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Div. of Waste Management, Inactive Hazardous Sites Branch
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Subject:
Annual Report on Groundwater Remediation System O&M and Monitor Well Sampling – January through December 2015, Brenntag Southeast Facility, 2000 East Pettigrew Street, Durham, North Carolina

Date:
September 29, 2016

Contact:
Jim Shilliday

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NC000368.0025

Dear Mr. Qi:

Arcadis G&M of North Carolina, Inc. (Arcadis), on behalf of Brenntag Mid-South, Inc. (Brenntag) is pleased to submit the above-referenced report on CD-ROM. The report documents annual compliance groundwater monitoring, treatment system sampling, and treatment system operation and maintenance (O&M) activities conducted between January 2015 and December 2015 at the Brenntag facility in Durham, North Carolina.

If you have any questions or comments concerning this report, please contact me at your earliest convenience at (919) 854-1282.

Sincerely,

Arcadis G&M of North Carolina, Inc.

FOR

James E. Shilliday, III, L.G.
Principal Scientist/Project Manager

Copies:
Mr. Bruce Biehl – Brenntag Mid-South, Inc.

Annual Report on Groundwater Remediation System O&M and Monitor Well Sampling - January through December 2015

Brenntag Mid-South Facility
(Former Southchem Facility)

2000 East Pettigrew Street,
Durham, North Carolina

Incident #3527

May 2016

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Annual Report on Groundwater Remediation System O&M and Monitor Well Sampling—January through December 2015

Brenntag Mid-South Facility
(Former Southchem Facility)
2000 East Pettigrew Street
Durham, North Carolina
Incident #3527

Prepared for:
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Date:
May 2016

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1. Introduction

Arcadis G&M of North Carolina, Inc. (Arcadis) prepared this report on behalf of Brenntag Mid-South, Inc. (formerly Southchem, Inc.) to summarize the work performed at the Brenntag facility (the site) located at 2000 East Pettigrew Street, Durham, North Carolina. The location of the site is shown on **Figure 1-1**.

This report discusses the operation and maintenance (O&M) and monthly sampling of the site's groundwater remediation system for the period from January 2015 through December 2015. Additionally, this report presents the results of the annual groundwater monitoring event that was performed in December 2015. The selected remedial option for the site consists of groundwater extraction and soil vapor recovery utilizing vacuum-enhanced recovery (VER). The groundwater remediation system became fully operational in June 2001.

The annual groundwater monitoring procedures, analytical methods, and report contents presented herein were structured to follow the requirements set forth in the Special Order by Consent (SOC) dated October 16, 1997 (which expired in 2001), and a letter requesting modification of monitor well sampling frequency submitted to the North Carolina Department of Environmental Quality on July 20, 2004. The 2004 letter provided for modifications to the previously established sampling program that allow for collection of water level measurements from all monitor wells and recovery wells on a semi-annual basis (March and September), performance of a comprehensive monitor well and recovery well sampling event once per year (March), and performance of a limited monitor well sampling event once per year (September). Beginning in 2008, the water level measurement and groundwater sampling frequency was further reduced to one comprehensive monitor well and recovery well sampling event to occur annually.

The monthly groundwater remediation system effluent sampling activities were performed in accordance with the requirements of the National Pollutant Discharge Elimination System (NPDES) permit for the groundwater remediation system (NPDES Permit Number NC0086827).

2. Groundwater Remediation System

The groundwater remediation system was installed at the site in the spring of 2001, and the system became fully operational in June 2001. The groundwater remediation system consists of ten recovery wells, designated RW-1 through RW-10, as shown on **Figure 2-1**. It should be noted that RW-3 was disconnected from the system in November 2006 due to access restrictions and, therefore, groundwater is currently being extracted from the nine active recovery wells. Extracted groundwater is pumped from the recovery wells into a single header equipped with a flow meter, sample port, bag filter, and a control valve prior to the groundwater entering an air stripper unit. Following treatment by the air stripper unit, the groundwater is pumped through two granular activated carbon (GAC) filters, an intermediate bag filter, and two SIR-300™ cation exchange resin filters before the treated groundwater is discharged to an underground storm water line that eventually discharges to an unnamed tributary of Third Fork Creek. The layout of the groundwater remediation system piping is shown on **Figure 2-2**.

2.1 Treatment System Operation and Maintenance

The groundwater remediation system is generally inspected by Arcadis personnel on a weekly basis in accordance with the NPDES permit. System operational information recorded during the weekly site checks includes readings from the various pressure and flow gauges located on the bag filters, flow meter, air stripper, effluent pump, GAC and resin units, and effluent totalizer. Minor adjustments are made whenever necessary to keep the system operating as efficiently as possible. Weekly maintenance activities include changing of the cloth bag filters and backwashing the GAC and resin units as necessary. Monthly O&M activities include cleaning of the air stripper and effluent transfer pump. In addition, the carbon in the two GAC units is typically changed out on a monthly basis and the resin is typically replaced as needed (generally once per year).

The groundwater remediation system was occasionally deactivated during the operational period covered by this report (January 1, 2015, through December 31, 2015) to perform both scheduled and unscheduled maintenance activities. A complete summary of the treatment system sampling and O&M activities performed from January 1, 2015 through December 31, 2015 is included as **Table 2-1**.

The recovery wells are typically inspected on a quarterly basis to ensure optimal performance of the groundwater remediation system. All of the active recovery wells

were generally operational for the majority of the time covered by this report (January through December 2015).

Based on the weekly totalizing flow meter readings, approximately 8,019,197 gallons of impacted groundwater had been pumped and treated since activation of the system in June 2001. Approximately 362,005 gallons of groundwater were recovered and treated during the calendar year 2015.

To assist in evaluating the system effectiveness, the amount of contaminant mass that is removed from the groundwater is calculated on a monthly basis utilizing monthly influent concentrations for contaminants and monthly groundwater extraction rates. The mass removal calculations for the groundwater remediation system are presented in **Table 2-2**. During the calendar year 2015, it is estimated that approximately 47 pounds of contaminants were removed by the groundwater treatment system based on the volume of groundwater extracted by the remediation system and the analytical data from monthly treatment system influent samples collected between January 2015 and December 2015. It is estimated that a total of approximately 2,401 pounds of contaminants have been removed by the groundwater treatment system based on the volume of groundwater extracted and the analytical results from all influent sampling events conducted since its activation in June 2001.

2.2 Treatment System Sampling

The NPDES permit associated with the groundwater remediation system requires periodic collection of samples from the groundwater treatment system for laboratory analysis. Monthly sampling parameters include total suspended solids (TSS), oil and grease, and total manganese. Quarterly sampling parameters include select VOCs by USEPA Method 624, bis(2-ethylhexyl)phthalate by USEPA Method 625, pH by USEPA Method 150.1, total iron and zinc by USEPA Method 200.7, along with chronic toxicity testing. Annual system effluent sampling includes analysis of the effluent sample for the “full suite” of VOCs using U.S. Environmental Protection Agency (USEPA) Method 624, and for the “full suite” of SVOCs using USEPA Method 625. The above-listed analytical parameters and sampling frequencies are listed in the NPDES permit.

2.2.1 Monthly NPDES Parameter Sampling

Monthly NPDES sampling activities were performed on February 12, April 28, May 26, June 29, July 28, August 28, September 29, October 27, November 23, and

December 21, 2015. During the months of January and March 2015, NPDES sampling did not occur because the system was deactivated due to inclement weather.

During the monthly NPDES sampling events, grab samples were collected from the treatment system effluent sampling port, placed into appropriately labeled containers, packed on ice in a cooler, and delivered to the analytical laboratory. Water samples collected in the field remained in the presence of a project representative until the samples were shipped via Federal Express to Test America, Inc. (Test America), in Savannah, Georgia. Each cooler containing groundwater samples included a completed chain-of-custody record to maintain a record of personnel that have contact with the samples. The effluent samples from the groundwater remediation system were analyzed by Test America for TSS by Standard Method 2540D, total manganese by USEPA Method 200.7, and oil and grease by USEPA Method 1664. In general, the analytical results from the monthly NPDES sampling events indicated that the groundwater treatment system was effectively treating the extracted groundwater. All monthly parameters were in compliance with the permit requirements except for manganese, which was detected at a concentration (0.370 milligrams per liter [mg/L]) above the permitted discharge limit of 0.200 mg/L during the February 2015 sampling event.

2.2.2 Quarterly NPDES Chronic Toxicity Test Sampling

In addition to the monthly NPDES sampling activities, water samples were collected at the effluent sampling port for select VOCs by USEPA Method 624, bis(2-ethylhexyl) phthalate by USEPA Method 625, pH by USEPA Method 150.1, total iron and zinc by USEPA Method 200.7, along with chronic toxicity testing in February, April, July, and October 2015. Because the groundwater remediation system was shut down the entire month of January and March 2015, an NPDES sampling event that included the quarterly parameter list was not performed in January or March. In order to meet the NPDES permit requirements of analyzing NPDES samples for the quarterly parameter list at least once per quarter, the quarterly parameter list was utilized for the February 2015 sampling event.

The remediation system effluent was sampled for the standard pass/fail chronic toxicity tests on February 10 and 12, 2015, April 28 and 30, 2015, July 28 and 30 2015, and October 27 and 29, 2015. Samples were analyzed by Research & Analytical Laboratories, Inc. (R&A Labs), according to the test procedures outlined in the North Carolina *Ceriodaphnia* Chronic Effluent Pass/Fail Reproduction Toxicity Test

Procedure. The analytical results from the quarterly NPDES sampling events indicated that all of the quarterly parameters were in compliance with permit requirements.

2.2.3 Annual NPDES Sampling

In addition to the standard monthly analytical requirements, annual system sampling includes laboratory analysis of the effluent sample for the "full suite" of VOCs using USEPA Method 624, and for the "full suite" of semi-volatile organic compounds (SVOCs) using USEPA Method 625. Annual NPDES sampling activities were conducted on November 23, 2015. The analytical results from the annual NPDES sampling event indicated that the groundwater treatment system was effectively treating the extracted groundwater and all parameters were in compliance with permit requirements. No VOCs or SVOCs were detected above the laboratory reporting limits for the effluent sample collected on November 23, 2015.

2.3 NPDES Reporting

Discharge monitoring reports (DMRs) were generated for each of the monthly sampling events and were submitted to the Division of Water Resources (DWR). Effluent Aquatic Toxicity Report Forms were generated for the February, April, July, and October 2015 chronic toxicity sampling events and submitted to the DWR as per the requirements of the NPDES permit. Copies of the DMRs, Effluent Aquatic Toxicity Reports, and associated laboratory analytical reports and cover letters for the monthly NPDES sampling events are included in **Appendix A**. As indicated in the reports, the sampling results for manganese from February 2015 did not comply with the NPDES permit requirements. The following section summarize the February 2015 noncompliance sampling event.

2.3.1 February 2015 NPDES Sampling Event

Prior to collection of the effluent grab sample on February 10, 2015, the groundwater remediation system had been deactivated for 40 consecutive days (December 31, 2014 through February 10, 2015), due to an extended period of subfreezing temperatures. An attempt to restart the system was initially made on February 2, 2015; however, freeze-related damage to the effluent totalizer was discovered and the system could not be restarted until the totalizer could be replaced. A new totalizer was installed on February 10, 2015, just prior to performing the NPDES sampling event. Based on system flow calculations, a relatively small volume of water had passed through the system between the time of startup and the time of sample collection on February 10,

2015. The system was operational from February 10 to February 12, 2015, at which point it was shut down due to subfreezing temperatures. The system remained deactivated through the end of the month of February due to an extended period of subfreezing temperatures.

The results of the February 10, 2015 NPDES sampling event indicated that manganese was detected at a concentration of 0.370 mg/L, which exceeds the permit's monthly concentration limit of 0.200 mg/L. Upon learning of these results, a detailed inspection of the groundwater remediation system was performed on February 24, 2015 to investigate the cause of the manganese breakthrough. During the inspection it was discovered that elevated levels of suspended solids had passed through the air stripper, carbon vessels, and bag filter chambers and had collected in the manganese treatment vessels prior to discharge. Fouling likely occurred within the conveyance lines during the extended period of downtime as evidenced by heavy particle loading of the influent stream and backpressure at the bag filter housing unit, which was noted at the time of the system restart on February 10, 2015. As a result, the elevated suspended solids content in the manganese treatment vessels significantly reduced the treatment efficiency of the selective resin. Therefore, the manganese concentration reported for the effluent sample collected on February 10, 2015 was determined to be an anomaly that likely resulted from heavy particulate loading in the resin vessels.

3. Annual Sampling Event Field Activities

The groundwater sampling field activities were conducted by Arcadis on December 1 through 16, 2015. Field activities consisted of collecting water-level measurements from all site monitor wells and recovery wells and collection of groundwater samples from 16 site monitor wells and 9 recovery wells.

The following sections discuss the field activities performed during the annual sampling event. The locations of the site monitor wells and recovery wells are shown on **Figure 2-1**, and the construction details for the site monitor wells and recovery wells are listed on **Table 3-1**.

3.1 Water-Level Measurements

Depth-to-water measurements were collected from tops of casings from all site wells on December 1, 2015, to determine the groundwater flow direction and hydraulic gradients at the site. The water level measurements were collected from the monitor wells and recovery wells with an electronic water level probe, which was decontaminated with a dilute phosphate-free soap/water solution prior to inserting the probe into each well. The water level measurements were converted to groundwater elevations using existing monitor well and recovery well top of casing elevation data. The groundwater elevations were used to prepare potentiometric contour maps for the surficial and bedrock aquifers and to determine the groundwater flow direction at the site as discussed in Section 4.1.

3.2 Groundwater Sampling

Sixteen monitor wells (MWW-15d, MWW-33, MWW-34, MWW-37, MWW-38, MWW-43, MWW-45, MWW-46I, MWW-47I, MWW-48, MWW-49D, MWW-50D, MWW-51D, MWW-52, MWW-53, and MWW-57I) were sampled on December 1 through 3, 2015. Groundwater sampling was conducted in accordance with Arcadis standard quality assurance protocols. A separate disposable polyethylene bailer was used for purging and sampling each monitor well.

After purging each well volume, an aliquot of water was collected and analyzed for field parameters including: temperature, pH, specific conductance, dissolved oxygen, oxidation reduction potential (ORP), and turbidity using portable multi-parameter meters. This information was recorded on a water sampling form and referenced to ensure that these parameters had stabilized prior to collection of the groundwater

sample designated for laboratory analysis. Each monitor well was purged of at least 3 well volumes of water prior to sampling with the exception of MWW-34, MWW-43, and MWW-51D, which purged dry after removing approximately one to three well volumes. The results of the field parameter measurements are discussed in Section 4.2.

Nine of the ten recovery wells (RW-1, RW-2, RW-4, RW-5, RW-6, RW-7, RW-8, RW-9, and RW-10) were sampled on December 15 through 16, 2015. Recovery well RW-3 was deactivated in 2006 due to an expansion of the facility's infrastructure which permanently restricts access to the recovery well vault. Groundwater samples were collected from all recovery wells using a peristaltic pump and disposable polyethylene tubing. New tubing was used to purge and sample each recovery well. Field parameter measurements of temperature, pH, specific conductance, dissolved oxygen, ORP, and turbidity were collected from the recovery wells using calibrated, portable meters in the field and the results of these measurements are discussed in Section 4.2.

Groundwater samples were collected into appropriately labeled laboratory supplied containers, packed on ice in a cooler, and shipped via Federal Express to Test America in Savannah, Georgia. Shipments of samples to the laboratory included a completed chain-of-custody form to maintain a record of personnel that had contact with the samples.

The groundwater samples collected from site monitor wells and recovery wells were analyzed for VOCs by USEPA Method 8260. The results of the groundwater analyses are discussed in Section 4.3.

4. Annual Sampling Event Results

The results of the field measurements collected from the site monitor wells and recovery wells are presented in this section along with the groundwater quality analytical results for the December 2015 groundwater sampling event.

