.0 J	<10	<10
	02/18/99	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.8	<1.0	<10	3.7 B	<1.0	20	-	<1.0	4.6	<2.0	<1.0
	01/06/00	1.4 J	0.19 J,B	0.58 J	<1.0	<1.0	<2.0	<1.0	0.17 J	<1.0	<1.0	0.28 J	5.1	<1.0	<10	0.26 J,B	<1.0	21	-	<1.0	4.6	<2.0	<1.0
	06/07/00	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.2	<1.0	<10	<1.0	<1.0	14	-	<1.0	2.6	<2.0	<1.0
	03/15/01	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.9	<1.0	<10	<1.0	<1.0	19	-	<1.0	3.9	<2.0	<1.0
	08/29/01	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.7	<1.0	<10	<1.0	<1.0	12	-	<1.0	2.3	<2.0	<1.0
	04/24/02	10 U	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.7	<1.0	<10	1.1 U	<1.0	12	-	<1.0	2.9	<2.0	<1.0
	09/19/02	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.8	<1.0	<10	<1.0	<1.0	15	-	<1.0	3.9	<2.0	<1.0
	04/09/03	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	21	<1.0	<10	0.34 J	<1.0	28	-	<1.0	6.8	<2.0	<1.0
	04/25/04	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	21	<1.0	<10	<1.0	<1.0	32	-	<1.0	6.3	<2.0	<1.0
	02/16/06	17 U	1.7 U	1.7 U	1.7 U	1.7 U	3.3 U	1.7 U	3.3 U	1.7 U	1.7 U	1.7 U	19	1.7 U	17 U	1.7 U	1.7 U	39	-	1.7 U	7.9	3.3 U	1.7 U
	05/23/06	17 U	1.7 U	1.7 U	1.7 U	1.7 U	3.3 U	1.7 U	3.3 U	1.7 U	1.7 U	1.7 U	24	1.7 U	17 U	1.7 U	1.7 U	39	1.7 U	1.7 U	7.8	3.3 U	1.7 U
	08/31/06	14 U	1.4 U	1.4 U	1.4 U	1.4 U	2.9 U	1.4 U	2.9 U	1.4 U	1.4 U	1.4 U	20	1.4 U	14 U	1.4 U	1.4 U	40	1.4 U	1.4 U	7.7	2.9 U	1.4 U
	11/29/06	17 U	1.7 U	1.7 U	1.7 U	1.7 U	3.3 U	1.7 U	3.3 U	1.7 U	1.7 U	1.7 U	20	1.7 U	17 U	0.75 J	1.7 U	41	1.7 U	1.7 U	8.6	3.3 U	1.7 U
	06/12/07	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	19	1.0 U	10 U	1.0 UJ	1.0 U	36	1.0 U	1.0 U	9.0	2.0 U	1.0 U
	07/23/08	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	16	1.0 U	10 U	1.0 U	1.0 U	31	1.0 U	1.0 U	6.3	2.0 U	1.0 U
	07/14/09	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	16	1.0 U	10 U	1.0 U	1.0 U	30	1.0 U	1.0 U	5.5	2.0 U	1.0 U
	07/21/10	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	0.31 J	1.0 U	1.0 U	1.0 U	20	1.0 U	10 U	1.0 U	1.0 U	42	1.0 U	1.0 U	8.6	2.0 U	1.0 U
	10/13/11	17 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	40	1.7 U	1.7 U	1.7 U	1.7 U	52	1.7 U	1.7 U	11	1.7 U	3.3 U
	02/06/13	13 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	19	1.3 U	1.3 U	1.3 U	1.3 U	44	1.3 U	1.3 U	8.9	1.3 U	2.5 U
	06/11/14	25 U	1.0 U	2.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17	1.0 U	10 U	5.0 U	1.0 U	62	1.0 U	1.0 U	10	1.0 U	2.0 U
	09/24/15	13 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 UJ	1.3 U	1.3 U	1.3 U	15	1.3 U	13 U	1.3 U	1.3 U	38	1.3 U	1.3 U	7.7	1.3 U	2.5 U
	11/01/16	20 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	14	2.0 U	20 U	2.4	2.0 U	42	2.0 U	2.0 U	7.7	2.0 U	4.0 U
	03/28/18	62 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	17	2.0 U	20 U	2.0 U	2.0 U	47	2.0 U	2.0 U	9.1	2.0 U	4.0 U
OW-8	03/23/93	NR	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.8 B	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
	09/26/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/20/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/18/99	<10	0.32 J	0.17 J	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<10	0.32 J	<1.0	0.17 J	-	<1.0	<1.0	<2.0	<1.0
	01/06/00	<10	0.49 J	<1.0	<1.0	0.37 J	<2.0	0.083 J	<2.0	<1.0	<1.0	0.22 J	<1.0	0.14 J	<10	0.35 J,B	<1.0	<1.0	-	0.097 J	<1.0	<2.0	<1.0
	06/07/00	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	03/15/01	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	08/29/01	<10	0.20 J	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/24/02	10 U	0.20 J	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	1.0 U	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	09/19/02	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/09/03	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/25/04	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroethane	Chloroform	Chloromethane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethylbenzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SGV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-8	02/16/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	2.0 U	1.0 U
	08/31/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	06/12/07	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/23/08	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/14/09	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/20/10	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	10/13/11	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/06/13	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
OW-10	10/29/93	NR	37	NR	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NR	2.9 B	<1.0	<1.0	-	0.5 J	<1.0	<1.0	<1.0
	09/25/94	68	1,100	<10	<10	4 J	<10	<10	<10	<10	<10	<10	<10	9 J	NR	<10	<10	<10	-	8 J	<10	<10	53
	04/27/95	<50	2,600	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50	<50	30 J
	02/16/99	<2,000	1,900	<200	<200	23 J	<400	<200	<400	<200	<200	<200	<200	<200	<2,000	100 J,B	<200	<200	-	25 J	<200	<400	<200
OW-10R	01/07/00	610	400	<17	<17	3.6 J,B	<33	<17	<33	<17	<17	<17	<17	4.3 J	<170	<17	<17	<17	-	8.5 J	<17	10 J	6.2 J
	06/06/00	<50	130 J	<5.0	<5.0	3.0 J	<10	<5.0	<10	<5.0	<5.0	<5.0	<5.0	2.2 J	<50	<5.0	<5.0	<5.0	-	0.52 J	<5.0	2.2 J	<5.0
	03/14/01	<10	35	<1.0	<1.0	3.6	0.80 J	<1.0	<2.0	<1.0	<1.0	<1.0	1.0	0.89 J	<10	<1.0	<1.0	<1.0	-	0.44 J	<1.0	2.4	<1.0
	08/29/01	<20	55	<2.0	<2.0	1.4 J	1.1 J	<2.0	<4.0	<2.0	<2.0	<1.0	3.5	<1.0	<20	<1.0	<2.0	<2.0	-	<1.0	<2.0	9.5	<2.0
	04/25/02	<10	30	<1.0	<1.0	4.0	2.8	<1.0	<2.0	<1.0	<1.0	<1.0	2.7	2.0 U	<10	1.2 U	<1.0	<1.0	-	1.0 U	<1.0	4.5	1.0 U
	09/19/02	<10	17	<1.0	<1.0	2.9	1.3 J	<1.0	<2.0	<1.0	<1.0	<1.0	1.5	0.91 J	<10	<1.0	<1.0	<1.0	-	0.39 J	<1.0	6.3	<1.0
	04/09/03	<10	6.8	<1.0	<1.0	3.1	0.54 J	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	0.43 J	<1.0	<1.0	-	<1.0	<1.0	0.72 J	<1.0
	04/26/04	<10	8.1	<1.0	<1.0	2.2	0.80 J	<1.0	<2.0	<1.0	<1.0	<1.0	0.57 J	0.22 J	<10	1.0 U	<1.0	<1.0	-	0.27 J	<1.0	0.99 J	<1.0
	02/15/06	10 U	3.2	1.0 U	1.0 U	1.4	0.52 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	0.47 J	1.3 U