4.1 Groundwater Flow Direction

Water level measurements were collected from the site wells on December 1, 2015. The depth-to-water measurements and the converted groundwater elevations for the December 1, 2015 gauging event and historic events are listed on **Table 4-1**.

The water level elevations in the surficial aquifer monitor wells at the site ranged from 370.44 feet above mean sea level (ft msl) in MWW-43 to 402.33 ft msl in upgradient monitor well MW-1. The water elevations in the recovery wells ranged from 350.70 ft msl in RW-5 to 357.99 ft msl in RW-2. In addition, MWW-50D was under artesian conditions at the time of gauging, which is consistent with all past sampling events.

Groundwater contour maps were prepared for the surficial and bedrock aquifers using the water-level elevation data from the wells (**Figures 4-1** and **4-2**). Based on the information presented on **Figure 4-1**, the overall groundwater flow direction in the surficial aquifer appears to be generally towards the south and southwest across the site. In comparing the groundwater flow map created with the water-level elevation data from the baseline measurement event conducted in April 2001 with the flow maps created after the groundwater remediation system was activated, it is apparent that the groundwater recovery system has significantly altered the groundwater flow pattern at the site. Based on the December 2015 water level data, the capture zone created by the groundwater extraction wells extends to the southwest for a distance of at least 300 feet from RW-8. A very steep hydraulic gradient has developed in the vicinity of the recovery wells as indicated by water-level elevation differences of 25 to 30 feet between the recovery wells and adjacent monitor wells.

Based on the information presented on **Figure 4-2**, the groundwater in the bedrock aquifer appears to flow to the southwest, which is consistent with the flow direction observed during previous water-level measurement events.

December 2015 groundwater elevation data indicates that a slight downward vertical hydraulic gradient exists between the surficial and bedrock aquifer units southwest of the site, as evidenced by the difference between the water-level elevations in well pair MWW-47I/MWW-49D. A downward vertical gradient of 0.0132 feet per foot (ft/ft) was calculated for well pair MWW-47I/MWW-49D, while a slight upward vertical gradient of 0.0215 ft/ft was calculated for well pair MWW-34/MWW-51D located on the eastern portion of the site. Also, a significant upward hydraulic gradient exists at the western portion of the site as indicated by the artesian conditions which were observed at deep bedrock well MWW-50D. The downward vertical hydraulic gradient for well pair MWW-47I/MWW-49D is consistent with vertical gradients observed during previous gauging events, except for the March 2002 and December 2003 gauging data, which indicated upward vertical gradients. The upward vertical gradient at well pair MWW-34/MWW-51D is similar to the gauging data observed at the site since December 2002, though a downward gradient had been observed at well pair MWW-34/MWW-51D prior to that time. The reversal of the vertical gradient with respect to historical data is likely due to the groundwater recovery system dewatering the surficial aquifer.

4.2 Groundwater Parameters

The groundwater field parameters for temperature, pH, dissolved oxygen, specific conductance, ORP, and turbidity were measured for samples collected from monitor wells and recovery wells during the December 2015 sampling event. The last set of field parameter measurements that were recorded prior to sampling the monitor wells are presented in **Table 4-2**. The temperature, pH, dissolved oxygen, specific conductance, ORP, and turbidity ranges for the monitoring wells were as follows: 13.86 to 20.27 degrees Celsius (°C), 5.02 to 9.84 standard units, 0.93 to 3.45 mg/L, 95 to 1,162 micromhos per centimeter (µmhos/cm), -95.8 to 169.7 millivolts (mV), and 8.15 to greater than 1,000 nephelometric turbidity units (NTU), respectively.

The field parameter measurements collected from the recovery wells during the December 2015 sampling event are presented in **Table 4-3**. The temperature, pH, dissolved oxygen, specific conductance, ORP, and turbidity ranges for the recovery wells were as follows: 15.25 to 18.61 °C, 7.18 to 8.02 standard units, 3.90 to 9.32 mg/L, 223 to 1,082 µmhos/cm, -96.1 to 11.6 mV, and 5.43 to 236 NTUs, respectively. The temperature, pH, dissolved oxygen, specific conductance, ORP, and turbidity measurements collected during the December 2015 sampling event are consistent with measurements collected during previous monitor well and recovery well sampling events.

4.3 Annual Sampling Analytical Results

The analytical results for the December 2015 sampling event are summarized in **Table 4-4**. A copy of the laboratory analytical data report associated with the December 2015 sampling event is included in **Appendix B**.

Based on the laboratory data results for the December 2015 sampling event, groundwater samples collected from 18 of the 24 wells contained VOCs at concentrations that exceeded North Carolina Groundwater Standards. Total VOC concentrations ranged from below detection limits (BDL) to a maximum of 179,223 micrograms per liter (µg/L) in recovery well RW-7. Tetrachloroethene (PCE) concentrations ranged from BDL to a maximum of 17,000 µg/L in MWW-33. Trichloroethene (TCE) concentrations ranged from BDL to a maximum of 28,000 µg/L in MWW-33. Cis-1,2 dichloroethene (cis-1,2-DCE) concentrations ranged from BDL to a maximum of 21,000 µg/L in RW-7. Vinyl chloride concentrations ranged from BDL to a maximum of 4,500 µg/L in RW-8. Additionally, several other VOC constituents were detected at concentrations above their respective Groundwater Standards during the December 2015 sampling event.

Isoconcentration contour maps for total VOCs, PCE, TCE, cis-1,2-DCE, and vinyl chloride were prepared using the analytical data from the December 2015 sampling event and are presented in **Figures 4-3** through **4-7**, respectively. The analytical data from previous groundwater sampling events were also considered for determining the appropriate locations of the isoconcentration contours.

The isoconcentration contour maps indicate that the horizontal and vertical extents of the impacted groundwater plume have been defined by the existing monitor well network. Based on the analytical results from the December 2015 sampling event and previous sampling events, the original source area for the impacted groundwater plume appears to be located in the solvent storage area and the former solvent tank farm area. The vertical extent of the impacted groundwater plume appears to be primarily limited to the surficial aquifer unit, and the plume appears to be relatively stable.

4.4 Historical VOC Trends

A review of analytical data from previous groundwater sampling events indicate that the overall concentrations of total VOCs in the majority of the monitor wells and recovery wells have generally decreased and/or stabilized since the baseline April/May

2001 sampling event. Monitor wells located in the vicinity of the source area (i.e. MWW-4d, MWW-15d, MWW-37, and MWW-45) have displayed the most significant decreases in total VOC concentrations since the remediation system start-up. **Table 4-5** presents the historical groundwater data for the site, beginning with the April 2001 sampling event. Time series graphs showing concentration trends at the site from April/May 2001 through December 2015 were prepared for select source area monitor wells and all active recovery wells. The graphs are presented in **Appendix C**.

4.4.1 VOC Trends in Monitor Wells

A review of the historic and current groundwater analytical data from source area monitor wells indicates the following:

- Total VOC concentrations in MWW-15d have decreased from 39,322 µg/L in April 2001 to 1,275 µg/L in December 2015. The decrease in total VOC concentrations is the result of decreasing concentrations of several VOCs including: 1,1-DCA; 1,1-DCE; cis-1,2-DCE; 1,1,1-TCA; PCE; TCE; toluene; vinyl chloride; and total xylenes.

- A significant decrease in total VOC concentrations in MWW-45 is attributable to decreasing TCE and PCE concentrations. Total VOC concentrations in MWW-45 have decreased from 22,314 µg/L in April 2001 to 746 µg/L in December 2015. PCE concentrations in this well have decreased from 9,320 µg/L to BDL between April 2001 and December 2015.

- A steady decrease in the total VOC concentrations, followed by a period of relatively stable concentrations was observed in MWW-37. The total VOC concentration in MWW-37 has decreased from 3,378 µg/L in April 2001 to 641 µg/L in December 2015.

- The total VOC concentrations in monitor well MWW-33 fluctuated for a couple of years following startup of the groundwater remediation system with limited reduction in total VOC concentrations from April 2001 through September 2003. Total VOC concentrations have steadily decreased from September 2003 through December 2015. The total VOC concentration in MWW-33 was 134,810 µg/L in April 2001 compared to 48,540 µg/L in December 2015. Recovery well RW-10, which is located adjacent to MWW-33, had initially operated on a less frequent basis than the other recovery wells following startup of the groundwater treatment system in 2001. The initial

inconsistent operation of RW-10 may account for the variability in VOC concentrations historically observed in monitor well MWW-33.

4.4.2 VOC Trends in Recovery Wells

Several recovery wells display trends of declining VOC concentrations similar to the monitor wells. A review of the historic and December 2015 groundwater analytical data from the site recovery wells indicate the following:

- A very significant reduction in total VOC concentration as compared to the baseline sampling event in May 2001 has been observed in RW-5 due to decreasing concentrations of several constituents including: acetone, cis-1,2-DCE, methylene chloride, MEK, toluene, 1,1,1-TCA, PCE, and total xylenes. The total VOC concentration in RW-5 has decreased from 267,001 μg/L in May 2001, to 4,131 μg/L in December 2015.

- A very significant reduction in total VOC concentration as compared to the baseline sampling event in May 2001 has also been observed in RW-9. Significant reductions in TCE, MEK, MIBK, 1,1,1-TCA, 1,1-DCE, cis-1,2-DCE, and methylene chloride concentrations have been observed since the baseline sampling event in May 2001. The total VOC concentrations in RW-9 have decreased from 721,399 μg/L in May 2001 to 7,173 μg/L in December 2015.

- A general decline in the total VOC concentrations followed by relatively stable concentrations was observed in RW-1 and RW-2.

    - The majority of the decrease in total VOC concentration in RW-1 can be attributed to decreases in acetone, 1,1-DCE, cis-1,2 DCE, toluene, and 1,1,1-TCA.

    - VOC concentrations detected in RW-2 have fluctuated in a similar manner to those detected in monitor well MWW-37, which is located adjacent to RW-2. An initial decline in several VOCs detected in RW-2 including PCE, TCE, vinyl chloride, and cis-1,2-DCE, was followed by relatively stable concentrations beginning in March 2002.

- Total VOC concentrations in the other active recovery wells (RW-4, RW-6, RW-7, RW-8, and RW-10) have generally decreased to some extent but the VOC concentrations in these wells have continued to fluctuate since operation of the groundwater remediation system began in June 2001.

5. Summary

This section provides a summary of the groundwater remediation system O&M and system sampling activities conducted for the period of January through December 2015. In addition, this section presents a summary of the results of the annual monitor well sampling event conducted in December 2015. The data collected during the performance monitoring period documented in this report indicate that the groundwater remediation system is effectively extracting impacted groundwater from the surficial aquifer and containing the impacted groundwater plume on the site. Furthermore, the results of the monthly NPDES sampling events conducted during this performance monitoring period indicate that the groundwater remediation system is successfully treating the impacted groundwater that is being extracted from the subsurface prior to discharge.

5.1 Groundwater Remediation System O&M

The groundwater remediation system is generally inspected by Arcadis personnel on a weekly basis. System operational information recorded during the weekly site inspection includes readings from the various pressure and flow gauges located on the bag filters, flow meter, air stripper, effluent pump, GAC and resin filter units, and totalizer. Minor adjustments are made whenever necessary to keep the system operating as efficiently as possible. Weekly maintenance activities include changing of the cloth bag filters and backwashing the GAC and resin units as necessary. Monthly O&M activities include cleaning of the air stripper and effluent transfer pump. The carbon in the two GAC units is changed out periodically (once per month) and the ion exchange resin is replaced (generally once per year) based on the results of system operational data.

The groundwater remediation system was temporarily deactivated on several occasions during the operational period covered by this report (January through December 2015) to allow performance of various maintenance activities and due to other site conditions. Based on totalizer readings collected from the treatment system effluent, approximately 8,019,197 gallons of groundwater have been recovered and treated between the start-up of the groundwater remediation system in June 2001 and December 31, 2015. Approximately 362,005 gallons of groundwater were recovered and treated in 2015.

5.2 Groundwater Remediation System Monthly NPDES Sampling

The NPDES permit associated with the groundwater remediation system requires periodic collection of samples from the groundwater treatment system for laboratory analysis. Monthly NPDES sampling activities were performed on February 12, April 28, May 26, June 29, July 28, August 28, September 29, October 27, November 23, and December 21, 2015. During the months of January and March 2015, NPDES sampling did not occur because the system was deactivated due to inclement weather and maintenance activities. Monthly sampling parameters included TSS, oil and grease, and total manganese.

In general, the analytical results from the monthly NPDES sampling events indicated that the groundwater treatment system was effectively treating the extracted groundwater. All of the monthly parameters were in compliance with the permit's requirements except for manganese, which was detected at a concentration above its respective discharge limit during the February 10, 2015 sampling event. The reported manganese concentration for the effluent sample collected on February 10, 2015 was determined to be an anomaly that resulted from heavy particulate loading in the resin vessels.

5.3 Groundwater Remediation System Quarterly NPDES Chronic Toxicity Sampling

In addition to the monthly NPDES sampling activities, water samples were collected at the effluent sampling port for select VOCs, bis(2-ethylhexyl)phthalate, pH, iron, and zinc, along with chronic toxicity testing in February, April, July, and October 2015. The chronic toxicity samples were analyzed by R&A, Inc., according to the test procedures outlined in the North Carolina *Ceriodaphnia* Chronic Effluent Pass/Fail Reproduction Toxicity Test Procedure. All of the quarterly sampling parameters were in compliance with the NPDES permit requirements during the calendar year 2015.

DMRs for January 2015 through December 2015 were submitted to the DWR as per the requirements of the NPDES permit.

5.4 December 2015 Annual Sampling Event

- The depth-to-water measurements and the converted groundwater elevation data for the shallow and intermediate depth monitor wells indicate that groundwater is flowing south and southwest across the site. The

groundwater elevations for the bedrock monitor wells indicate that the groundwater in the bedrock aquifer also flows generally to the southwest.

- The groundwater flow pattern and the hydraulic gradients calculated using the December 1, 2015 groundwater elevation data indicate that the groundwater recovery system has significantly altered groundwater flow at the site, creating a capture zone that extends at least 300 feet downgradient of RW-8 with a steep hydraulic gradient in the vicinity of the recovery wells.

- The analytical results from the December 2015 groundwater sampling event indicate that VOCs were detected at concentrations exceeding North Carolina Ground Water Standards in groundwater samples collected from 18 of the 24 wells sampled. The existing monitor well network appears to adequately define the general horizontal and vertical extent of the dissolved VOC plume. The dissolved VOC plume appears relatively stationary based on comparisons with historical data, and the total VOC concentrations in the majority of the monitor wells and recovery wells in the source area have decreased significantly.