	08/29/06	10 U	9.9	1.0 U	1.0 U	1.4	0.92 J	1.0 U	0.20 J	1.0 U	1.0 U	1.0 U	0.59 J	0.25 J	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.7 J	1.0 U
	06/13/07	10 U	4.7	1.0 U	1.0 U	1.4	0.94 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.47 J	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.89 J	1.0 U
	07/22/08	10 U	5.7	1.0 U	1.0 U	0.71 J	0.48 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.46 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.80 J	1.0 U
	07/15/09	10 U	2.7	1.0 U	1.0 U	2.3	0.62 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.33 J	1.0 U
	07/20/10	10 U	4.6	1.0 U	1.0 U	0.88 J	0.87 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.39 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.66 J	1.0 U
	10/13/11	10 U	2.4	1.0 U	1.0 U	5.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/08/13	10 U	2.8	1.0 U	1.0 U	6.0	1.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	09/24/15	10 U	3.8	1.0 U	1.0 U	1.3	2.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	11/01/16	10 U	2.4	1.0 U	1.0 U	1.0 U	3.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	03/27/18	10 U	1.2	1.0 U	1.0 U	1.0 U	2.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
OW-13	10/28/93	NR	230	NR	<1.0	<1.0	<1.0	<1.0	<1.0	0.4 J	<1.0	<1.0	12	0.2 J	NR	1.2 J,B	<1.0	<1.0	-	4.8	0.9 J	<1.0	0.8 J
	09/29/94	<10	40	<10	<10	<10	<10	<10	<10	<10	<10	<10	6 J	<10	NR	<10	<10	<10	-	<10	<10	9 J	<10
	04/25/95	<10	350	<10	<10	<10	<10	<10	<10	<10	<10	<10	20	<10	<10	<10	<10	<10	-	<10	<10	34	<10
	02/16/99	<330	490	<33	<33	<33	<67	<33	<67	<33	<33	<33	52	<33	<330	18 J,B	<33	<33	-	7.6 J	<33	48 J	<33
	01/06/00	<200	620	<20	<20	<20	<40	3.5 J,B	<40	<20	<20	<20	56	2.3 J	<200	<20	<20	<20	-	2.7 J,B	1.3 J	58	<20
	06/07/00	<83	200	<8.3	<8.3	0.84 J	<17	<8.3	<17	<8.3	<8.3	<8.3	15	5.5 J	<83	<8.3	<8.3	<8.3	-	<8.3	<8.3	17	<8.3
	03/14/01	<50	130	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<5.0	15	4.0 J	<50	3.0 J	<5.0	<5.0	-	<5.0	<5.0	12	<5.0
	08/29/01	<62	120	<6.2	<6.2	<6.2	<12	<6.2	<12	<6.2	<6.2	<6.2	12	<6.2	<62	<6.2	<6.2	<6.2	-	<6.2	1.1 J	9.9 J	<6.2
	04/24/02	<56	160	<5.6	<5.6	<5.6	<11	<5.6	<11	<5.6	<5.6	<5.6	11	<5.6	<56	<5.6	<5.6	<5.6	-	5.6 U	1.2 J	9.9 J	<5.6
	09/19/02	<33	81	<3.3	<3.3	<3.3	<6.7	<3.3	<6.7	<3.3	<3.3	<3.3	8.5	1.8 J	24 J	<3.3	<3.3	<3.3	-	<3.3	<3.3	5.9 J	<3.3
	04/10/03	<25	53	<2.5	<2.5	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<2.5	5.9	1.6 J	<25	<2.5	<2.5	<2.5	-	<2.5	<2.5	4.9 J	<2.5
	04/25/04	<17	45	<1.7	<1.7	0.38 J	<3.3	<1.7	<3.3	<1.7	<1.7	<1.7	4.9	1.0 J	<17	<1.7	<1.7	<1.7	-	0.31 J	0.67 J	3.2 J	<1.7

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroethane	Chloroform	Chloromethane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethylbenzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SGV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-13R	02/20/06	10 U	15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.60 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	0.29 J	1.0 U	1.1 J	1.0 U
	08/29/06	10 U	15	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.40 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.3 J	1.0 U
	06/12/07	10 U	11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.42 J	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.86 J	1.0 U
	07/22/08	10 U/10 U	6.5 J/6.8 J	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	2.0 U/2.0 U	1.0 U/1.0 U	2.0 U/2.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	0.70 J/0.70 J	1.0 U/1.0 U
	07/14/09	10 U/10 U	13/12	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	2.0 U/2.0 U	1.0 U/1.0 U	2.0 U/2.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	2.4/2.3	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	0.64 J/0.63 J	1.6 J/1.6 J	1.0 U/1.0 U
	07/21/10	10 UJ/10 UJ	17/17	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	2.0 U/2.0 U	1.0 U/1.0 U	2.0 UJ/2.0 UJ	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	0.70J/0.78J	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	0.35 J/0.35 J	1.2 J/1.2 J	1.0 U/1.0 U
	10/13/11	10 U/10 U	1.0 U/1.3 J	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	2.0 U/2.0 U
	02/08/13	10 U/10 U	5.4/5.0	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.9/1.8	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	2.0 U/2.0 U
	06/11/14	25 U/25 U	9.8/10	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	0.47J/0.47J	1.0 U/1.0 U	10 U/10 U	5.0 U/5.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	0.22J/0.24J	0.80J/0.97J	2.0 U/2.0 U
	09/23/15	10 U	5.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U
	11/02/16	10 UJ	4.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	03/28/18	10 U	3.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
OW-15	09/24/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/26/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/16/99	<10	1.1	<1.0	<1.0	0.52 J	<2.0	<1.0	<2.0	0.25 J	<1.0	<1.0	0.38 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	1.5 J	<1.0
	01/07/00	1.3 J	1.0 B	0.92 J	<1.0	0.64 J	<2.0	<1.0	<2.0	0.31 J	<1.0	0.57 J	<1.0	<1.0	<10	0.35 J,B	0.15 J,B	<1.0	-	0.074 J	<1.0	1.4 J	<1.0
	06/06/00	<10	0.91 J	<1.0	<1.0	0.60 J	<2.0	<1.0	<2.0	0.28 J	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	1.0 J	<1.0
	03/14/01	<10	1.2	<1.0	<1.0	0.67 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.37 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	1.1 J	<1.0
	08/28/01	2.2 J,B	0.61 J	<1.0	<1.0	0.35 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.52 J	<1.0
	04/25/02	<10	0.99 J	<1.0	<1.0	0.47 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	1.0 U	<1.0	<1.0	-	<1.0	<1.0	0.91 J	<1.0
	09/18/02	<10	0.69 J	<1.0	<1.0	0.43 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/08/03	<10	1.2	<1.0	<1.0	0.67 J	<2.0	<1.0	<2.0	0.33 J	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0 J	<1.0
	04/23/04	<10	1.2	<1.0	<1.0	0.67 J	<2.0	<1.0	<2.0	0.29 J	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.90 J	<1.0
	02/15/06	10 U	0.88 J	1.0 U	1.0 U	0.53 J	2.0 U	1.0 U	2.0 U	0.24 J	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	0.73 J	1.3 U
	08/29/06	10 U	0.78 J	1.0 U	1.0 U	0.51 J	2.0 U	1.0 U	0.37 J	0.22 J	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.82 J	1.0 U
OW-16	09/24/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/26/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/17/99	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	01/06/00	1.4 J	0.082 J,B	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	0.61 J	<1.0	<1.0	<10	0.30 J,B	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	06/07/00	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	03/14/01	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	08/28/01	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	0.36 J	<1.0	<1.0	<10	0.80 J	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/24/02	10 U	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	1.9 U	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	09/19/02	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/10/03	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/25/04	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	02/17/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.37 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	2.0 U	1.0 U
	08/31/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.35 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
OW-17	02/20/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	2.0 U	1.0 U
	05/24/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	08/30/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	0.20 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	11/30/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroethane	Chloroform	Chloromethane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethylbenzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SGV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-18	09/23/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/29/95	<10	12	<10	<10	10 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	1 J	<10	<10	29
	02/17/99	<17	4.7	<1.7	<1.7	3.4	1.0 J	<1.7	<3.3	<1.7	<1.7	<1.7	0.54 J	<1.7	<17	1.0 J,B	<1.7	<1.7	-	<1.7	<1.7	<3.3	1.1 J
	01/07/00	2.7 J	5.6 B	1.0	<1.0	4.5	3.0	<1.0	<2.0	0.66 J	<1.0	0.29 J	<1.0	<1.0	<10	0.40 J,B	<1.0	<1.0	-	0.22 J	0.14 J	0.29 J	1.8
	06/08/00	<10	4.8	<1.0	<1.0	4.6	1.3 J	<1.0	<2.0	0.24 J	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	03/16/01	10 UJ	3.1	<1.0	<1.0	3.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.38 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	1.4
	08/28/01	2.3 J,B	2.4 J	<1.0	<1.0	3.6 J	<2.0	<1.0	<2.0	0.18 J	<1.0	<1.0	0.38 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	1.3 J
	04/24/02	10 U	1.5	<1.0	<1.0	4.3	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.28 J	<1.0	<10	1.6 U	<1.0	<1.0	-	1.0 U	<1.0	<2.0	1.7
	09/17/02	<10	2.9	<1.0	<1.0	5.5	1.3 J	<1.0	<2.0	0.36 J	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	2.0
	04/08/03	2.6 J	2.9	<1.0	<1.0	5.6	1.2 J	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	1.2
	04/23/04	10 U	3.3	<1.0	<1.0	7.3	0.74 J	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	1.2
	02/17/06	10 U	5.1	1.0 U	1.0 U	10	3.2	1.0 U	2.0 U	1.6	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	0.49 J	1.0 U	2.0 U	10
	08/30/06	10 U	3.7	1.0 U	1.0 U	7.8	0.91 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	06/14/07	10 U	1.2	1.0 U	1.0 U	6.5	0.46 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/22/08	10 U	1.5	1.0 U	1.0 U	6.9	0.40 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/16/09	10 U	2.3	1.0 U	1.0 U	9.6	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.34 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/22/10	1.6 J	2.8	1.0 U	1.0 U	11	0.41 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	0.63 J
	10/13/11	10 U	3.7	1.0 U	1.0 U	8.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.5	2.0 U
	02/07/13	10 U	5.1	1.0 U	1.0 U	11	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1	2.0 U
	06/11/14	25 U	3.2	1.0 U	1.0 U	16	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.32 J	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	0.29 J	1.0 U	1.0 U	2.0 U
	09/23/15	10 U	3.5	1.0 U	1.0 U	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	11/02/16	10 UJ	5.0	1.0 U	1.0 U	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	03/27/18	10 UJ	4.5	1.0 U	1.0 U	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
OW-19	09/27/94	<10	10 J	<10	<10	5 J	15	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/28/95	<10	8 J	<10	<10	6 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/17/99	<10	5.8	<1.0	<1.0	7.1	6.1	<1.0	<2.0	0.27 J	<1.0	<1.0	3.3	<1.0	<10	0.16 J,B	<1.0	<1.0	-	0.16 J	0.14 J	10	<1.0
	01/05/00	0.94 J	3.7 B	<1.0	<1.0	10	2.7	<1.0	<2.0	0.16 J	0.27 J	<1.0	1.5	<1.0	<10	0.25 J,B	<1.0	<1.0	-	0.15 J	0.15 J	2.1	<1.0
	06/08/00	<10	2.3	<1.0	<1.0	5.2	1.9 J	<1.0	<2.0	<1.0	<1.0	<1.0	1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	03/16/01	10 UJ	1.7	<1.0	<1.0	3.8	1.4 J	<1.0	<2.0	<1.0	<1.0	<1.0	0.96 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	1.3 J	<1.0
	08/28/01	2.7 J,B	1.9 J	<1.0	<1.0	7.2 J	0.92 J	<1.0	<2.0	<1.0	<1.0	0.35 J	0.46 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/23/02	10 U	1.3	<1.0	<1.0	6.5	0.71 J	<1.0	<2.0	<1.0	<1.0	<1.0	0.43 J	<1.0	<10	1.0 U	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	09/17/02	<10	0.64 J	<1.0	<1.0	4.9	0.73 J	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/08/03	2.5 J	3	<1.0	<1.0	4.9	1.7 J	<1.0	<2.0	<1.0	<1.0	<1.0	0.81 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.68 J	<1.0
	04/24/04	10 U	2.1	<1.0	<1.0	6	1.3 J	<1.0	<2.0	<1.0	<1.0	<1.0	0.58 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.56 J	<1.0
	02/17/06	10 U	3.4	1.0 U	1.0 U	5.6	1.9 J	1.0 U	<2.0	1.0 U	1.0 U	1.0 U	1.3	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	2.9	1.0 U
	08/31/06	3.1 J	3.3	1.0 U	1.0 U	13	1.8 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.85 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.1	1.0 U
	06/14/07	10 U	2.1	1.0 U	1.0 U	8.8 J	1.3 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.73 J	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.87 J	1.0 U
	07/22/08	10 U	1.4	1.0 U	1.0 U	11	0.91 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.49 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.62 J	1.0 U