Annual Report on Groundwater Remediation System O&M and Monitor Well Sampling—January through December 2015

Tables

Table 2-1. Groundwater Remediation System Sampling and Operation and Maintenance Record for 2015, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Date	Maintenance Activity	Comments	System Status	Totalizer Reading	Gallons Pumped in Period	Average GPM
1/5/2015	System insepction	System deactivated.	Deactivated	7,657,192	0	0.00
1/12/2015	System insepction	System deactivated.	Deactivated	7,657,192	0	0.00
1/20/2015	PRM (R. Byers) onsite for O&M activities.	System cleaning and RW maintenance. Pulled and inspected pump at RW-2. Pump needs to be replaced. RW-2 shut off unitl new pump can be installed.	Deactivated	7,657,192	0	0.00
1/21/2015	PRM (S. Baldwin) onsite to complete O&M activities.	Completed O&M activities and attempted to restart system. Back pressure after 2nd GAC unit determined to be caused by broken head screen in GAC #2. Effluent totalizer malfunction due to freeze-related damage (Badger meter **SN33073800** final meter reading: **3,322,401**). System to remain deactivated.	Deactivated	7,657,192	0	0.00
1/30/2015	System insepction	New totalizer installed (Badger meter **SN46645876**, initial reading: **0,000,000**. System to remain deactivated due to freezing conditions.	Deactivated	7,657,192	0	0.00
2/2/2015	System insepction	System deactivated.	Deactivated	7,657,192	0	0.00
2/10/2015	D. Twamley onsite to collect quarterly NPDES samples.	Restarted and inspected system. System is operating normally. NPDES and CT samples collected.	Deactivated/Running	7,657,192	0	0.00
2/12/2015	D. Twamley onsite to collect CT samples.	Collected 2nd chronic toxicity sample. PRM installed a new pneumatic pump in RW-2, shut down and winterized system.	Running/Deactivated	7,660,764	3,572	1.19
2/16/2015	System insepction	System deactivated.	Deactivated	7,660,764	0	0.00
2/25/2015	System insepction	Sub-freezing conditions persist onsite. One (1) FRP carbon vessel has been damaged due to freeze-related expansion.	Deactivated	7,660,764	0	0.00

Table 2-1. Groundwater Remediation System Sampling and Operation and Maintenance Record for 2015, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Date	Maintenance Activity	Comments	System Status	Totalizer Reading	Gallons Pumped in Period	Average GPM
3/25/2015	PRM onsite to repair pipeline	PRM utilized old GAC vessel for temporary use until replacement vessel can be ordered. Replaced several sections of the groundwater extraction system's water return line (2-inch-diameter, schedule 80 PVC). Pressure test failed, additional leaks were discovered between RW-2 and treatment system.	Deactivated	7,660,764	0	0.00
3/26/2015	PRM onsite to repair pipeline	PRM completed installing the new sections of the groundwater extraction system's water return line (2-inch-diameter, schedule 80 PVC) between RW-2 and the treatment system. Pressure test was successful. System to remain deactivated until water quality testing can be performed.	Deactivated	7,660,764	0	0.00
3/31/2015	System insepction	System deactivated.	Deactivated	7,660,764	0	0.00
4/6/2015	System insepction	Attempted to restart system. Backpressure on 1st GAC unit. Possible blockage.	Deactivated	7,661,552	788	0.08
4/15/2015	D. Twamley onsite to restart system	Heavy sediment loading in GAC units. Backwashed Resin and GAC filters until water cleared up.	Restarted	7,661,552	0	0.00
4/22/2015	PRM onsite for monthly O&M		Running	7,663,586	2,034	0.20
4/28/2015	D. Twamley onsite for quarterly NPDES sampling		Running	7,676,706	13,120	1.59
4/30/2015	D. Twamley onsite for part 2 CT sampling		Running	7,681,005	4,299	1.54
5/7/2015	System inspection		Running	7,694,408	13,403	1.30
5/18/2015	PRM onsite for monthly O&M		Running	7,717,600	23,192	1.44
5/19/2015	System inspection and performance monitoring	System performance samples collected (Mn 200.7) along the treatment train.	Running	7,719,660	2,060	1.44
5/21/2015	System inspection		Running	7,723,720	4,060	1.39

Table 2-1. Groundwater Remediation System Sampling and Operation and Maintenance Record for 2015, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Date	Maintenance Activity	Comments	System Status	Totalizer Reading	Gallons Pumped in Period	Average GPM
5/26/2015	D. Twamley onsite to collect monthly NPDES samples.	NPDES samples collected for monthly parameters.	Running	7,733,249	9,529	1.39
6/3/2015	System inspection		Running	7,749,353	16,104	1.36
6/11/2015	System inspection		Running	7,764,634	15,281	1.32
6/18/2015	System inspection		Running	7,776,715	12,081	1.27
6/23/2015	J. Fino onsite with PRM to perform monthly O&M	Jared replaced the ion exchange media in both of the ion exchange vessels.	Running	7,785,943	9,228	1.26
6/26/2015	Performance monitoring	System performance samples collected (Mn 200.7) along the treatment train.	Running	7,788,584	2,641	0.56
6/29/2015	D. Twamley onsite to collect monthly NPDES samples.		Running	7,790,887	2,303	0.53
7/1/2015	System inspection		Running	7,792,047	1,160	0.49
7/8/2015	System inspection		Running	7,796,850	4,803	0.47
7/15/2015	System inspection		Running	7,801,613	4,763	0.46
7/20/2015	System inspection		Running	7,805,031	3,418	0.47
7/27/2015	PRM onsite for monthly O&M	Low influent flow rate.	Running	7,806,440	1,409	0.15
7/28/2015	D. Twamley onsite to collect quarterly NPDES samples.	Totalizer malfunction (wheel is not spinning).	Running	7,806,466	26	0.02
7/30/2015	DT and Robert Prigge onsite to inspect RWs, collected chronic tox sample.	Operational wells (RW-2, RW-4, RW-5, RW-7, and RW-10). Deactivated (RW-3 and RW-6). Not pumping (RW-8). Not inspected (RW-1 and RW-9).	Running/Deactivated	7,806,466	0	0.00

Table 2-1. Groundwater Remediation System Sampling and Operation and Maintenance Record for 2015, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Date	Maintenance Activity	Comments	System Status	Totalizer Reading	Gallons Pumped in Period	Average GPM
7/31/2015	PRM onsite to install new totalizer	New totalizer installed (PRM meter initial reading: **0,000,000**).	Restarted	7,806,466	0	0.00
8/5/2015	System inspection	System operating properly	Running	7,818,303	11,837	1.63
8/14/2015	DT and Robert Prigge onsite to complete RW inspections.	RW-1 and RW-9 operating properly.	Running	7,836,349	18,046	1.45
8/18/2015	System inspection	System operating properly	Running	7,844,570	8,221	1.42
8/25/2015	PRM onsite for monthly O&M		Running	7,859,064	14,494	1.40
8/28/2015	D. Twamley onsite to collect monthly NPDES samples.		Running	7,865,241	6,177	1.36
8/31/2015	System inspection	System operating properly	Running	7,871,074	5,833	1.35
9/1/2015	System inspection	System operating properly	Running	7,873,066	1,992	1.36
9/8/2015	System inspection	System operating properly	Running	7,887,006	15,932	1.58
9/15/2015	System inspection	System operating properly	Running	7,900,482	13,476	1.35
9/24/2015	PRM onsite for monthly O&M	Union vlave at flow meter broke during cleaning. System to remain shutdown until new valve can be installed.	Running/Deactivated	7,914,731	14,249	1.13
9/25/2015	PRM onsite to restart system.	Union valve replaced, system restarted.	Deactivated/Running	7,914,731	0	0.00
9/28/2015	System inspection	System was found to be deactivated on arrival. Ball valve was inadvertently left in the close position following maintenance on 9/25. Valve was opened and alarm conditions were cleared. System is now operating properly.	Deactivated/Running	7,914,801	70	0.02

Table 2-1. Groundwater Remediation System Sampling and Operation and Maintenance Record for 2015, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Date	Maintenance Activity	Comments	System Status	Totalizer Reading	Gallons Pumped in Period	Average GPM
9/29/2015	D. Twamley onsite to collect monthly NPDES samples.	Monthly system samples collected.	Running	7,915,910	1,109	0.96
9/29/2015	System shutdown	Brenntag Maintenance called to report an air leak from subsurface conveyance line between **RW-8** and **RW-9**. Intrusive worked to be completed by Brenntag contractor (Burlington Mechanical). Inspection planned for 10/1/15.	Running/Deactivated	7,916,242	332	1.15
10/1/2015	D. Twamley onsite with Burlington Mechanical to inspect air leak.	Cut and removed concrete cap and located leak in galvanized air line connecting to **RW-9**.	Deactivated	7,916,242	0	0.00
10/5/2015	D. Twamley onsite with Burlington Mechanical to repair air leak.	Replaced air line pipe connecting to **RW-9**.	Deactivated	7,916,242	0	0.00
10/12/2015	D. Twamley onsite with Burlington Mechanical to repair air leak.	Located air leak at **RW-6**. Replaced subsurface galvanized airline pipe.	Deactivated	7,916,242	0	0.00
10/13/2015	System restarted		Deactivated/Running	7,916,242	0	0.00
10/22/2015	PRM onsite to perform monthly O&M event.		Running	7,935,483	19,241	1.51
10/27/2015	D. Twamley onsite to collect quarterly NPDES samples		Running	7,945,046	9,563	1.31
10/29/2015	D. Twamley onsite to collect CT samples		Running	7,948,914	3,868	1.35
11/2/2015	System inspection		Running	7,956,706	7,792	1.39
11/9/2015	System inspection		Running	7,970,342	13,636	1.31
11/13/2015	System inspection		Running	7,978,134	7,792	1.35
11/19/2015	PRM onsite to perform monthly O&M event.		Running	7,988,424	10,290	1.23

Table 2-1. Groundwater Remediation System Sampling and Operation and Maintenance Record for 2015, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Date	Maintenance Activity	Comments	System Status	Totalizer Reading	Gallons Pumped in Period	Average GPM
11/23/2015	D. Twamley onsite to collect Annual NPDES samples	PRM onsite to insulate overhead conveyance piping between RW-2 and AST.	Running	7,996,975	8,551	1.46
11/30/2015	DT and RP onsite to perform annual GW sampling event	Blower pressure alarm conditions on arrival due to dislodged AS window. Replaced plexi-glass and tightened fernco clamps. System restarted.	Not Running / Running	8,000,419	3,444	0.35
12/2/2015	DT and RP onsite to perform annual GW sampling event	Deactivated system due to air pressure regulator malfunction.	Running / Deactivated	8,000,419	0	0.00
12/14/2015	PRM onsite to install new pressure regulator		Restarted	8,000,419	0	0.00
12/15/2015	PRM onsite for monthly O&M event. R. Prigge onsite for GW sampling RW pumping wells	AST recirculated. PRM did not bring the correct type of carbon, will replace GAC tomorrow (12/16/15).	Running / Deactivated	8,003,173	2,754	1.91
12/17/2015	PRM onsite to complete monthly O&M event	Completed GAC replacement and restarted system	Restarted	8,003,173	0	0.00
12/21/2015	D. Twamley onsite to collect monthly NPDES samples		Running	8,008,027	4,854	0.81
12/29/2015	System inspection		Running	8,015,505	7,478	0.65
12/31/2015	D. Twamley onsite to winterize system due to forecasted sub-freezing temperatures.	System shutdown and drained to prevent freeze-releated damage.	Running / Deactivated	8,019,197	3,692	1.28