	07/15/09	10 U	1.9	1.0 U	1.0 U	7.9	1.0 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.94 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1	1.0 U
	07/22/10	1.3 J	1.2	1.0 U	1.0 U	11	0.85 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.65 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.63 J	1.0 U
	10/13/11	10 U	3	1.0 U	1.0 U	8.4	1.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.3	2.0 U
	02/07/13	10 U	2.5	1.0 U	1.0 U	14	1.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.1	2.0 U
	06/11/14	25 U	1.4	1.0 U	1.0 U	12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.5	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.5	2.0 U
	09/23/15	10 U	1.0 U	1.0 U	1.0 U	6.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	11/02/16	10 UJ	1.0 U	1.0 U	1.0 U	5.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	03/27/18	10 U	1.6	1.0 U	1.0 U	9.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroethane	Chloroform	Chloromethane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethylbenzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SGV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-21	09/22/94	6 J	5 J	<10	<10	<10	<10	10 J	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/29/95	<10	8 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/16/99	<10	5.8	<1.0	<1.0	0.11 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.26 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.89 J	<1.0
	01/04/00	<10	3.8 B	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.11 J	<1.0	<1.0	<1.0	<1.0	<10	0.10 J,B	<1.0	<1.0	-	0.055 J	<1.0	0.46 J	<1.0
	06/07/00	<10	5.4	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.54 J	<1.0
	03/13/01	10 UJ	4.5	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.70 J	<1.0
	08/30/01	10 U	3.2	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	0.38 J	<1.0	<1.0	-	<1.0	<1.0	0.25 J	<1.0
	04/25/02	<10	2.4	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	1.0 U	<1.0	<1.0	-	<1.0	<1.0	0.33 J	<1.0
	09/18/02	<10	2.5	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.39 J	<1.0
	04/09/03	<10	3.7	<1.0	<1.0	<1.0	<2.0	<1.0	5.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10	0.51 J	<1.0	<1.0	-	<1.0	<1.0	0.88 J	<1.0
	04/24/04	<10	2.9	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.56 J	<1.0
	02/16/06	10 U	3.0	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	0.52 J	1.0 U
	08/29/06	10 U	2.4	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	0.27 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.83 J	1.0 U
	06/13/07	10 U	2.1	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.67 J	1.0 U
	07/23/08	10 U	5.6	1.0 U	1.0 U	1.0 U	<2.0	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.74 J	1.0 U
	07/15/09	10 U	2.1	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.80 J	1.0 U
	07/20/10	10 U	1.9	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.71 J	1.0 U
	10/13/11	10 U	2.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/08/13	10 U	2.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	06/10/14	25 U	1.8	0.98 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.27 J	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.78 J	2.0 U
	09/24/15	10 U	1.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	11/01/16	10 U	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	03/27/18	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
OW-22	09/24/94	<10	100	<10	<10	9 J	<10	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	5 J
	04/28/95	<10	48	<10	<10	10 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	1 J	<10	<10	<10
	02/17/99	<25	46	<2.5	<2.5	8.0	<5.0	<2.5	<5.0	<2.5	<2.5	<2.5	2.4 J	<2.5	<25	1.1 J,B	<2.5	<2.5	-	0.87 J	<2.5	4.2 J	3.5
	01/04/00	1.5 J	37 B	0.41 J	<1.2	5.8	<2.5	<1.2	<2.5	0.21 J	<1.2	<1.2	<1.2	0.098 J	<12	0.23 J,B	<1.2	<1.2	-	0.58 J	0.073 J	1.5 J	1.7
	06/07/00	<10	11	<1.0	<1.0	5.8	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	1.4
	03/13/01	10 UJ	12	<1.0	<1.0	8.2	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.70 J	<1.0	<10	<1.0	<1.0	<1.0	-	0.56 J	<1.0	0.76 J	1.9
	08/30/01	10 U	3.4	<1.0	<1.0	4.6	<2.0	0.34 J	<2.0	<1.0	<1.0	<1.0	0.36 J	<1.0	<10	0.36 J	<1.0	<1.0	-	0.45 J	<1.0	<2.0	1.7
	04/25/02	<10	4.2	<1.0	<1.0	3.7	<2.0	<1.0	<2.0	<1.0	0.29 J	<1.0	<1.0	<1.0	<10	1.2 U	<1.0	<1.0	-	1.0 U	<1.0	0.39 J	2.7 U
	09/18/02	<10	2.9	<1.0	<1.0	4.2	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	1.8
	04/09/03	<10	8.7	<1.0	<1.0	8.5	0.66 J	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	0.40 J,B	<1.0	<1.0	-	<1.0	<1.0	0.56 J	1.6
	04/24/04	10 U	4.2	<1.0	<1.0	5.9	0.24 J	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	0.23 J	<1.0	0.32 J	1.1
	02/16/06	10 U	7.5	1.0 U	1.0 U	11	0.31 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.59 J	1.0 U	<10	0.59 J	1.0 U	1.0 U	-	0.26 J	1.0 U	0.29 J	1.0
	08/31/06	10 U	2.8	1.0 U	1.0 U	5.3	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.37 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	0.24 J	1.0 U	0.41 J	1.1
	06/14/07	10 U	3.5	1.0 U	1.0 U	4.8	0.26 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.50 J	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	0.21 J	1.0 U	0.37 J	0.76 J
	07/23/08	10 U	1.9	1.0 U	1.0 U	4.6	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	0.17 J	1.0 U	0.32 J	0.66 J
	07/15/09	10 U	5.1	1.0 U	1.0 U	7.8	0.34 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.53 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	0.19 J	1.0 U	0.35 J	1.0 U
	07/20/10	10 U	2.5	1.0 U	1.0 U	4.5	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.38 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.26 J	0.64 J
	10/13/11	10 U	5.3	1.0 U	1.0 U	18	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/08/13	10 U	6.2	1.0 U	1.0 U	9.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	06/10/14	25 U	3.5	1.0 U	1.0 U	5.9	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.41 J	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.37 J	0.39 J
	09/24/15	10 U	2.0	1.0 U	1.0 U	4.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	11/01/16	10 U	1.8	1.0 U	1.0 U	2.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	03/28/18	10 U	5.6	1.0 U	1.0 U	7.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroethane	Chloroform	Chloromethane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethylbenzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SGV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-23	02/17/06	10 U	0.38 J	1.0 U	1.0 U	1.0 U	0.31 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	0.66 J	1.0 U
	05/23/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	0.31 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	0.44 J	1.0 U	1.0 U	0.39 J	1.0 U
	08/30/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.42 J	1.0 U
	11/30/06	10 U	0.23 J	1.0 U	1.0 U	1.0 U	0.27 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	0.22 J	1.0 U	0.51 J	1.0 U
OW-24	02/20/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	0.22 J	1.0 U	2.0 U	<1.0
	05/24/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	0.45 J	1.0 U	1.0 U	2.0 U	1.0 U
	08/30/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	11/29/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	3.6 U	1.0 U	1.0 U	1.0 U	0.18 J	1.0 U	2.0 U	1.0 U
	07/22/10	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	0.47 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	3.6 U	1.0 U	1.0 U	1.0 U	0.18 J	1.0 U	2.0 U	1.0 U
	10/13/11	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/07/13	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	09/23/15	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	11/02/16	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	03/27/18	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
OW-25	02/20/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	05/23/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2.0 U	1.0 U
	08/31/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	11/29/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	06/12/07	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/23/08	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/16/09	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/22/10	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	10/13/11	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/07/13	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U

Notes:
TCL = Target Compound List
NYSDEC SGV = New York State Department of Environmental Conservation Standards (S) and Guidance (G) Values for groundwater
U.S. EPA MCL= United States Environmental Protection Agency Maximum Contaminant Level for drinking/groundwater
* = The principal organic contaminant (POC) standard for groundwater of 5 ug/L applies to this substance.
U (DATA VALIDATION QUALIFIER) = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
< = Analyte not detected at reporting limit
B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
Red = Concentrations detected above regulatory limit
Blue = Analyte detected at or below the regulatory limit, or analyte detected but no regulatory criteria specified
UJ = (DATA VALIDATION QUALIFIER) = Analyte not detected above the reporting limit; however, the reporting 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.

Pre-1999 data from RETEC 1995
Pre-1999 analysis performed by Method 8240
1999 and later analyses performed by Method 8260B
NA = Not applicable; no criteria specified
NR = Analyte not reported
R = Data rejected during validation
J = Estimated result; result is less than reporting limit.

Table B-2
Historical Summary of Detected TCL Volatile and Semivolatile Organic Compounds in Surface Water (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	2-Butanone	Chloroethane	1,2-Dichloro-ethane	1,2-Dichloro-ethene (total)	Methylene Chloride	Toluene	Vinyl Chloride	Di-n-butyl phthalate
NYSDEC SGV		**50 (G)**	**1 (S)**	**NE**	**5 (S)***	**0.6 (S)**	**5 (S)***	**5 (S)***	**5 (S)***	**2 (S)**	**50 (S)**
U.S. EPA MCL		**NE**	**5**	**NE**	**NE**	**5**	**70**	**5**	**1,000**	**2**	**NE**
Sample ID	**Date**	***VOCs***									***SVOCs***
SW-1 / Duplicate (Down-stream)	02/18/99	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	10 U
	01/04/00	10 U	**0.19 J,B**	10 U	**0.85 J**	1.0 U	1.0 U	**0.15 J,B**	1.0 U	**0.99 J**	10 U
	06/08/00	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	10 U
	03/15/01	10 U	1.0 U	10 U	**0.97 J**	**0.61 J**	**0.39 J**	1.0 U	1.0 U	**0.52 J**	10 U
	08/28/01	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	10 U
	04/23/02	10 U	1.0 U	**0.60 J**	2.0 U	1.0 U	1.0 U	1.5 U	1.0 U	2.0 U	NA
	09/17/02	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	NA
	04/08/03	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	NA
	04/23/04	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	NA
	02/18/06	10 U / 21 U	1.0 U / 1.0 U	10 U / 10 U	**0.37 J** / 2.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	**0.34 J** / **0.29 J**	NA / NA
	06/14/07	10 U / 10 U	1.0 U / 1.0 U	10 U / 10 U	2.0 U / 2.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	2.0 U / 2.0 U	NA / NA
	07/24/08	10 U / 10 U	1.0 U / 1.0 U	10 U / 10 U	2.0 U / 2.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	2.0 U / 2.0 U	NA / NA
	07/15/09	10 U / 10 U	1.0 U / 1.0 U	10 U / 10 U	2.0 U / 2.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	2.0 U / 2.0 U	NA / NA
	07/22/10	10 U / 10 U	1.0 U / 1.0 U	10 U / 10 U	2.0 U / 2.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	2.0 U / 2.0 U	NA / NA
	10/13/11	10 U/10 U	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	NA / NA
	02/05/13	10 U/10 U	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	NA / NA
	09/23/15	10 U/10 U	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	NA / NA
	03/28/18	10 U/10 U	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	NA / NA

Notes:
TCL = Target Compound List
NE = Not established; no criteria specified.
NA = Not analyzed
NYSDEC SGV = New York State Department of Environmental Conservation Standards (S) and Guidance (G) values for groundwater.
* = The principal organic contaminant (POC) standard for groundwater of 5 ug/L applies to this substance.
U.S. EPA MCL = United States Environmental Protection Agency Maximum Contaminant Level for drinking/groundwater.