Table 2-2. Groundwater Remediation System Mass Removal Calculations, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Date	Totalizer Reading (gallons)	Totalizer Reading (liters)	Monthly Flow (liters)	Acetone (ug/l)	PCE (ug/l)	TCE (ug/l)	Toluene (ug/l)	Vinyl chloride (ug/l)	Total Xylenes (ug/l)	MEK (ug/l)	Methylene chloride (ug/l)	Naphthalene (ug/l)	Chloroform (ug/l)	Benzene (ug/l)	Ethyl-benzene (ug/l)	Isopropyl-benzene (ug/l)	MIBK (ug/l)	1,1,1-TCA (ug/l)	1,1-DCA (ug/l)	1,1-DCE (ug/l)	cis-1,2-DCE (ug/l)	Total Target VOCs (ug/l)	Total Target VOCs (pounds)		Total Target VOCs per Quarter (pounds)	
6/22/01	84,280	319,034	319,034	13,200	2,730	4,110	3,090	1,070	254	1,930	18,600	NA	20.6	23.0	NA	NA	620	4,820	180	3,170	3,220	57,038	06/22/01	40		
7/23/01	141,810	536,808	217,774	13,200	1,070	2,730	4,710	488	2,060	1,930	21,000	NA	27.7	34.3	NA	NA	1,820	6,880	895	3,220	10,160	70,225	07/23/01	34		
8/31/01	187,200	708,627	171,819	10,605	4,925	4,925	4,710	984	1,885	2,735	14,790	NA	38.9	42.2	NA	NA	1,134	8,890	895	3,220	10,160	69,939	08/31/01	26		
9/21/01	245,620	929,770	221,143	10,605	4,925	4,925	4,710	984	1,885	2,735	14,790	NA	38.9	42.2	NA	NA	1,134	8,890	895	3,220	10,160	69,939	09/21/01	34	3rd Qtr 2001:	134
10/30/01	337,320	1,276,891	347,121	10,605	4,925	4,925	4,710	984	1,885	2,735	14,790	NA	38.9	42.2	NA	NA	1,134	8,890	895	3,220	10,160	69,939	10/30/01	54		
11/26/01	376,060	1,423,538	146,646	10,605	4,925	4,925	4,710	984	1,885	2,735	14,790	NA	38.9	42.2	NA	NA	1,134	8,890	895	3,220	10,160	69,939	11/26/01	23		
12/10/01	410,320	1,553,225	129,688	10,605	4,925	4,925	4,710	984	1,885	2,735	14,790	NA	38.9	42.2	NA	NA	1,134	8,890	895	3,220	10,160	69,939	12/10/01	20	4th Qtr 2001:	96
1/24/02	461,828	1,748,204	194,978	10,605	8,780	7,120	6,330	1,480	1,710	2,735	8,580	NA	50	50	NA	NA	448	10,900	1,610	3,270	10,160	73,828	01/24/02	32		
2/20/02	517,547	1,959,122	210,919	10,605	4,423	3,585	7,225	2,275	2,200	2,735	8,590	NA	30.4	41.9	NA	NA	539	11,100	3,065	3,260	10,160	69,834	02/20/02	32		
3/25/02	603,660	2,285,095	325,972	10,605	4,423	3,585	7,225	2,275	2,200	2,735	8,590	NA	30.4	41.9	NA	NA	539	11,100	3,065	3,260	10,160	69,834	03/25/02	50	1st Qtr 2002:	114
4/25/02	681,400	2,579,372	294,277	10,605	4,423	3,585	7,225	2,275	2,200	2,735	8,590	NA	30.4	41.9	NA	NA	539	11,100	3,065	3,260	10,160	69,834	04/25/02	45		
5/23/02	737,150	2,790,408	211,036	8,010	66.5	49.0	8,120	3,070	2,690	3,540	8,600	NA	10.7	33.7	NA	NA	630	11,300	4,520	3,250	17,100	70,990	05/23/02	33		
6/24/02	806,009	3,051,066	260,659	5,000	1,290	3,260	8,340	2,120	2,870	50	10,100	NA	12.1	33.5	NA	NA	575	13,700	3,100	3,380	11,700	65,531	06/24/02	38	2nd Qtr 2002:	116
7/19/02	846,160	3,203,054	151,988	4,400	2,300	3,640	7,660	2,080	2,960	396	8,920	NA	14.0	38.6	NA	NA	590	11,100	3,140	344	10,800	58,383	07/19/02	20		
9/16/02	907,242	3,434,274	231,220	15,400	1,800	2,310	17,500	4,130	6,540	2,270	23,400	NA	15.4	60.2	NA	NA	1,160	20,500	7,650	7,950	21,200	131,886	09/16/02	67	3rd Qtr 2002:	87
10/24/02	1,000,430	3,787,028	352,754	3,250	121	300	6,570	1,240	2,380	500	7,230	NA	12.0	29.0	NA	NA	550	11,600	2,400	1,370	11,400	48,952	10/24/02	38		
11/20/02	1,072,229	4,058,816	271,788	1,500	3.80	3.20	5,350	950	1,780	25	6,500	NA	1	27.4	NA	NA	398	7,650	2,100	1,110	12,600	39,998	11/20/02	24		
12/19/02	1,139,740	4,314,372	255,556	3,360	4,040	5,800	9,880	1,120	3,980	25	12,800	NA	18.3	34.9	NA	NA	434	27,600	1,930	4,480	13,900	89,402	12/19/02	50	4th Qtr 2002:	112
2/11/03	1,243,504	4,707,160	392,788	4,070	39.5	24.7	7,200	1,480	2,840	25	6,660	NA	2.10	20.2	NA	NA	216	7,500	5,160	2,650	11,300	49,188	02/11/03	43		
3/26/03	1,343,674	5,086,344	379,184	2,110	23.0	176	6,800	1,300	2,220	25	9,000	NA	8.20	31.8	NA	NA	460	1	3,660	2,100	13,200	41,115	03/26/03	34	1st Qtr 2003:	77
4/14/03	1,399,526	5,297,766	211,422	196	19.2	16.6	5,850	1,280	2,230	2,560	6,600	NA	8.00	26.7	NA	NA	461	7,850	3,150	1,770	11,200	43,218	04/14/03	20		
5/29/03	1,512,372	5,724,933	427,167	25	5.40	7.40	7,410	1,700	2,510	2,760	6,160	NA	10.9	22.0	NA	NA	460	1	4,050	2,490	15,300	42,912	05/29/03	40		
6/16/03	1,569,300	5,940,428	215,495	3,280	12,800	8,290	5,550	1,490	2,080	2,810	3,830	NA	46.5	16.2	NA	NA	330	6,120	2,700	2,710	21,700	73,753	06/16/03	35	2nd Qtr 2003:	96
7/21/03	1,692,974	6,408,584	468,156	2,340	1,480	1,710	5,500	1,280	2,020	25	2,810	NA	29.0	16.2	NA	NA	229	8,600	2,080	1,740	23,200	53,059	07/21/03	55		
8/19/03	1,751,944	6,631,809	223,225	4,410	470	1,000	5,400	830	1,960	25	4,970	NA	11.3	36.4	NA	NA	689	4,760	2,960	900	12,200	40,622	08/19/03	20		
9/17/03	1,806,014	6,836,485	204,677	11,600	6.0	7,140	12,500	3750	4,000	3,950	12,300	NA	20.3	43.4	NA	NA	908	21,400	6,360	3,510	19,700	107,188	09/17/03	48	3rd Qtr 2003:	123
10/13/03	1,826,810	6,915,207	78,721	11,300	4,440	10,200	17,000	2,840	5,020	1,830	15,600	NA	31.3	63.5	NA	NA	1120	30,000	4,200	4,700	19,500	127,845	10/13/03	22		
11/14/03	1,887,461	7,144,795	229,588	888	580	1,480	3,180	808	478	25	2,540	NA	2.60	7.50	NA	NA	67.7	4,960	1,640	924	5,250	22,831	11/14/03	12		
12/29/03	1,977,483	7,485,564	340,769	21,600	6,000	14,400	25,300	3,000	5,220	915	19,400	NA	19.4	29.2	NA	NA	702	41,800	4,420	5,250	35,800	183,856	12/29/03	138	4th Qtr 2003:	172
2/24/04	2,004,465	7,587,702	102,138	25	4,600	8,820	17,400	5,560	5,980	25	16,500	NA	25.1	61.4	NA	NA	1200	22,000	7,620	4,410	17,900	112,127	02/24/04	25		
3/26/04	2,077,812	7,865,350	277,648	3,840	11,200	5,800	5,200	3,060	2,300	25	6,200	NA	52.1	23.4	NA	NA	391	10,800	3,240	3,480	32,800	88,412	03/26/04	54	1st Qtr 2004:	79
4/27/04	2,177,014	8,240,869	375,519	2,880	276	412	5,930	1670	1,760	25	3,200	NA	12.0	17.0	NA	NA	247	7,220	2,630	1,920	20,000	48,199	04/27/04	40		
5/21/04	2,226,135	8,426,811	185,943	748	252	379	1,420	476	401	201	1,160	NA	4.20	8.50	NA	NA	89.9	2,090	767	392	1,980	10,369	05/21/04	4		
6/15/04	2,288,739	8,663,793	236,981	2,230	398	1,180	5,230	2,220	2,120	250	3,640	NA	21.0	23.0	NA	NA	199	8,020	2,930	2,160	19,500	50,121	06/15/04	26	2nd Qtr 2004:	70
7/27/04	2,347,686	8,886,931	223,138	3,090	2,880	1,750	1.0	2,640	2,010	25	4,040	NA	19.8	15.1	NA	NA	287	6,160	2,620	2,320	17,500	45,358	07/27/04	22		
8/13/04	2,384,644	9,026,831	139,901	1,250	575	1,680	3,120	870	1,260	412	1,680	NA	31.7	27.1	NA	NA	311	3,800	1,840	660	4,890	22,407	08/13/04	7		
9/17/04	2,482,914	9,398,823	371,991	3,690	623	1,930	9,000	3,090	4,320	250	5,270	NA	10	41.0	NA	NA	647	9,610	5,100	1,730	9,450	54,761	09/17/04	45	3rd Qtr 2004:	74
10/26/04	2,579,364	9,763,924	365,102	25	2.10	2.70	4,200	1	1,620	25	28.2	NA	1	13.4	NA	NA	165	176	1	1,390	13,600	21,250	10/26/04	17		
11/23/04	2,652,167	10,039,513	275,588	315	124	223	2,720	1,050	986	25	1,200	NA	3.50	5.60	NA	NA	65.0	2,180	1,800	780	7,760	19,237	11/23/04	12		
12/31/04	2,720,153	10,296,867	257,354	2,060	152	212	3,940	1,540	1,550	25	2,650	NA	7.40	13.3	NA	NA	236	3,430	2,550	1,210	12,600	32,176	12/31/04	18	4th Qtr 2004:	47
2/15/05	2,761,741	10,454,294	157,427	3,160	3,040	2,240	5,800	4,530	1,770	25	3,570	NA	1	16.4	NA	NA	499	4,930	3,510	1,640	15,900	50,631	02/15/05	18		
3/17/05	2,840,216	10,751,354	297,059	2,660	122	194	4,640	2,360	1,350	301	3,020	NA	5.30	8.70	NA	NA	191	3,340	2,640	1,590	15,800	38,222	03/17/05	25	1st Qtr 2005:	43
4/19/05	2,940,365	11,130,458	379,104	923	84.1	138	1,930	1,020	801	25	1,210	NA	4.00	8.80	NA	NA	162	1,840	1,190	606	6,160	16,102	04/19/05	13		
5/23/05	3,016,417	11,418,345	287,887	1,010	340	570	2,820	1,430	1,080	25	1,980	NA	1	14.2	NA	NA	216	3,680	1,820	902	6,660	22,548	05/23/05	14		
6/24/05	3,090,755	11,699,744	281,399	5,100	448	1,180	9,100	3,620	2,420	937	5,820	NA	1	16.7	NA	NA	384	7,420	5,620	2,080	18,700	62,847	06/24/05	39	2nd Qtr 2005:	67
7/19/05	3,134,386	11,864,905	165,161	1,850	695	1,210	6,550	4,390	2,660	857	4,470	NA	3.60	14.2	NA	NA	223	7,620	5,030	1,670	13,100	50,343	07/19/05	18		
8/19/05	3,229,947	12,226,641	361,737	5,680	295	317	8,550	1,560	1,090	25	1,770	NA	5.25	6.75	NA	NA	134	2,650	1,860	931	9,850	34,724	08/19/05	28		
10/18/05	3,287,820	12,445,714	219,072	10,000	1,640	2,020	12,000	10,100	2,830	5,000	5,240	NA	17.8	28.1	NA	NA	627	5,150	8,520	2,410	25,700	86,283	10/18/05	42	3rd Qtr 2005:	46
11/30/05	3,352,039	12,688,808	243,095	2,500	50	51.5	2,590	3,250	1,070	50	250	NA	3.29	11.2	NA	NA	216	50	2,690	398	3,880	14,160	11/30/05	8		
12/19/05	3,394,789	12,850,634	161,826	20,600	8.06	8.57	6,440	5,450	1,870	50	2,480	NA	4.03	18.3	NA	NA	1650	2,860	4,910	1,320	11,200	58,819	12/19/05	21	4th Qtr 2005:	70
1/20/06	3,465,317	13,117,611	266,977	1,680	495	660	10,000	8,080	6,240	50	4,380	NA	1	25.8	NA	NA	50	1	7,170	3,410	15,500	57,641	01/20/06	34		
2/24/06	3,526,277	13,348,369	230,758	2,500	72.5	85.8	7,140	6,340	1,880	386	2,220	NA	1.54	23.3	NA	NA	50	1,710	7,410	1,540	11,300	40,109	02/24/06	20		
3/24/06	3,575,317	13,534,005	185,636	2,500	4.49	3.32	7,940	5,780	2,890	513	750	NA	1	23.1	NA	NA	50	1,280	5,960	1,330	10,300	36,774	03/24/06	15	1st Qtr 2006:	69
4/25/06	3,654,707	13,834,528	300,523	2,470	13.1	13.7	4,990	4,720	1,720	1,170	50	NA	10	14.8	NA	NA	500	95.0	1,460	629	4,680	21,976	04/25/06	15		
5/30/06	3,716,357	14,067,898	233,370	742	36.8	85.2	3,740	1,910	1,170	325	603	NA	2.68	12.7	NA	NA	50	464	1,970	354	5,010	16,425	05/30/06	8	2nd Qtr 2006:	35
6/29/06	3,803,627	14,398,250	330,352	2,500	248	408	2,830	1,100	932	737	2,050	NA	4.60	11.7	NA	NA	351	1,570	1,470	485	3,970	16,167	06/29/06	12		
7/28/06	3,835,217	14,517,830	119,581	9,220	972	2,060	7,060	3,520	2,180	50	4,170	NA	15.7	27.0	NA	NA	810	3,350	3,590	841	9,140	46,956	07/28/06	12	3rd Qtr 2006:	31
8/22/06	3,875,357	14,669,776	151,946	647	158	358	6,350	7,130	2,390	967	924	NA	3.64	18.5	NA	NA	129	3,760	1	798	5,890	29,523	08/22/06	10		
9/19/06	3,916,967	14,827,287	157,510	50	174	1,940	5,780	6,260	1,710	50	380	NA	2.54	15.9	NA	NA	141	1,340	2,990	658	4,600	25,991	09/19/06	9		
10/31/06	3,968,070	15,020,732	193,445	2,479	242	624	6,203	4,982	2,346	455	1,725	NA	4.74	19.2	NA	NA	200	1,508	3,558	1,116	7,821	33,282	10/31/06	14	4th Qtr 2006:	47

Footnotes appear on last page.

Table 2-2. Groundwater Remediation System Mass Removal Calculations, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Date	Totalizer Reading (gallons)	Totalizer Reading (liters)	Monthly Flow (liters)	Acetone (ug/l)	PCE (ug/l)	TCE (ug/l)	Toluene (ug/l)	Vinyl chloride (ug/l)	Total Xylenes (ug/l)	MEK (ug/l)	Methylene chloride (ug/l)	Naphthalene (ug/l)	Chloroform (ug/l)	Benzene (ug/l)	Ethyl-benzene (ug/l)	Isopropyl-benzene (ug/l)	MIBK (ug/l)	1,1,1-TCA (ug/l)	1,1-DCA (ug/l)	1,1-DCE (ug/l)	cis-1,2-DCE (ug/l)	Total Target VOCs (ug/l)	Total Target VOCs (pounds)		Total Target VOCs per Quarter (pounds)	
11/7/06	4,007,366	15,169,483	148,751	1870	30.9	57.2	8,600	5,720	2,730	1,820	2,220	NA	3.49	23.3	NA	NA	10	6,030	1	1,400	12200	42,705	11/07/06	14		
12/5/06	4,074,129	15,422,208	252,725	2,423	222	572	6,421	5,049	2,381	455	1,770	NA	4.63	19.6	NA	NA	200	1,919	3,235	1,142	8,219	34,033	12/05/06	19		
1/26/07	4,111,055	15,561,988	139,780	50	3.98	7.08	8,340	6,760	2,320	50	7.28	NA	1	14.6	NA	NA	10	96.9	5,850	676	7,890	31,966	01/26/07	10	1st Qtr 2007:	36
2/21/07	4,119,840	15,595,242	33,255	2,350	622	404	5,560	3,980	1,750	50	1,970	NA	7.57	22.4	NA	NA	377	2,820	2,620	890	8,170	31,543	02/21/07	2		
3/20/07	4,186,330	15,846,934	251,691	4,630	38.2	43.8	8,100	5,000	2,540	50	2,530	NA	7.51	22.4	NA	NA	339	4,570	2,840	985	12,000	43,646	03/20/07	24		
4/27/07	4,223,832	15,988,894	141,960	1,360	305	448	6,890	100	1,660	1,450	1,270	NA	5	18.5	NA	NA	248	2,320	2,910	716	7,270	26,866	04/27/07	8	2nd Qtr 2007:	18
5/21/07	4,295,181	16,258,978	270,085	50	6.52	8.03	24.7	198	110	50	5	NA	1	17.8	NA	NA	10	26.1	17.1	30.9	20.7	460	05/21/07	1		
6/29/07	4,350,510	16,468,421	209,442	72.4	33.8	63	5,630	3,650	1,640	40	20	NA	20	20	NA	NA	20	542	4,570	289	2,630	19,120	06/20/07	9		
7/26/07	4,387,427	16,608,166	139,746	500	67.8	140	7,180	4,880	2,940	500	170	NA	10	21.4	NA	NA	111	2,400	5,710	959	9,090	33,669	07/17/07	10	3rd Qtr 2007:	31
8/31/07	4,451,761	16,851,696	243,530	819	365	788	2,770	1,330	1,100	50	981	NA	1	16.5	NA	NA	115	1,970	1,770	437	4,650	17,112	08/22/07	9		
9/28/07	4,508,080	17,064,886	213,190	54.6	8.16	9.43	6,540	2,730	1,910	50	11	NA	1	17.2	NA	NA	81.9	1	3,500	599	8,500	23,962	09/28/07	11		
10/26/07	4,561,357	17,266,561	201,675	1,830	9.00	7.40	3,060	3,330	1,120	500	208	50	10	20.6	183	10	81.2	10	2,310	560	4,730	17,449	10/26/07	8	4th Qtr 2007:	19
11/30/07	4,623,407	17,501,445	234,884	50	54.8	3.87	3,530	4,040	1,330	50	6.72	5.30	1	9.61	183	2.35	10	90.4	2,070	452	2,950	14,728	11/30/07	8		
12/31/07	4,661,588	17,645,975	144,530	50	65.4	117	2,540	3,740	1,000	50	8.69	7.31	1	8.52	160	2.23	10	73.6	1,520	237	1,320	10,800	12/30/07	3		
1/28/08	4,684,490	17,732,668	86,693	1,820	93.4	126	2,920	2,250	1,230	250	551	25	5	10.50	189	5	124	486	1,240	494	3,490	15,024	01/28/08	3	1st Qtr 2008:	19
2/28/08	4,738,907	17,938,659	205,990	2,610	130	110	3,770	2,450	1,120	618	806	5.92	4.75	7.68	173	1.41	105	695	1,170	507	3,160	17,444	02/28/08	8		
3/27/08	4,790,136	18,132,581	193,922	1,960	10.8	12.3	3,360	2,120	1,140	974	1,010	8.31	4.19	9.04	169	2.86	109	1,000	1,190	460	4,600	18,140	03/27/08	8		
4/30/08	4,869,770	18,434,027	301,447	110	6.35	3.12	4,570	3,110	1,680	472	762	6.01	1.42	12.3	257	2.87	152	1,950	2,470	660	6,260	22,485	04/30/08	15	2nd Qtr 2008:	30
5/29/08	4,930,299	18,663,154	229,126	50	286	295	2,580	2,990	1,190	437	272	5.59	1	10.4	170	1.86	30.8	1,050	2,780	628	3,850	16,577	05/29/08	8		
6/20/08	4,981,708	18,857,757	194,604	250	54.6	88.2	3,570	2,740	736	250	75.8	25	5	5.35	114	5	50	897	2,310	209	4,450	15,250	06/20/08	7		
7/25/08	5,027,765	19,032,102	174,344	1370	834	1,320	6,520	4,920	2,120	50	1,420	13.2	9.09	16.4	413	11.0	10	2,840	2,250	515	5,180	29,752	07/25/08	11	3rd Qtr 2008:	32
8/29/08	5,073,502	19,205,234	173,133	3,080	1,150	1,450	7,470	3,340	3,110	932	2,260	19.2	8.94	20.6	552	0.84	307	4,400	1,680	668	5,710	36,159	08/29/08	14		
9/26/08	5,119,463	19,379,215	173,981	443	4.61	6.98	4,580	2,740	1,790	50	462	10.4	1.63	13.0	301	4.18	10	1,760	2,210	555	5,290	20,172	09/26/08	8		
10/31/08	5,164,127	19,548,286	169,071	532	154	145	5,590	3,630	2,100	50	696	12.1	2.22	14.1	388	4.75	143	2,510	2,600	569	5,100	24,190	10/31/08	9	4th Qtr 2008:	15
12/3/08	5,202,957	19,695,273	146,987	256	4.25	7.27	4,300	2,570	1,600	50	32.5	9.48	1	12.3	281	3.35	112	530	4,030	437	4,340	18,525	12/03/08	6		
1/27/09	5,232,666	19,807,734	112,460	152	67.4	74.1	4,770	368	2,000	50	35.6	10.6	1.24	11.6	377	5.14	28.0	328	580	113	618	9,540	01/27/09	2	1st Qtr 2009:	35
2/27/09	5,287,549	20,015,488	207,754	5,390	186	287	8,470	4,030	2,890	50	3,220	14.7	6.36	24.1	416	6.35	383	5,310	2,880	1,270	9,720	44,504	02/27/09	20		
3/26/09	5,339,373	20,211,663	196,175	4,530	403	650	4,870	2,050	1,720	500	1,780	50	12.30	22.8	272	10	221	3,360	1,710	563	6,170	28,334	03/26/09	12		
4/28/09	5,396,687	20,428,619	216,956	1,060	148	170	2,050	1,270	1,130	50	956	11.5	2.61	11.4	136	10	195	1,810	1,460	336	4,190	14,937	04/28/09	7	2nd Qtr 2009:	21
5/28/09	5,424,958	20,535,636	107,017	2,500	328	566	6,730	3,960	2,210	2,500	826	250	50	50.0	379	50	500	1,660	3,150	508	6,430	26,747	05/28/09	6		
6/18/09	5,502,632	20,829,663	294,027	50	16.1	14.8	2,790	1,950	1,210	50	5	13.7	1	12.6	223	3.16	87.5	481	2,500	312	2,610	12,001	06/18/09	8		
7/28/09	5,515,613	20,878,801	49,138	500	40.7	57.1	2,440	137	1,030	500	50	50	10	10.0	167	10	100	127	1,880	17.2	128	6,024	07/28/09	1	3rd Qtr 2009:	15
8/25/09	5,544,203	20,987,026	108,225	1,280	421	698	7,460	5,240	2,110	50	978	16.6	4.97	15.1	406	4.41	205	1	2,510	423	3,870	25,642	08/25/09	6		
9/29/09	5,590,237	21,161,283	174,257	168	3.17	4.59	6,190	2,760	2,100	50	37.6	14.0	1	14.8	385	4.00	99.6	684	3,910	301	4,290	20,966	09/29/09	8		
10/30/09	5,629,127	21,308,497	147,214	500	10	10	8,410	4,690	3,050	500	110	50	10	20.8	542	10	166	905	6,030	674	5,670	30,268	10/30/09	10	4th Qtr 2009:	18
12/18/09	5,663,238	21,437,621	129,124	1,970	538	363	7,940	2,560	2,750	500	506	50	14.4	21.3	464	15.4	121	1,410	4,860	796	5,910	30,239	12/18/09	9		
1/29/10	5,681,847	21,508,064	70,443	1,400	880	980	3,900	2,100	1,400	500	1,200	250	50	50	220	50	500	1,100	1,700	480	5,600	20,960	01/29/10	3	1st Qtr 2010:	13
2/24/10	5,700,157	21,577,374	69,311	4,700	800	870	9,100	3,000	1,200	1,100	3,100	250	50	50	310	50	500	3,200	1,700	640	8,300	38,020	02/24/10	6		
3/30/10	5,717,507	21,643,051	65,677	8,300	50	50	3,900	1,900	1,100	2,000	1,800	250	50	50	220	50	500	2,100	1,400	470	6,200	29,390	03/30/10	4		
4/30/10	5,747,269	21,755,712	112,661	3,000	50	50	7,300	2,700	2,200	880	2,000	250	50	50	390	50	500	3,100	1,600	500	6,600	30,270	04/30/10	8	2nd Qtr 2010:	26
5/27/10	5,795,872	21,939,694	183,982	1,300	50	50	5,800	2,500	1,700	500	250	250	50	50	280	50	500	370	3,500	490	5,500	20,140	05/27/10	8		
6/24/10	5,851,891	22,151,748	212,054	3,300	260	500	4,400	1,600	1,700	820	880	250	50	50	280	50	500	2,900	1,200	460	4,700	23,000	06/24/10	11		
7/27/10	5,903,331	22,346,469	194,721	1,300	50	50	5,700	3,600	1,600	500	250	250	50	50	310	50	500	1,500	2,600	340	3,500	19,150	07/27/10	8	3rd Qtr 2010:	20
8/23/10	5,934,226	22,463,419	116,950	1,300	50	50	5,300	3,500	2,500	500	250	250	50	50	480	50	500	2,000	3,400	560	4,500	22,240	08/23/10	6		
9/27/10	5,962,239	22,569,460	106,040	1,300	50	50	6,600	7,100	2,800	500	250	250	50	50	470	50	500	1,300	4,600	270	1,700	24,840	09/27/10	6		
10/22/10	5,983,153	22,648,627	79,168	1,300	50	50	5,500	4,300	1,600	500	250	250	50	50	240	50	500	1,200	2,600	460	2,600	18,500	10/22/10	3	4th Qtr 2010:	12
11/30/10	6,026,936	22,814,364	165,736	1,300	110	150	4,600	2,800	1,800	500	250	250	50	50	330	50	500	1,100	3,300	530	4,400	19,120	11/30/10	7		
12/6/10	6,037,923	22,855,954	41,590	2,489	80	111	5,456	3,333	1,889	744	687	250	50	50	333	50	500	1,730	2,689	453	4,411	22,961	12/06/10	2		
1/25/11	6,050,878	22,904,994	49,040	2,100	220	280	9,000	2,600	3,200	840	1,800	250	50	50	530	50	500	260	940	270	6,300	28,340	01/25/11	3	1st Qtr 2011:	18
2/25/11	6,067,458	22,967,756	62,762	9,100	2,200	3,000	4,700	920	1,400	2,000	4,100	250	50	50	180	50	740	1,200	1,400	410	6,100	37,450	02/25/11	5		
3/30/11	6,109,076	23,125,296	157,541	1,400	50	50	5,400	1,700	2,000	3,000	2,100	250	50	50	320	50	500	2,800	1,600	500	7,200	28,520	03/30/11	10		
4/26/11	6,127,494	23,195,016	69,719	1,300	50	50	7,900	3,000	2,400	500	250	250	50	50	430	50	500	52.0	3,700	570	6,500	25,852	04/26/11	4	2nd Qtr 2011:	19
5/27/11	6,167,100	23,344,940	149,925	5,400	50	50	7,600	6,900	2,000	2,300	250	250	50	50	380	50	810	260	1,100	50	68.0	26,818	05/27/11	9		
6/28/11	6,202,864	23,480,321	135,381	1,300	67	140	5,000	2,300	2,400	500	340	250	50	50	370	50	500	2,400	2,200	580	5,200	20,997	06/28/11	6		
7/26/11	6,222,222	23,553,599	73,278	1,300	50	50	6,400	6,100	3,000	500	250	250	50	50	460	50	500	800	3,300	82.0	750	20,892	07/26/11	3	3rd Qtr 2011:	17
8/31/11	6,253,732	23,672,877	119,278	1,300	50	50	7,200	3,900	2,800	500	250	250	50	50	530	50	500	1,300	3,500	580	5,400	25,210	08/31/11	7		
9/26/11	6,276,056	23,757,382	84,505	12,000	830	1,400	4,300	1,900	2,000	570	2,700	250	50	50	330	50	2,600	1,400	1,900	460	4,600	36,990	09/26/11	7		
10/25/11	6,300,481	23,849,841	92,458	1,300	130	220	6,600	2,700	1,700	500	280	250	50	50	330	50	500	300	3,800	600	6,100	22,760	10/25/11	5	4th Qtr 2011:	14
11/30/11	6,342,753	24,009,857	160,016	1,300	50	50	4,400	2,500	1,800	500	250	250	50	50	320	50	500	200	2,700	550	4,900	17,370	11/30/11	6		
12/20/11	6,373,191	24,125,077	115,220	1,300	50	50	3,400	1,700	1,300	500	250	250	50	50	220	50	500	260	980	350	3,300	11,510	12/20/11	3		

Footnotes appear on last page.

Table 2-2. Groundwater Remediation System Mass Removal Calculations, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Date	Totalizer Reading (gallons)	Totalizer Reading (liters)	Monthly Flow (liters)	Acetone (ug/l)	PCE (ug/l)	TCE (ug/l)	Toluene (ug/l)	Vinyl chloride (ug/l)	Total Xylenes (ug/l)	MEK (ug/l)	Methylene chloride (ug/l)	Naphthalene (ug/l)	Chloroform (ug/l)	Benzene (ug/l)	Ethyl-benzene (ug/l)	Isopropyl-benzene (ug/l)	MIBK (ug/l)	1,1,1-TCA (ug/l)	1,1-DCA (ug/l)	1,1-DCE (ug/l)	cis-1,2-DCE (ug/l)	Total Target VOCs (ug/l)	Total Target VOCs (pounds)		Total Target VOCs per Quarter (pounds)	
1/26/12	6,384,592	24,168,235	43,157	6,700	2,700	3,900	4,200	1,300	1,600	1,900	3,300	250	50	50	300	50	670	920	820	380	5,800	34,490	1/26/12	3	1st Qtr 2012:	19
2/29/12	6,422,730	24,312,602	144,368	7,200	140	50	4,400	1,500	1,700	1,700	1,800	250	50	50	260	50	500	2,700	1,500	490	6,500	29,890	2/29/12	10		
3/29/12	6,460,112	24,454,108	141,506	2,800	61	120	4,200	1,400	1,300	740	1,300	250	50	50	200	50	500	2,200	970	410	5,200	20,901	3/29/12	7		
4/30/12	6,512,998	24,654,303	200,195	630	53	74	3,100	740	1,300	250	180	130	25	25	210	25	250	660	2,300	370	5,400	14,387	4/30/12	6	2nd Qtr 2012:	6
5/31/12	6,512,998	24,654,303	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5/31/12	0		
6/30/12	6,512,998	24,654,303	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6/30/12	0		
7/31/12	6,512,998	24,654,303	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7/31/12	0	3rd Qtr 2012:	10
8/31/12	6,551,195	24,798,894	144,591	1,500	260	330	4,600	1,600	1,900	500	820	250	50	50	360	50	500	460	920	300	3,700	16,750	8/31/12	5		
9/21/12	6,575,803	24,892,045	93,151	1,300	180	210	5,600	2,100	2,200	500	650	250	50	50	390	50	500	3,600	1,400	600	6,600	23,530	9/21/12	5		
10/31/12	6,610,402	25,023,016	130,971	1,300	73	210	6,200	2,700	2,200	500	250	250	50	50	410	50	500	2,300	2,600	630	6,600	24,173	10/31/12	7	4th Qtr 2012:	16
11/30/12	6,640,629	25,137,437	114,421	1,300	50	50	5,800	2,700	2,400	500	250	250	50	50	400	50	500	610	4,400	640	4,500	21,450	11/30/12	5		
12/31/12	6,663,832	25,225,270	87,833	1,300	50	50	5,400	2,300	2,000	500	250	250	50	50	370	50	500	260	2,800	460	4,200	17,790	12/31/12	3		
1/22/13	6,679,888	25,286,048	60,778	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	01/22/13	0	1st Qtr 2013:	10
2/28/13	6,697,239	25,351,729	65,680	3,700	500	500	8,500	2,700	3,600	1,000	1,900	500	100	100	690	100	1,000	3,800	1,600	790	8,600	36,880	02/28/13	5		
3/27/13	6,721,089	25,442,010	90,282	2,500	400	600	6,600	1,800	1,800	1,000	970	500	100	100	380	100	1,000	2,800	1,100	500	6,000	22,950	03/27/13	5		
4/29/13	6,755,602	25,572,656	130,646	1,500	35	120	690	68	260	210	180	50	10	10	38	10	110	310	130	34	1,300	4,985	04/29/13	1	2nd Qtr 2013:	3
5/28/13	6,786,890	25,691,093	118,438	250	24	10	560	210	240	100	180	50	10	10	38	10	100	260	200	70	1,900	3,692	05/28/13	1		
6/28/13	6,823,493	25,829,650	138,557	250	15	10	450	140	190	100	87	50	10	10	31	10	100	150	150	45	1,500	2,758	06/28/13	1		
7/30/13	6,869,085	26,002,232	172,582	250	54	130	69	79	28	100	170	50	10	10	10	10	100	300	190	54	1,600	2,674	07/30/13	1	3rd Qtr 2013:	6
8/29/13	6,931,973	26,240,291	238,058	370	15	45	670	300	240	100	150	50	10	10	10	10	100	580	160	110	1,300	3,940	08/29/13	2		
9/26/13	6,990,053	26,460,147	219,856	500	110	110	1,200	610	520	200	190	100	20	20	87	20	200	1,000	290	210	2,000	6,327	09/26/13	3		
10/24/13	7,033,883	26,626,061	165,914	500	20	20	1,100	460	510	200	150	100	20	20	84	20	200	600	280	170	3,000	6,354	10/24/13	2	4th Qtr 2013:	11
11/27/13	7,089,947	26,838,285	212,225	1,300	310	300	1,100	630	700	500	660	250	50	50	50	50	500	1,600	670	210	4,800	10,980	11/27/13	5		
12/26/13	7,130,308	26,991,068	152,783	1,300	50	170	170	1,200	1,100	500	390	250	50	50	200	50	500	1,600	930	280	4,400	10,440	12/26/13	4		
1/31/14	7,130,308	26,991,068	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	01/31/14	0	1st Qtr 2014:	7
2/27/14	7,160,802	27,106,500	115,432	2,400	560	570	2,200	780	960	590	250	250	50	50	170	50	500	300	540	160	2,800	12,280	02/27/14	3		
3/31/14	7,216,552	27,317,536	211,036	1,300	50	50	1,700	870	730	500	390	250	50	50	110	50	500	1,400	400	200	3,500	9,300	03/31/14	4		
4/24/14	7,257,149	27,471,212	153,676	1,300	300	420	3,100	1,300	1,400	500	500	250	50	50	270	50	500	2,300	570	260	3,800	14,220	04/24/14	5	2nd Qtr 2014:	10
5/27/14	7,336,911	27,773,141	301,929	52	99	130	260	120	400	10	75	5.0	2.0	3.0	62	1.1	11	220	67	180	490	2,172	05/27/14	1		
6/27/14	7,399,757	28,011,040	237,899	500	110	130	1,400	620	570	200	110	100	20	20	98	20	200	700	380	180	2,400	6,698	06/27/14	4		
7/30/14	7,420,635	28,090,072	79,032	1,300	330	480	3,600	1,600	1,700	500	730	250	50	50	330	50	500	1,400	560	350	3,900	14,980	07/30/14	3	3rd Qtr 2014:	6
8/29/14	7,485,380	28,335,157	245,086	960	25	43	760	45	340	250	240	130	25	25	53	25	250	260	180	25	1,400	4,281	08/29/14	2		
9/30/14	7,557,236	28,607,161	272,004	250	25	17	190	420	120	100	50	50	10	10	17	10	100	190	170	42	890	2,081	09/30/14	1		
10/29/14	7,611,419	28,812,265	205,104	140	130	350	380	73	160	100	65	50	10	10	25	10	100	300	130	48	1,500	3,301	10/29/14	1	4th Qtr 2014:	13
11/25/14	7,627,638	28,873,659	61,394	2,000	120	230	870	440	310	200	360	100	20	20	52	20	200	2,100	620	200	3,300	10,602	11/25/14	1		
12/31/14	7,656,969	28,984,690	111,031	5,100	26	120	7,000	1,600	3,100	1,600	1,300	100	20	22	590	20	320	8,100	1,700	740	8,800	40,118	12/31/14	10		
1/30/15	7,656,969	28,984,690	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	01/30/15	0	1st Qtr 2015:	1
2/10/15	7,660,764	28,999,056	14,366	3,300	3,600	5,800	1,200	580	290	1,100	1,200	500	100	100	100	100	1,000	100	310	170	5,700	23,250	02/10/15	1		
3/31/15	7,660,764	28,999,056	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	03/31/15	0		
4/30/15	7,681,005	29,075,676	76,620	52,000	100	100	1,700	1,200	690	3,900	500	500	100	100	100	100	1,000	270	260	100	3,500	63,520	04/30/15	11	2nd Qtr 2015:	26
5/26/15	7,733,249	29,273,441	197,764	250	100	100	1,900	1,000	890	1,000	500	500	100	100	160	100	1,000	1,500	460	210	3,300	9,420	05/26/15	4		
6/29/15	7,790,887	29,491,624	218,183	1,000	100	100	5,100	2,900	1,800	1,000	500	500	100	100	360	100	1,000	2,400	1,800	720	7,600	22,680	06/29/15	11		
7/28/15	7,806,466	29,550,596	58,973	3,500	100	100	3,700	6,800	1,300	1,000	500	500	100	100	230	100	1,000	110	3,200	100	100	19,240	07/28/15	2	3rd Qtr 2015:	13
8/28/15	7,865,241	29,773,083	222,487	1,000	100	100	2,600	880	1,100	1,000	500	500	100	100	210	100	1,000	1,100	1,000	260	3,600	10,750	08/28/15	5		
9/29/15	7,916,242	29,966,142	193,059	880	50	50	2,000	2,200	1,000	500	250	250	50	50	190	50	500	780	1,500	160	2,900	11,610	09/29/15	5		
10/27/15	7,945,046	30,075,177	109,035	500	50	50	2,400	3,300	1,100	500	250	250	50	50	190	50	500	650	2,200	190	2,400	12,430	10/27/15	3	4th Qtr 2015:	7
11/23/15	7,996,975	30,271,749	196,572	500	50	50	1,700	2,500	830	500	250	250	50	50	140	50	500	380	1,300	93	1,200	8,143	11/23/15	4		
12/21/15	8,008,027	30,313,585	41,836	500	50	50	1,400	1,900	530	500	250	250	50	50	81	50	500	500	1,300	160	3,100	8,971	12/21/15	1		
			Mass Removal (grams)	**103296.0**	**28904.8**	**35881.9**	**160396.8**	**71530.0**	**55980.7**	**22680.1**	**107847.3**	**2042.0**	**645.3**	**868.5**	**3171.5**	**415.1**	**11976.3**	**132778.5**	**73624.5**	**38808.3**	**260079.7**	**1,088,886**		**2401**		**2401**
			Mass Removal (pounds)	**227.7**	**63.7**	**79.1**	**353.6**	**157.7**	**123.4**	**50.0**	**237.8**	**4.5**	**1.4**	**1.9**	**7.0**	**0.9**	**26.4**	**292.7**	**162.3**	**85.6**	**573.4**	**2,401**				