J = Estimated result; result is less than reporting limit.
B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U (DATA VALIDATION QUALIFIER) = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
Blue = **Analyte detected at less than regulatory limit, or analyte detected but no regulatory criteria specified.**
Red = **Analyte detected at or above SGV or MCL.**

Table B-2
Historical Summary of Detected TCL Volatile and Semivolatile Organic Compounds in Surface Water (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	2-Butanone	Chloroethane	1,2-Dichloro-ethane	1,2-Dichloro-ethene (total)	Methylene Chloride	Toluene	Vinyl Chloride	Di-n-butyl phthalate
NYSDEC SGV		**50 (G)**	**1 (S)**	**NE**	**5 (S)***	**0.6 (S)**	**5 (S)***	**5 (S)***	**5 (S)***	**2 (S)**	**50 (S)**
U.S. EPA MCL		**NE**	**5**	**NE**	**NE**	**5**	**70**	**5**	**1,000**	**2**	**NE**
Sample ID	**Date**	***VOCs***									***SVOCs***
SW-2 / Duplicate (Upstream)	02/18/99	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	10 U
	01/04/00	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	10 U
	06/08/00	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	10 U
	08/28/01	10 U / 10 U	1.0 U / 1.0 U	10 U / 10 U	2.0 U / 2.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	2.0 U / 2.0 U	10 U
	04/23/02	10 U / 10 U	1.0 U / 1.0 U	10 U / 10 U	2.0 U / 2.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.2 U / 1.0 U	1.0 U / 1.0 U	2.0 U / 2.0 U	**0.77 J** / 10 U
	04/23/03	10 U / 10 U	1.0 U / 1.0 U	10 U / 10 U	2.0 U / 2.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	2.0 U / 2.0 U	NA
	04/23/04	10 U / 10 U	1.0 U / 1.0 U	10 U / 10 U	2.0 U / 2.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	2.0 U / 2.0 U	NA
	04/23/05	10 U / 10 U	1.0 U / 1.0 U	10 U / 10 U	2.0 U / 2.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	1.0 U / 1.0 U	2.0 U / 2.0 U	NA
	03/15/01	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	10 U
	02/18/06	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.53 J**	NA
	06/14/07	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	**0.21 J**	1.0 U	2.0 U	NA
	07/24/08	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	NA
	07/15/09	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	NA
	07/22/10	10 U	1.0 U	10 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	NA
	10/13/11	10 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA
	02/05/13	10 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA
	09/23/15	10 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA
	03/28/18	10 U	1.0 U	10 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	NA

Notes:
TCL = Target Compound List
NE = Not established; no criteria specified.
NA = Not analyzed
NYSDEC SGV = New York State Department of Environmental Conservation Standards (S) and Guidance (G) values for groundwater.
* = The principal organic contaminant (POC) standard for groundwater of 5 ug/L applies to this substance.
U.S. EPA MCL = United States Environmental Protection Agency Maximum Contaminant Level for drinking/groundwater.
J = Estimated result; result is less than reporting limit.
B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U (DATA VALIDATION QUALIFIER) = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
Blue = **Analyte detected at less than regulatory limit, or analyte detected but no regulatory criteria specified.**
Red = **Analyte detected at or above SGV or MCL.**

Table B-3
Historical Summary of Detected TCL Volatile and Semivolatile Organic Compounds in Sediment (ug/kg)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	2-Butanone	Carbon Disulfide	Chlorobenzene	Chloroform	1,2-Dichloroethane	1,2-Dichloroethene (total)	Methylene Chloride	Toluene	Trichloroethene	Vinyl Chloride	bis(2-Ethylhexyl)phthalate	Di-n-butylphthalate	4-Methylphenol
Sample ID	**Date**	***VOCs***												***SVOCs***		
SED 1/Duplicate (Downstream)	09/27/94	58	ND	20 U	NA	ND	ND	ND	ND	ND	ND	ND	20 U	ND	190 J,B	ND
	02/18/99	28 U	6.9 U	28 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	14 U	450 U	77 J	450 U
	01/04/00	370	31 U	82 J	31 U	31 U	31 U	31 U	31 U	31 U	31 U	31 U	6.9 J	2,000 UJ / 1,400 UJ	2,000 UJ / 1,400 UJ	2,000 UJ / 1,400 UJ
	06/08/00	60 JB	13 U	17 J	13 U	13 U	13 U	13 U	13 U	13 U	13 U	13 U	27 U	590 J	880 U	880 U
	03/15/01	55 J	16 U	62 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	31 U	1,000 U	1,000 U	1,000 U
	08/28/01	27 J	2.1 J	9.4 J	12 U	12 U	12 U	12 U	4.6 J	12 U	1.3 J	12 U	24 U	790 U	790 U	790 U
	04/23/02	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
	09/17/02	180 BJ	2.7 J	58 J	3.5 J	17 U	17 U	17 U	2.1 J	17 U	54 J	17 U	34 UJ	NA	NA	NA
	04/08/03	110 J	3.4 J	34 J	21 UJ	21 U	21 U	21 U	5.7 J	21 U	21 U	21 U	3.0 J	NA	NA	NA
	04/23/04	28 J,FB,TB	10 U	7.2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U	NA	NA	NA