Notes: No Influent Data. Concentrations are interpolated from existing data.
Data reported at method detection limit.
NA Not Analyzed

Table 3-1. Monitor Well and Recovery Well Construction Details, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Well No.	Installation Date	Total Depth (ft bls)	Well Diameter (inches)	Screened Interval (ft bls)	Measuring Point Elevation (ft msl)
MW-1	2/4/1988	18.0	2	8.0 - 13.0	406.98
MW-2	2/4/1988	23.0	2	13.0 - 18.0	375.69
MWW-4D	5/10/1991	28.0	2	22.0 - 27.0	393.11
MWW-15D	5/15/1991	24.2	2	13.0 - 24.0	390.88
MWW-33	5/7/1991	21.0	2	10.0 - 20.0	396.46*
MWW-34	5/6/1991	18.6	2	8.0 - 18.0	402.57
MWW-35	5/8/1991	8.5	2	3.5 - 9.0	Removed[A]
MWW-36	5/13/1991	10.0	2	3.0 - 9.0	Abandoned[B]
MWW-37	10/16/1991	51.2	2	40.0 - 50.0	388.71
MWW-38	10/22/1991	49.0	2	39.0 - 49.0	387.84
MWW-40	10/24/1991	39.3	4	19.0 - 40.0	392.52
MWW-43	2/10/1993	41.0	2	30.0 - 40.0	376.02
MWW-44	6/21/1994	25.0	2	15.0 - 25.0	Abandoned[C]
MWW-45	6/23/1994	14.0	2	4.0 - 14.0	391.85
MWW-46I	8/20/1996	41.0	2	21.0 - 41.0	401.06
MWW-47I	8/20/1996	35.0	2	15.0 - 35.0	390.53
MWW-48	8/20/1996	30.0	2	10.0 - 30.0	400.12
MWW-49D	9/19/1996	85.0	2	65.0 - 85.0	394.19
MWW-50D	9/17/1996	90.0	2	70.0 - 90.0	384.86
MWW-51D	9/19/1996	107.0	2	87.0 - 107.0	402.8**
MWW-52	4/8/1997	30.0	2	10.0 - 30.0	405.97
MWW-53	4/8/1997	30.0	2	10.0 - 30.0	395.27
MWW-54	7/14/1997	14.0	2	2.0 - 14.0	NA
MWW-55	7/14/1997	14.0	2	2.0 - 14.0	NA
MWW-57I	7/1/1999	40.0	2	20.0 - 40.0	NA
RW-1	7/14/1997	40.0	4	5.0 - 40.0	388.67
RW-2	3/14/2000	42	4	7.0 - 42.0	388.00
RW-3	3/16/2000	42	4	7.0 - 42.0	388.25
RW-4	3/16/2000	42	4	7.0 - 42.0	387.65
RW-5	3/14/2000	42	4	7.0 - 42.0	386.52
RW-6	3/18/2000	42	4	7.0 - 42.0	388.31
RW-7	4/1/2000	42	4	7.0 - 42.0	389.26
RW-8	3/18/2000	42	4	7.0 - 42.0	390.78
RW-9	3/15/2000	42	4	7.0 - 42.0	391.15
RW-10	3/15/2000	42	4	7.0 - 42.0	394.07

Notes:

ft bls	Feet below land surface.
ft msl	Feet above mean sea-level.
NA	Top of casing not surveyed.
*	Well casing was modified; new TOC elevation is 396.46 ft msl (previous elevation 396.88).
**	Well casing was modified ; new TOC elevation is 402.8 ft msl (previous elevation 403.1).
Removed[A]	MWW-35 was removed during the installation of new storm sewer line in November 2001.
Abandoned[B]	MWW-36 was abandoned on June 13, 2006 due to an obstruction in the well column
Abandoned[C]	MWW-44 was abandoned on February 12, 2002 due to installation of new storm sewer line.

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MW-1	4/16-17/2001	406.98	4.65	402.33
	9/17/2001	406.98	4.93	402.05
	12/17/2001	406.98	6.54	400.44
	3/18/2002	406.98	4.75	402.23
	6/17/2002	406.98	5.86	401.12
	9/10/2002	406.98	4.70	402.28
	12/16/2002	406.98	4.10	402.88
	3/10/2003	406.98	4.26	402.72
	6/3/2003	406.98	4.53	402.45
	9/22/2003	406.98	4.61	402.37
	12/15/2003	406.98	4.55	402.43
	3/15/2004	406.98	4.97	402.01
	9/22/2004	406.98	4.34	402.64
	3/28/2005	406.98	4.26	402.72
	8/30/2005	406.98	5.51	401.47
	3/31/2006	406.98	4.97	402.01
	9/19/2006	406.98	4.85	402.13
	3/13/2007	406.98	5.16	401.82
	9/25/2007	406.98	6.40	400.58
	3/31/2008	406.98	4.72	402.26
	3/23/2009	406.98	4.43	402.55
	4/15/2010	406.98	5.51	401.47
	5/7/2010	406.98	5.64	401.34
	6/27/2011	406.98	5.35	401.63
	3/21/2012	406.98	4.41	402.57
	10/7/2013	406.98	4.99	401.99
	8/19/2014	406.98	4.02	402.96
	12/1/2015	406.98	4.65	402.33
MW-2	4/16-17/2001	375.69	4.38	371.31
	9/17/2001	375.69	7.44	368.25
	12/17/2001	375.69	8.06	367.63
	3/18/2002	375.69	6.72	368.97
	6/17/2002	375.69	6.32	369.37
	9/10/2002	375.69	6.15	369.54
	12/16/2002	375.69	4.07	371.62
	3/10/2003	375.69	3.97	371.72
	6/3/2003	375.69	4.04	371.65
	9/22/2003	375.69	4.70	370.99
	12/15/2003	375.69	3.16	372.53
	3/15/2004	375.69	4.35	371.34
	9/22/2004	375.69	3.78	371.91
	3/28/2005	375.69	3.38	372.31
	8/30/2005	375.69	5.98	369.71
	3/31/2006	375.69	4.77	370.92
	9/19/2006	375.69	7.14	368.55
	3/13/2007	375.69	4.53	371.16
	9/25/2007	375.69	7.17	368.52
	3/31/2008	375.69	5.11	370.58

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MW-2	3/23/2009	375.69	4.34	371.35
	4/15/2010	375.69	5.02	370.67
	5/7/2010	375.69	5.38	370.31
	6/27/2011	375.69	6.23	369.46
	3/21/2012	375.69	4.31	371.38
	10/7/2013	375.69	5.40	370.29
	8/19/2014	375.69	4.54	371.15
	12/1/2015	375.69	4.31	371.38
MWW-4D	4/16-17/2001	393.11	7.36	385.75
	9/17/2001	393.11	17.00	376.11
	12/17/2001	393.11	24.33	368.78
	3/18/2002	393.11	22.07	371.04
	6/17/2002	393.11	DRY	DRY
	9/10/2002	393.11	DRY	DRY
	12/16/2002	393.11	DRY	DRY
	3/10/2003	393.11	DRY	DRY
	6/3/2003	393.11	23.88	369.23
	9/22/2003	393.11	17.77	375.34
	12/15/2003	393.11	24.22	368.89
	3/15/2004	393.11	23.87	369.24
	9/22/2004	393.11	21.10	372.01
	3/28/2005	393.11	18.64	374.47
	8/30/2005	393.11	22.50	370.61
	3/31/2006	393.11	23.60	369.51
	9/19/2006	393.11	22.55	370.56
	3/13/2007	393.11	21.01	372.10
	9/25/2007	393.11	25.19	367.92
	3/31/2008	393.11	23.46	369.65
	3/23/2009	393.11	13.30	379.81
	4/15/2010	393.11	10.36	382.75
	5/7/2010	393.11	16.44	376.67
	6/27/2011	393.11	22.80	370.31
	3/21/2012	393.11	25.76	367.35
	10/7/2013	393.11	20.25	372.86
	8/19/2014	393.11	19.68	373.43
	12/1/2015	393.11	NM	--
MWW-15D	4/16-17/2001	390.88	5.45	385.43
	9/17/2001	390.88	13.12	377.76
	12/17/2001	390.88	22.09	368.79
	3/18/2002	390.88	22.85	368.03
	6/17/2002	390.88	21.93	368.95
	9/10/2002	390.88	DRY	DRY
	12/16/2002	390.88	21.72	369.16
	3/10/2003	390.88	23.03	367.85
	6/3/2003	390.88	20.13	370.75
	9/22/2003	390.88	15.93	374.95
	12/15/2003	390.88	20.50	370.38
	3/15/2004	390.88	20.40	370.48

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MWW-15D	9/22/2004	390.88	16.45	374.43
	3/28/2005	390.88	14.80	376.08
	8/30/2005	390.88	19.68	371.20
	3/31/2006	390.88	17.92	372.96
	9/19/2006	390.88	15.24	375.64
	3/13/2007	390.88	10.73	380.15
	9/25/2007	390.88	18.46	372.42
	3/31/2008	390.88	16.76	374.12
	3/23/2009	390.88	11.42	379.46
	4/15/2010	390.88	9.51	381.37
	5/7/2010	390.88	13.26	377.62
	6/27/2011	390.88	15.44	375.44
	3/21/2012	390.88	16.89	373.99
	10/7/2013	390.88	16.87	374.01
	8/19/2014	390.88	14.60	376.28
	12/1/2015	390.88	10.22	380.66
MWW-33	4/16-17/2001	396.88	7.73	389.15
	9/17/2001	396.88	11.50	385.38
	12/17/2001	396.88	11.61	385.27
	3/18/2002	396.88	11.18	385.70
	6/17/2002	396.88	11.58	385.30
	9/10/2002	396.46[A]	7.89	388.57
	12/16/2002	396.46	7.45	389.01
	3/10/2003	396.46	6.66	389.80
	6/3/2003	396.46	9.83	386.63
	9/22/2003	396.46	10.51	385.95
	12/15/2003	396.46	10.43	386.03
	3/15/2004	396.46	10.50	385.96
	9/22/2004	396.46	11.50	384.96
	3/28/2005	396.46	10.58	385.88
	8/30/2005	396.46	11.53	384.93
	3/31/2006	396.46	11.90	384.56
	9/19/2006	396.46	12.02	384.44
	3/13/2007	396.46	11.15	385.31
	9/25/2007	396.46	12.79	383.67
	3/31/2008	396.46	12.83	383.63
	3/23/2009	396.46	12.44	384.02
	4/15/2010	396.46	11.82	384.64
	5/7/2010	396.46	12.25	384.21
	6/27/2011	396.46	12.32	384.14
	3/21/2012	396.46	12.04	384.42
	10/7/2013	396.46	11.69	384.77
	8/19/2014	396.46	10.91	385.55
	12/1/2015	396.46	10.45	386.01
MWW-34	4/16-17/2001	402.46	10.93	391.53
	9/17/2001	402.46	7.70	394.76
	12/17/2001	402.46	6.21	396.25
	3/18/2002	402.46	8.01	394.45

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MWW-34	6/17/2002	402.46	7.31	395.15
	9/10/2002	402.46	6.59	395.87
	12/16/2002	402.46	6.30	396.16
	3/10/2003	402.46	5.72	396.74
	6/3/2003	401.70	5.79	395.91
	9/22/2003	401.70	6.31	395.39
	12/15/2003	401.70	5.99	395.71
	3/15/2004	401.70	6.25	395.45
	9/22/2004	401.70	5.89	395.81
	3/28/2005	401.70	6.23	395.47
	8/30/2005	401.70	6.93	394.77
	3/31/2006	401.70	6.75	394.95
	9/19/2006	401.70	7.00	394.70
	3/13/2007	401.70	6.51	395.19
	9/25/2007	401.70	8.11	393.59
	3/31/2008	401.70	7.39	394.31
	3/23/2009	401.70	5.93	395.77
	4/15/2010	401.70	6.06	395.64
	5/7/2010	401.70	6.22	395.48
	6/27/2011	401.70	6.55	395.15
	3/21/2012	401.70	6.42	395.28
	10/7/2013	401.70	6.36	395.34
	8/19/2014	401.70	5.74	395.96
	12/1/2015	401.70	6.45	395.25
MWW-35	4/16-17/2001	387.88	4.10	383.78
	9/17/2001	387.88	9.95	383.78
	10/2001	Removed in November 2001 during installation of new storm sewer line		
MWW-36	4/16-17/2001	389.09	3.21	385.88
	9/17/2001	389.09	5.82	383.27
	12/17/2001	389.09	7.39	381.70
	3/19/2002	389.09	7.39	381.70
	6/17/2002	389.09	7.32	381.77
	9/10/2002	389.09	5.31	383.78
	12/16/2002	389.09	3.82	385.27
	3/10/2003	389.09	4.81	384.28
	6/3/2003	389.09	5.14	383.95
	9/22/2003	389.09	4.69	384.40
	12/15/2003	389.09	4.95	384.14
	3/15/2004	389.09	5.70	383.39
	9/22/2004	389.09	NG	NG
	3/28/2005	389.09	5.76	383.33
	8/30/2005	389.09	6.41	382.68
	3/2006	Obstruction in well/Well Abandoned in June 2006		
MWW-37	4/16-17/2001	388.71	5.76	382.95
	9/17/2001	388.71	10.16	378.55
	12/17/2001	388.71	15.48	373.23
	3/18/2002	388.71	17.38	371.33

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MWW-37	6/17/2002	388.71	23.07	365.64
	9/10/2002	388.71	24.25	364.46
	12/16/2002	388.71	16.97	371.74
	3/10/2003	388.71	28.19	360.52
	6/3/2003	388.71	24.08	364.63
	9/22/2003	388.71	10.65	378.06
	12/15/2003	388.71	31.30	357.41
	3/15/2004	388.71	25.00	363.71
	9/22/2004	388.71	18.47	370.24
	3/28/2005	388.71	16.16	372.55
	8/30/2005	388.71	27.60	361.11
	3/31/2006	388.71	25.65	363.06
	9/19/2006	388.71	21.48	367.23
	3/13/2007	388.71	8.11	380.60
	9/25/2007	388.71	18.64	370.07
	3/31/2008	388.71	25.72	362.99
	3/23/2009	388.71	11.17	377.54
	4/15/2010	388.71	7.56	381.15
	5/7/2010	388.71	22.06	366.65
	6/27/2011	388.71	13.20	375.51
	3/21/2012	388.71	22.90	365.81
	10/7/2013	388.71	24.06	364.65
	8/19/2014	388.71	24.60	364.11
	12/1/2015	388.71	9.70	379.01
MWW-38	4/16-17/2001	387.84	12.81	375.03
	9/17/2001	387.84	NG	NG
	12/17/2001	387.84	32.50	355.34
	3/18/2002	387.84	44.57	343.27
	6/17/2002	387.84	44.96	342.88
	9/10/2002	387.84	43.51	344.33
	12/16/2002	387.84	43.09	344.75
	3/10/2003	387.84	42.27	345.57
	6/3/2003	387.84	43.20	344.64
	9/22/2003	387.84	42.02	345.82
	12/15/2003	387.84	42.42	345.42
	3/15/2004	387.84	40.40	347.44
	9/22/2004	387.84	30.50	357.34
	3/28/2005	387.84	34.31	353.53
	8/30/2005	387.84	37.26	350.58
	3/21/2006	387.84	24.68	363.16
	9/19/2006	387.84	25.73	362.11
	3/13/2007	387.84	21.55	366.29
	9/25/2007	387.84	30.95	356.89
	3/31/2008	387.84	34.48	353.36
	3/23/2009	387.84	20.60	367.24
	4/15/2010	387.84	17.30	370.54
	5/7/2010	387.84	32.99	354.85
	6/27/2011	387.84	15.09	372.75

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MWW-38	3/21/2012	387.84	20.47	367.37
	10/7/2013	387.84	15.72	372.12
	8/19/2014	387.84	19.45	368.39
	12/1/2015	387.84	13.35	374.49
MWW-40	4/16-17/2001	392.52	7.19	385.33
	9/17/2001	392.52	16.12	376.40
	12/17/2001	392.52	22.12	370.40
	3/18/2002	392.52	25.34	367.18
	6/17/2002	392.52	24.66	367.86
	9/10/2002	392.52	28.64	363.88
	12/16/2002	392.52	24.84	367.68
	3/10/2003	392.52	26.50	366.02
	6/3/2003	392.52	24.30	368.22
	9/22/2003	392.52	16.30	376.22
	12/15/2003		No Access - well lid is covered by piping	
	6/27/2011	392.52	18.42	374.10
	3/21/2012	392.52	21.40	371.12
	10/7/2013	392.52	19.71	372.81
	8/19/2014	392.52	18.40	374.12
	12/1/2015	392.52	NM- Well lid is covered by piping	
MWW-43	4/16-17/2001	376.02	4.67	371.35
	9/17/2001	376.02	7.03	368.99
	12/17/2001	376.02	7.53	368.49
	3/18/2002	376.02	5.94	370.08
	6/17/2002	376.02	7.67	368.35
	9/10/2002	376.02	7.86	368.16
	12/16/2002	376.02	5.38	370.64
	3/10/2003	376.02	4.80	371.22
	6/3/2003	376.02	4.33	371.69
	9/22/2003	376.02	5.66	370.36
	12/15/2003	376.02	5.30	370.72
	3/15/2004	376.02	4.74	371.28
	9/22/2004	376.02	4.45	371.57
	3/28/2005	376.02	3.54	372.48
	8/30/2005	376.02	6.63	369.39
	3/31/2006	376.02	5.85	370.17
	9/19/2006	376.02	5.55	370.47
	3/19/2007	376.02	4.95	371.07
	9/25/2007	376.02	8.82	367.20
	3/31/2008	376.02	6.63	369.39
	3/23/2009	376.02	5.05	370.97
	4/15/2010	376.02	5.15	370.87
	5/7/2010	376.02	5.49	370.53
	6/27/2011	376.02	7.39	368.63
	3/21/2012	376.02	5.90	370.12
	10/7/2013	376.02	6.58	369.44
	8/19/2014	376.02	5.23	370.79
	12/1/2015	376.02	5.58	370.44

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MWW-44	4/16-17/2001	406.00	12.65	393.35
	9/17/2001	406.00	16.86	393.35
	12/17/2001	406.00	17.84	388.16
	2/12/2002	Abandoned on February 12, 2002, due to installation of new storm sewer line		
MWW-45	4/16-17/2001	391.85	2.45	389.40
	9/17/2001	391.85	7.54	384.31
	12/17/2001	391.85	7.89	383.96
	3/18/2002	391.85	6.59	385.26
	6/17/2002	391.85	6.56	385.29
	9/10/2002	391.85	5.58	386.27
	12/16/2003	391.85	4.62	387.23
	3/10/2003	391.85	4.93	386.92
	6/3/2003	391.85	4.45	387.40
	9/22/2003	391.85	6.09	385.76
	12/15/2003	391.85	6.71	385.14
	3/15/2004	391.85	7.20	384.65
	9/22/2004	391.85	6.34	385.51
	3/28/2005	391.85	7.08	384.77
	8/30/2005	391.85	7.67	384.18
	3/31/2006	391.85	7.83	384.02
	9/19/2006	391.85	7.66	384.19
	3/13/2007	391.85	4.92	386.93
	9/25/2007	391.85	8.52	383.33
	3/31/2008	391.85	8.03	383.82
	3/23/2009	391.85	7.03	384.82
	4/15/2010	391.85	4.90	386.95
	5/7/2010	391.85	6.72	385.13
	6/27/2011	391.85	7.09	384.76
	3/21/2012	391.85	6.71	385.14
	10/7/2013	391.85	5.49	386.36
	8/19/2014	391.85	5.37	386.48
	12/1/2015	391.85	4.97	386.88
MWW-46I	4/16-17/2001	401.06	22.75	378.31
	9/17/2001	401.06	23.79	377.27
	12/17/2001	401.06	26.84	374.22
	3/18/2002	401.06	27.12	373.94
	6/17/2002	401.06	27.88	373.18
	9/10/2002	401.06	28.08	372.98
	12/16/2002	401.06	25.17	375.89
	3/10/2003	401.06	22.87	378.19
	6/3/2003	401.06	20.56	380.50
	9/22/2003	401.06	21.52	379.54
	12/15/2003	401.06	28.53	372.53
	3/15/2004	401.06	21.95	379.11
	9/22/2004	401.06	20.54	380.52
	3/28/2005	401.06	19.81	381.25
	8/30/2005	401.06	22.69	378.37
	3/31/2006	401.06	24.30	376.76

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MWW-46I	9/19/2006	401.06	24.69	376.37
	3/13/2007	401.06	20.73	380.33
	9/25/2007	401.06	27.44	373.62
	3/31/2008	401.06	26.49	374.57
	3/23/2009	401.06	22.70	378.36
	4/15/2010	401.06	4.57	396.49
	5/7/2010	401.06	21.74	379.32
	6/27/2011	401.06	26.51	374.55
	3/21/2012	401.06	26.52	374.54
	10/7/2013	401.06	24.45	376.61
	8/19/2014	401.06	21.26	379.80
	12/1/2015	401.06	21.55	379.51
MWW-47I	4/16-17/2001	390.53	16.42	374.11
	9/17/2001	390.53	18.61	371.92
	12/17/2001	390.53	20.31	370.22
	3/18/2002	390.53	21.18	369.35
	6/17/2002	390.53	20.57	369.96
	9/10/2002	390.53	21.34	369.19
	12/16/2002	390.53	19.56	370.97
	3/10/2003	390.53	17.10	373.43
	6/3/2003	390.53	15.61	374.92
	9/22/2003	390.53	17.27	373.26
	12/15/2003	390.53	24.53	366.00
	3/15/2004	390.53	16.95	373.58
	9/22/2004	390.53	16.79	373.74
	3/28/2005	390.53	14.76	375.77
	8/30/2005	390.53	17.93	372.60
	3/31/2006	390.53	19.20	371.33
	9/19/2006	390.53	20.40	370.13
	3/13/2007	390.53	18.02	372.51
	9/25/2007	390.53	21.37	369.16
	3/31/2008	390.53	21.07	369.46
	3/23/2009	390.53	18.52	372.01
	4/15/2010	390.53	17.17	373.36
	5/7/2010	390.53	17.43	373.10
	6/27/2011	390.53	20.21	370.32
	3/21/2012	390.53	20.41	370.12
	10/7/2013	390.53	18.99	371.54
	8/19/2014	390.53	16.95	373.58
	12/1/2015	390.53	18.57	371.96
MWW-48	4/16-17/2001	400.12	7.25	392.87
	9/17/2001	400.12	12.65	387.47
	12/17/2001	400.12	13.78	386.34
	3/18/2002	400.12	9.59	390.53
	6/17/2002	400.12	13.45	386.67
	9/10/2002	400.12	15.30	384.82
	12/16/2002	400.12	10.07	390.05
	3/10/2003	400.12	3.19	396.93

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MWW-48	6/3/2003	400.12	6.57	393.55
	9/22/2003	400.12	11.31	388.81
	12/15/2003	400.12	11.20	388.92
	3/15/2004	400.12	8.83	391.29
	9/22/2004	400.12	10.49	389.63
	3/28/2005	400.12	8.28	391.84
	8/30/2005	400.12	14.25	385.87
	3/31/2006	400.12	10.00	390.12
	9/19/2006	400.12	15.08	385.04
	3/13/2007	400.12	7.96	392.16
	9/25/2007	400.12	16.31	383.81
	3/31/2008	400.12	13.79	386.33
	3/23/2009	400.12	10.30	389.82
	4/15/2010	400.12	7.29	392.83
	5/7/2010	400.12	9.18	390.94
	6/27/2011	400.12	14.14	385.98
	3/21/2012	400.12	11.53	388.59
	10/7/2013	400.12	14.66	385.46
	8/19/2014	400.12	9.79	390.33
	12/1/2015	400.12	9.92	390.20
MWW-49D	4/16-17/2001	394.19	21.45	372.74
	9/17/2001	394.19	23.79	370.40
	12/17/2001	394.19	28.41	365.78
	3/18/2002	394.19	24.76	369.43
	6/17/2002	394.19	25.50	368.69
	9/10/2002	394.19	26.07	368.12
	12/16/2002	394.19	24.05	370.14
	3/10/2003	394.19	22.39	371.80
	6/3/2003	394.19	21.30	372.89
	9/22/2003	394.19	22.42	371.77
	12/15/2003	394.19	23.50	370.69
	3/15/2004	394.19	22.55	371.64
	9/22/2004	394.19	21.99	372.20
	3/28/2005	394.19	20.73	373.46
	8/30/2005	394.19	23.38	370.81
	3/31/2006	394.19	24.05	370.14
	9/19/2006	394.19	24.96	369.23
	3/13/2007	394.19	22.66	371.53
	9/25/2007	394.19	26.22	367.97
	3/31/2008	394.19	25.17	369.02
	3/23/2009	394.19	23.10	371.09
	4/15/2010	394.19	22.12	372.07
	5/7/2010	394.19	22.60	371.59
	6/27/2011	394.19	25.06	369.13
	3/21/2012	394.19	24.73	369.46
	10/7/2013	394.19	24.04	370.15
	8/19/2014	394.19	22.05	372.14
	12/1/2015	394.19	22.89	371.30

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MWW-50D	4/16-17/2001	384.86	Artesian	384.86
	9/17/2001	384.86	Artesian	384.86
	12/17/2001	384.86	Artesian	384.86
	3/18/2002	384.86	Artesian	384.86
	6/17/2002	384.86	Artesian	384.86
	9/10/2002	384.86	Artesian	384.86
	12/16/2002	384.86	Artesian	384.86
	3/10/2003	384.86	Artesian	384.86
	6/3/2003	384.86	Artesian	384.86
	9/22/2003	384.86	Artesian	384.86
	12/15/2003	384.86	Artesian	384.86
	3/15/2004	384.86	Artesian	384.86
	9/22/2004	384.86	Artesian	384.86
	3/28/2005	384.86	Artesian	384.86
	8/30/2005	384.86	Artesian	384.86
	3/31/2006	384.86	Artesian	384.86
	9/19/2006	384.86	Artesian	384.86
	3/13/2007	384.86	Artesian	384.86
	9/25/2007	384.86	Artesian	384.86
	3/31/2008	384.86	Artesian	384.86
	3/23/2009	384.86	Artesian	384.86
	4/15/2010	384.86	Artesian	384.86
	5/7/2010	384.86	Artesian	384.86
	6/27/2011	384.86	Artesian	384.86
	3/21/2012	385.86	Artesian	385.86
	10/7/2013	385.86	Artesian	385.86
	8/19/2014	385.86	Artesian	385.86
	12/1/2015	385.86	Artesian	385.86
MWW-51D	4/16-17/2001	403.10	8.61	394.49
	9/17/2001	403.10	8.35	394.75
	12/17/2001	403.10	9.03	394.07
	3/18/2002	403.10	8.07	395.03
	6/17/2002	402.83[A]	7.01	395.82
	9/10/2002	402.83	6.25	396.58
	12/16/2002	402.83	6.35	396.48
	3/10/2003	402.83	5.53	397.30
	6/3/2003	402.83	7.03	395.80
	9/22/2003	402.83	7.42	395.41
	12/15/2003	402.83	5.90	396.93
	3/15/2004	402.83	6.75	396.08
	9/22/2004	402.83	5.99	396.84
	3/28/2005	402.83	6.51	396.32
	8/30/2005	402.83	6.92	395.91
	3/31/2006	402.83	6.90	395.93
	9/19/2006	402.83	6.60	396.23
	3/13/2007	402.83	6.21	396.62
	9/25/2007	402.83	7.65	395.18
	3/31/2008	402.83	6.76	396.07