	02/18/06	460 U / 180 U	11 U / 9.1 U	130 U / 54 U	11 U / 9.1 U	11 U / 9.1 U	11 U / 9.1 U	11 U / 9.1 U	11 U / 9.1 U	11 U / 9.1 U	1.2 J / 0.95 J	1.9 J / 9.1 U	23 U / 18 U	NA	NA	NA
	06/14/07	60 J / 18 J	12 U / 12 U	18 J / 6.9 J	0.62 J / 0.76 J	12 U / 12 U	12 U / 12 U	12 U / 12 U	12 U / 12 U	12 U / 12 U	12 U / 12 U	12 U / 12 U	24 U / 24 U	NA / NA	NA / NA	NA / NA
	07/24/08	24 U / 26 U	6.1 U / 6.5 U	2.9 J / 5.9 J	6.1 U / 6.5 U	6.1 U / 6.5 U	6.1 U / 6.5 U	6.1 U / 6.5 U	6.1 U / 6.5 U	6.1 U / 6.5 U	6.1 U / 6.5 U	6.1 U / 6.5 U	12 U / 13 U	NA / NA	NA / NA	NA / NA
	07/15/09	940 J / 300 J	13 J / 5.6 J	230 J / 96 J	17 J / 8.2 J	5.9 J / 3.2 J	25 U / 21 U	1.7 J / 21 U	12 J / 5.9 J	9.7 J / 21 U	3.1 J1.3 J	25 U / 21 U	8.7 J / 4.5 J	NA / NA	NA / NA	NA / NA
	07/22/10	45 J / 85 J	7.3 U / 15 U	29 U / 62 U	7.3 U / 15 U	7.3 U / 15 U	7.3 U / 15 U	7.3 U / 15 U	7.3 U / 15 U	7.9 J / 7.3 U	7.3 U / 15 U	7.3 U / 15 U	7.3 U / 15 U	NA / NA	NA / NA	NA / NA
	10/13/11	34 U / 33 U	8.6 U / 8.1 U	34 U / 33 U	8.6 U / 8.1 U	8.6 U / 8.1 U	8.6 U / 8.1 U	8.6 U / 8.1 U	8.6 U / 8.1 U	8.6 U / 8.1 U	8.6 U / 8.1 U	8.6 U / 8.1 U	8.6 U / 8.1 U	NA / NA	NA / NA	NA / NA
	02/05/13	72 J / 56 J	11 UJ / 11 UJ	43 UJ / 43 UJ	11 UJ / 11 UJ	11 UJ / 11 UJ	11 UJ / 11 UJ	11 UJ / 11 UJ	11 UJ / 11 UJ	11 UJ / 11 UJ	11 UJ / 11 UJ	11 UJ / 11 UJ	11 UJ / 11 UJ	NA / NA	NA / NA	NA / NA
	09/23/15	160	37 U	150 U	37 U	37 U	37 U	37 U	37 U	37 U	37 U	37 U	37 U	NA	NA	NA
	03/28/18	280 J	45 U	180 U	45 U	45 U	45 U	45 U	45 U	160 J	45 U	45 U	45 U	NA	NA	NA

Table B-3
Historical Summary of Detected TCL Volatile and Semivolatile Organic Compounds in Sediment (ug/kg)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	2-Butanone	Carbon Disulfide	Chlorobenzene	Chloroform	1,2-Dichloroethane	1,2-Dichloroethene (total)	Methylene Chloride	Toluene	Trichloroethene	Vinyl Chloride	bis(2-Ethylhexyl)phthalate	Di-n-butylphthalate	4-Methylphenol
Sample ID	**Date**	***VOCs***												***SVOCs***		
SED-2/Duplicate (Upstream)	09/27/97	76	ND	23 U	NA	ND	ND	ND	ND	ND	ND	ND	23 U	ND	220 J,B	ND
	02/18/99	140 JB	44 U	50 J	44 U	44 U	44 U	44 U	44 U	44 U	44 U	44 U	88 U	2,900 U	370 J	2,900 U
	01/04/00	180 J / 190 U	55 U / 47 U	220 U / 190 U	55 U / 47 U	55 U / 47 U	55 U / 47 U	55 U / 47 U	55 U / 47 U	55 U / 47 U	55 U / 47 U	55 U / 47 U	110 U / 94 U	3,600 U / 3,100 U	3,600 U / 3,100 U	3,600 U / 3,100 U
	06/08/00	150 J / 160 U	46 U / 41 U	49 J / 160 U	46 U / 41 U	46 U / 41 U	46 U / 41 U	46 U / 41 U	46 U / 41 U	46 U / 41 U	13 J / 41 U	46 U / 41 U	91 U / 81 U	2,900 J / 1,500 J	3,000 U / 2,700 U	480 J,# / 2,700 U
	03/15/01	36 UJ / 69 UJ	17 UJ / 17 UJ	70 UJ / 69 UJ	17 U / 17 U	17 U / 17 U	17 U / 17 U	17 U / 17 U	17 UJ / 17 UJ	17 UJ / 17 UJ	17 UJ / 17 UJ	17 U / 17 U	35 UJ / 35 UJ	1,200 U / 1,100 U	1,200 U / 1,100 U	1,200 U / 1,100 U
	08/28/01	44 J / 22 J	16 U / 13 U	14 J / 7.6 J	16 U / 13 U	16 U / 13 U	16 U / 13 U	16 U / 13 U	16 U / 13 U	16 U / 13 U	16 U / 13 U	16 U / 13 U	32 U / 25 U	1,100 U / 830 U	1,100 U / 830 U	1,100 U / 830 U
	04/23/02	63 J / 85 UJ	30 UJ / 21 UJ	21 J / 85 UJ	30 UJ / 21 UJ	30 UJ / 21 UJ	30 UJ / 21 UJ	30 UJ / 21 UJ	30 UJ / 21 UJ	30 UJ / 21 UJ	30 UJ / 21 UJ	30 UJ / 21 UJ	59 UJ / 42 UJ	2,000 UJ / 1,400 UJ	2,000 UJ / 1,400 UJ	2,000 UJ / 1,400 UJ
	09/17/02	40 B / 29 JB	9.6 U / 9.3 U	17 J / 9.3 J	9.6 U / 9.3 U	9.6 U / 9.3 U	9.6 U / 9.3 U	9.6 U / 9.3 U	9.6 U / 9.3 U	9.6 U / 9.3 U	1.0 J / 0.91 J	9.6 U / 9.3 U	19 U / 19 U	NA	NA	NA
	04/08/03	79 J / 27 J	41 U / 44 U	21 J / 180 U	41 U / 44 U	41 U / 44 U	41 U / 44 U	41 U / 44 U	41 U / 44 U	41 U / 44 U	41 U / 44 U	41 U / 44 U	83 U / 88 U	NA	NA	NA
	04/23/04	38 J,FB / 53 U	14 U / 13 U	12 J / 53 U	14 U / 13 U	14 U / 13 U	14 U / 13 U	14 U / 13 U	14 U / 13 U	14 U / 13 U	14 U / 13 U	14 U / 13 U	28 U / 27 U	NA	NA	NA
	02/18/06	110 U	16 U	65 U	1.8 J	16 U	16 U	16 U	16 U	16 U	2.1 J	16 U	32 U	NA	NA	NA
	06/14/07	76 J	15 U	18 J	1.2 J	15 U	15 U	15 U	15 U	15 U	5.5 J	15 U	30 U	NA	NA	NA
	07/24/08	78 UJ	10 U	19 J	10 U	10 U	10 U	10 U	10 U	10 U	0.90 J	10 U	20 U	NA	NA	NA
	07/15/09	110 UJ	28 UJ	110 UJ	28 UJ	28 UJ	1.6 J	28 UJ	28 UJ	8.6 J	34 J	28 UJ	56 UJ	NA	NA	NA
	07/22/10	89 J	16 U	65 U	16 UJ	16 U	16 U	16 U	16 U	18 J	16 UJ	16 U	16 U	NA	NA	NA
	10/13/11	47 UJ	12 UJ	47 UJ	12 UJ	12 UJ	12 UJ	12 UJ	12 UJ	13 J	12 UJ	12 UJ	12 UJ	NA	NA	NA
	02/05/13	150 UJ	38 UJ	150 UJ	38 UJ	38 UJ	38 UJ	38 UJ	38 UJ	38 UJ	38 UJ	38 UJ	38 UJ	NA	NA	NA
	09/23/15	170 / 260 J	37 U / 35 UJ	150 U / 140 UJ	37 U / 35 UJ	37 U / 35 UJ	37 U / 35 UJ	37 U / 35 UJ	37 U / 35 UJ	37 U / 35 UJ	37 U / 35 UJ	37 U / 35 UJ	37 U / 35 UJ	NA /NA	NA /NA	NA /NA
	03/28/18	120 J /140 UJ	29 U / 36 U	120 U / 140 U	29 U / 36 U	29 U / 36 U	29 U / 36 U	29 U / 36 U	29 U / 36 U	51 J / 71 J	29 U / 36 U	29 U / 36 U	29 U / 36 U	NA /NA	NA /NA	NA /NA

Notes:
TCL = Target Compound List
ND = Not detected at reporting limit prior to 06/08/00.
< = Not detected at the method detection limit.
B = Method blank contamination. The associated method blank contains the analyte at a reportable level.
NA = Not analyzed
J = Estimated result; result is less than method reporting limit
TB = Detected in trip blank
FB = Detected in field blank
R (DATA VALIDATION QUALIFIER) = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be verified.
= This value represents a probable combination of 3-methylphenol (m-cresol) and 6-methylphenol (p-cresol).
UJ (DATA VALIDATION QUALIFIER) = Analyte not detected above the reporting limit; however, the reporting 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.
Methylene chloride (2.6 ug/kg J, FB, TB) was detected in SED-1 during 4/04 sampling round.

Appendix C
Data Quality Review Checklist

Tier II
VOA Organic Data Review Summary

SDG No./Matrix: 240-93471-1		**Completion Date**: 07/02/2018
Project No.: 104-0012		**Reviewer**: Barbara Jones
Laboratory: TestAmerica, North Canton, OH		
Review Criteria	**Data Qualified Yes / No**	**Samples Qualified**
1. Data completeness	No	Complete electronic package (959 pages) for data validation was provided.
2. Preservation/holding time	No	All holding times were met and proper preservation noted for the methods performed on these samples.
3. GC/MS tuning – **Form V**	No	Form Vs provided for two instruments and covered all field samples, QC samples, and standards. BFB mass spectrum met relative abundance criteria in all cases.
4. Calibration:		
4A – Initial – **Form VI**	No	Form VIs for three instruments provided (A3UX10, A3UX11, A3UX15), along with backup information; multiple calibration levels.
4B – Continuing – **Form VII**	No	The continuing calibration verification (CCV) associated with OW-24, OW-18, OW-19, OW-10R, and OW-21 recovered above the upper control limit for toluene. The samples associated with this CCV were non-detects for the affected analytes. Per Region 1 protocols, the RRF was > than 0,05 and the %D was less than 25%, therefore nondetects are accepted without qualification.
5. Blanks:		
5A - Laboratory blanks – **Form IV**	No	Water: There were three method blanks associated with water samples; all were no detectable, resulting in no data qualification. Sediments: Methylene chloride was detected in MB for sediment samples at 10.3 ug/kg; because the reported detects are greater than the detected concentration in the MB and greater than the 10X action level, they are reported without qualification due to blank results.
5B – Field blanks	No	Two field blanks (3/27 and 3/28) were collected by pouring laboratory-provided de-ionized water into sample containers at the site; the blanks were nondetectable for VOCs.
5C - Equipment rinsates	No	A rinsate blank was collected for the bladder pump used to collect groundwater samples; the blank was nondetectable for VOCs.
5D – Trip blanks	No	A trip blank (laboratory-pure water in a sample container shipped with empty containers to the site and back to the laboratory) was analyzed and was nondetectable for VOCs.
6. Surrogate recovery – **Form II**	Yes	Water: Recoveries for four surrogate compounds were all within QC limits, for all samples. Sediment: BFB and TOL-8 surrogate recoveries were slightly high for SED-1, SED-2, and SED-2 DUP. Based on Region 1 guidance, detected results are qualified as J for estimated.

7. Lab-control sample – **Form III**	Yes	Water: There were four water LCSs. Three of the four were all within QC limits. One LSC, 240-321646/4, was out of limits (low) for cyclohexane, dichlorodifluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane, and methylcyclohexane. These analytes have been identified as poor performing analytes when analyzed using this method; therefore, re-extraction/re-analysis was not performed. None of these compounds were detected in the associated samples (OW-10R, OW-18, OW-19, OW-21, OW-24). Using Region 1 protocols, the nondects for affected compounds are qualified as UJ in the associated samples. Sediment: One LCS for solids was within all QC limits.
8. Matrix spike/matrix spike duplicates – **Form III**	Yes	Water: Acetone failed the recovery criteria low for the MS of sample OW-6 MS; 2-butanone (MEK) and acetone failed the recovery criteria low for the MSD of sample OW-6 MSD. Acetone is qualified as J in OW-6 and nondetects as UJ. Several analytes exceeded the RPD limit for the MSD of sample SW-2 MSD, including for methylene chloride, which was nondetectable in the sample and is qualified as UJ. Sediment: MS/MSD recoveries and RPDs were within limits for the SED-1 sample; no qualifications.
9. Field duplicates	Yes	Water: Field duplicates were OW-5/OW-5 DUP and SW-1/SW-1 DUP. RPDs are within control limits for the water samples. Sediment: For SED-2/SED-2 DUP, RPD was in limits for methylene chloride. Acetone was detected in one sample and nondetect in the other sample, and results are qualified as J/UJ.
10. Internal standards performance - **Form VIII**	Yes	Internal standard response for SED-1, SED-2, and SED-2 DUP were outside of control limits (low but greater than 20%). The samples were re-extracted and/or re-analyzed with concurring results, and the original set of data has been reported. Detects are qualified as J, and nondetects are qualified as UJ.
11. Compound quantitation and reporting	No	Spot checked Form Is against quantitation sheets for OW-18 (no dilution), OW-6 (dil=2), and OW-2 (dil=2.5). Rounding and dilution corrections OK.
12. Tentatively identified compounds	Not applicable	TIC reporting not required for this project.