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MWW-51D	3/23/2009	402.83	6.39	396.44
	4/15/2010	402.83	5.01	397.82
	5/7/2010	402.83	6.50	396.33
	6/27/2011	402.83	6.62	396.21
	3/21/2012	402.83	6.48	396.35
	10/7/2013	402.83	5.44	397.39
	8/19/2014	402.83	5.80	397.03
	12/1/2015	402.83	5.77	397.06
MWW-52	4/16-17/2001	405.97	5.94	400.03
	9/17/2001	405.97	6.30	399.67
	12/17/2001	405.97	7.33	398.64
	3/18/2002	405.97	6.24	399.73
	6/17/2002	405.97	9.10	396.87
	9/10/2002	405.97	6.53	399.44
	12/16/2002	405.97	5.96	400.01
	3/10/2003	405.97	6.06	399.91
	6/3/2003	405.97	6.19	399.78
	9/22/2003	405.97	6.40	399.57
	12/15/2003	405.97	6.79	399.18
	3/15/2004	405.97	6.91	399.06
	9/22/2004	405.97	5.90	400.07
	3/28/2005	405.97	6.05	399.92
	8/30/2005	405.97	6.76	399.21
	3/31/2006	405.97	8.31	397.66
	9/19/2006	405.97	6.79	399.18
	3/13/2007	405.97	6.33	399.64
	9/25/2007	405.97	7.39	398.58
	3/31/2008	405.97	6.65	399.32
	3/23/2009	405.97	5.86	400.11
	4/15/2010	405.97	5.03	400.94
	5/7/2010	405.97	6.09	399.88
	6/27/2011	405.97	5.52	400.45
	3/21/2012	405.97	4.84	401.13
	10/7/2013	405.97	4.80	401.17
	8/19/2014	405.97	5.29	400.68
	12/1/2015	405.97	5.22	400.75
MWW-53	4/16-17/2001	395.27	12.34	382.93
	9/17/2001	395.27	17.66	377.61
	12/17/2001	395.27	19.97	375.30
	3/18/2002	395.27	21.22	374.05
	6/17/2002	395.27	18.81	376.46
	9/10/2002	395.27	21.36	373.91
	12/16/2002	395.27	20.42	374.85
	3/10/2003	395.27	20.27	375.00
	6/3/2003	395.27	19.40	375.87
	9/22/2003	395.27	16.31	378.96
	12/15/2003	395.27	21.50	373.77
	3/15/2004	395.27	20.54	374.73

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MWW-53	9/22/2004	395.27	18.08	377.19
	3/28/2005	395.27	16.69	378.58
	8/30/2005	395.27	21.63	373.64
	3/31/2006	395.27	21.00	374.27
	9/19/2006	395.27	17.41	377.86
	3/13/2007	395.27	14.55	380.72
	9/25/2007	395.27	21.28	373.99
	3/31/2008	395.27	20.75	374.52
	3/23/2009	395.27	15.15	380.12
	4/15/2010	395.27	14.32	380.95
	5/7/2010	395.27	18.01	377.26
	6/27/2011	395.27	18.36	376.91
	3/21/2012	395.27	19.88	375.39
	10/7/2013	395.27	20.06	375.21
	8/19/2014	395.27	18.36	376.91
	12/1/2015	395.27	15.30	379.97
MWW-54	3/18/2002	NS	NG	NS
	6/17/2002	NS	NG	NS
	9/10/2002	NS	8.54	NS
	12/16/2002	NS	NG	NS
MWW-55	3/18/2002	NS	NG	NS
	6/17/2002	NS	NG	NS
	9/10/2002	NS	10.27	NS
	12/16/2002	NS	NG	NS
MWW-57I	4/16-17/2001	406.81	18.51	388.30
	9/17/2001	406.81	26.53	380.28
	12/17/2001	406.81	29.74	377.07
	3/18/2002	406.81	26.25	380.56
	6/17/2002	406.81	28.10	378.71
	9/10/2002	406.81	31.06	375.75
	12/16/2002	406.81	26.35	380.46
	3/10/2003	406.81	20.45	386.36
	6/3/2003	406.81	15.08	391.73
	9/22/2003	406.81	22.75	384.06
	12/15/2003	406.81	23.50	383.31
	3/15/2004	406.81	20.15	386.66
	9/22/2004	406.81	21.44	385.37
	3/28/2005	406.81	18.01	388.80
	8/30/2005	406.81	24.27	382.54
	3/31/2006	406.81	25.03	381.78
	9/19/2006	406.81	30.90	375.91
	3/13/2007	406.81	23.49	383.32
	9/25/2007	406.81	31.82	374.99
	3/31/2008	406.81	31.30	375.51
	3/23/2009	406.81	27.15	379.66
	4/15/2010	406.81	22.05	384.76
	5/7/2010	406.81	21.95	384.86
	6/27/2011	406.81	31.11	375.70

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
MWW-57I	3/21/2012	406.81	33.25	373.56
	10/7/2013	406.81	29.00	377.81
	8/19/2014	406.81	26.02	380.79
	12/1/2015	406.81	30.01	376.80
RW-1	4/16-17/2001	388.67	5.23	383.44
	12/17/2001	388.67	Approx. depth to top of pump = 35.0	353.7*
	3/18/2002	388.67	Approx. depth to top of pump = 35.0	353.7*
	6/17/2002	388.67	Approx. depth to top of pump = 35.0	353.7*
	9/10/2002	388.67	Approx. depth to top of pump = 35.0	353.7*
	12/16/2003	388.67	Approx. depth to top of pump = 35.0	353.7*
	3/10/2003	388.67	Approx. depth to top of pump = 35.0	353.7*
	6/3/2003	388.67	Approx. depth to top of pump = 35.0	353.7*
	9/22/2003	388.67	Approx. depth to top of pump = 35.0	353.7*
	12/15/2003	388.67	32.60	356.07
	3/15/2004	388.67	Approx. depth to top of pump = 35.0	353.7*
	9/22/2004	388.67	Approx. depth to top of pump = 35.0	353.7*
	3/28/2005	388.67	Approx. depth to top of pump = 35.0	353.7*
	8/30/2005	388.67	No Access, buried under drums	NG
	3/31/2006	388.67	Approx. depth to top of pump = 35.0	353.7*
	9/19/2006	388.67	Approx. depth to top of pump = 35.0	353.7*
	3/13/2007	388.67	Approx. depth to top of pump = 35.0	353.7*
	9/25/2007	388.67	Approx. depth to top of pump = 35.0	353.7*
	3/31/2008	388.67	Approx. depth to top of pump = 35.0	353.7*
	3/23/2009	388.67	Approx. depth to top of pump = 35.0	353.7*
	4/15/2010	388.67	7.50	381.17
	5/7/2010	388.67	Approx. depth to top of pump = 35.0	353.7*
	6/27/2011	388.67	No access	NG
	3/21/2012	388.67	Approx. depth to top of pump = 35.0	353.7*
	10/7/2013	388.67	Approx. depth to top of pump = 35.0	353.7*
	8/19/2014	388.67	Approx. depth to top of pump = 35.0	353.7*
	12/1/2015	388.67	Approx. depth to top of pump = 35.0	353.7*
RW-2	4/16-17/2001	388.00	5.00	383.00
	12/17/2001	0.00	Approx. depth to top of pump = 38.6	349.4*
	3/18/2002	388.00	Approx. depth to top of pump = 38.6	349.4*
	6/17/2002	388.00	Approx. depth to top of pump = 38.6	349.4*
	9/10/2002	388.00	Approx. depth to top of pump = 38.6	349.4*
	12/16/2003	388.00	Approx. depth to top of pump = 38.6	349.4*
	3/10/2003	388.00	Approx. depth to top of pump = 38.6	349.4*
	6/3/2003	388.00	Approx. depth to top of pump = 38.6	349.4*
	9/22/2003	388.00	9.77	378.23
	12/15/2003	388.00	35.15	352.85
	3/15/2004	388.00	37.19	350.81
	9/22/2004	388.00	Approx. depth to top of pump = 38.6	349.4*
	3/28/2005	388.00	Approx. depth to top of pump = 38.6	349.4*
	8/30/2005	388.00	Approx. depth to top of pump = 38.6	349.4*
	3/31/2006	388.00	Approx. depth to top of pump = 38.6	349.4*
	9/19/2006	388.00	Approx. depth to top of pump = 38.6	349.4*
	3/13/2007	388.00	Approx. depth to top of pump = 38.6	349.4*

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
RW-2	9/25/2007	388.00	Approx. depth to top of pump = 38.6	349.4*
	3/31/2008	388.00	34.45	353.55
	3/23/2009	388.00	9.07	378.93
	4/15/2010	388.00	7.20	380.80
	5/7/2010	388.00	Approx. depth to top of pump = 38.6	349.4*
	6/27/2011	388.00	12.50	375.50
	10/7/2013	388.00	Approx. depth to top of pump = 38.6	349.4*
	3/21/2012	388.00	Approx. depth to top of pump = 38.6	349.4*
	10/9/2013	388.00	Approx. depth to top of pump = 38.6	349.4*
	8/19/2014	388.00	Approx. depth to top of pump = 38.6	349.4*
	12/1/2015	388.00	30.01	357.99
RW-3	4/16-17/2001	388.25	4.87	383.38
	12/17/2001	388.25	Approx. depth to top of pump = 35.1	353.2*
	3/18/2002	388.25	Approx. depth to top of pump = 35.1	353.2*
	6/17/2002	388.25	Approx. depth to top of pump = 35.1	353.2*
	9/10/2002	388.25	Approx. depth to top of pump = 35.1	353.2*
	12/16/2003	388.25	Approx. depth to top of pump = 35.1	353.2*
	3/10/2003	388.25	Approx. depth to top of pump = 35.1	353.2*
	6/3/2003	388.25	Approx. depth to top of pump = 35.1	353.2*
	9/22/2003	388.25	Approx. depth to top of pump = 35.1	353.2*
	12/15/2003	388.25	Approx. depth to top of pump = 35.1	353.2*
	3/15/2004	388.25	Approx. depth to top of pump = 35.1	353.2*
	9/22/2004	388.25	Approx. depth to top of pump = 35.1	353.2*
	3/28/2005	388.25	Approx. depth to top of pump = 35.1	353.2*
	8/30/2005	388.25	No access, covered by piping	NG
	3/31/2006	388.25	No access, covered by piping	NG
	9/19/2006	388.25	No access, covered by piping	NG
	3/2007		No access/Deactivated in November 2006	
RW-4	4/16-17/2001	387.65	4.04	383.61
	12/17/2001	387.65	Approx. depth to top of pump = 35.3	352.4*
	3/18/2002	387.65	Approx. depth to top of pump = 35.3	352.4*
	6/17/2002	387.65	Approx. depth to top of pump = 35.3	352.4*
	9/10/2002	387.65	Approx. depth to top of pump = 35.3	352.4*
	12/16/2003	387.65	Approx. depth to top of pump = 35.3	352.4*
	3/10/2003	387.65	Approx. depth to top of pump = 35.3	352.4*
	6/3/2003	387.65	Approx. depth to top of pump = 35.3	352.4*
	9/22/2003	387.65	13.18	374.47
	12/15/2003	387.65	Approx. depth to top of pump = 35.3	352.4*
	3/15/2004	387.65	33.40	354.25
	9/22/2004	387.65	Approx. depth to top of pump = 35.3	352.4*
	3/28/2005	387.65	Approx. depth to top of pump = 35.3	352.4*
	8/30/2005	387.65	Approx. depth to top of pump = 35.3	352.4*
	3/31/2006	387.65	Approx. depth to top of pump = 35.3	352.4*
	9/19/2006	387.65	Approx. depth to top of pump = 35.3	352.4*
	3/13/2007	387.65	Approx. depth to top of pump = 35.3	352.4*
	9/25/2007	387.65	Approx. depth to top of pump = 35.3	352.4*
	3/31/2008	387.65	Approx. depth to top of pump = 35.3	352.4*
	3/23/2009	387.65	Approx. depth to top of pump = 35.3	352.4*

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
RW-4	4/15/2010	387.65	Approx. depth to top of pump = 35.3	352.4*
	5/7/2010	387.65	12.70	374.95
	6/27/2011	387.65	13.50	374.15
	3/21/2012	387.65	Approx. depth to top of pump = 35.3	352.4*
	10/9/2013	387.65	12.35	375.30
	8/19/2014	387.65	Approx. depth to top of pump = 35.3	352.4*
	12/1/2015	387.65	Approx. depth to top of pump = 35.3	352.4*
RW-5	4/16-17/2001	386.52	3.13	383.39
	12/17/2001	386.52	Approx. depth to top of pump = 35.8	350.7*
	3/18/2002	386.52	Approx. depth to top of pump = 35.8	350.7*
	6/17/2002	386.52	Approx. depth to top of pump = 35.8	350.7*
	9/10/2002	386.52	Approx. depth to top of pump = 35.8	350.7*
	12/16/2003	386.52	Approx. depth to top of pump = 35.8	350.7*
	3/10/2003	386.52	Approx. depth to top of pump = 35.8	350.7*
	6/3/2003	386.52	Approx. depth to top of pump = 35.8	350.7*
	9/22/2003	386.52	11.82	374.70
	12/15/2003	386.52	18.00	368.52
	3/15/2004	386.52	Approx. depth to top of pump = 35.8	350.7*
	9/22/2004	386.52	Approx. depth to top of pump = 35.8	350.7*
	3/28/2005	386.52	Approx. depth to top of pump = 35.8	350.7*
	8/30/2005	386.52	Approx. depth to top of pump = 35.8	350.7*
	3/31/2006	386.52	Approx. depth to top of pump = 35.8	350.7*
	9/19/2006	386.52	Approx. depth to top of pump = 35.8	350.7*
	3/13/2007	386.52	Approx. depth to top of pump = 35.8	350.7*
	9/25/2007	386.52	Approx. depth to top of pump = 35.8	350.7*
	3/31/2008	386.52	13.75	372.77
	3/23/2009	386.52	Approx. depth to top of pump = 35.8	350.7*
	4/15/2010	386.52	6.00	380.52
	5/7/2010	386.52	Approx. depth to top of pump = 35.8	350.7*
	6/27/2011	386.52	13.00	373.52
	3/21/2012	386.52	Approx. depth to top of pump = 35.8	350.7*
	10/9/2013	386.52	Approx. depth to top of pump = 35.8	350.7*
	8/19/2014	386.52	Approx. depth to top of pump = 35.8	350.7*
	12/1/2015	386.52	Approx. depth to top of pump = 35.8	350.7*
RW-6	4/16-17/2001	388.31	4.20	384.11
	12/17/2001	388.31	Approx. depth to top of pump = 36.5	351.8*
	3/18/2002	388.31	Approx. depth to top of pump = 36.5	351.8*
	6/17/2002	388.31	Approx. depth to top of pump = 36.5	351.8*
	9/10/2002	388.31	Approx. depth to top of pump = 36.5	351.8*
	12/16/2003	388.31	Approx. depth to top of pump = 36.5	351.8*
	3/10/2003	388.31	Approx. depth to top of pump = 36.5	351.8*
	6/3/2003	388.31	Approx. depth to top of pump = 36.5	351.8*
	9/22/2003	388.31	Approx. depth to top of pump = 36.5	351.8*
	12/15/2003	388.31	Approx. depth to top of pump = 36.5	351.8*
	3/15/2004	388.31	No Access	NG
	9/22/2004	388.31	20.85	367.46
	3/28/2005	388.31	Approx. depth to top of pump = 36.5	351.8*
	8/30/2005	388.31	Approx. depth to top of pump = 36.5	351.8*

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
RW-6	3/21/2006	388.31	Approx. depth to top of pump = 36.5	351.8*
	9/19/2006	388.31	Approx. depth to top of pump = 36.5	351.8*
	3/13/2007	388.31	Approx. depth to top of pump = 36.5	351.8*
	9/25/2007	388.31	Approx. depth to top of pump = 36.5	351.8*
	3/31/2008	388.31	Approx. depth to top of pump = 36.5	351.8*
	3/23/2009	388.31	Approx. depth to top of pump = 36.5	351.8*
	4/15/2010	388.31	7.72	380.59
	5/7/2010	388.31	Approx. depth to top of pump = 36.5	351.8*
	6/27/2011	388.31	20.50	367.81
	3/21/2012	388.31	Approx. depth to top of pump = 36.5	351.8*
	10/7/2013	388.31	11.50	376.81
	8/19/2014	388.31	Approx. depth to top of pump = 36.5	351.8*
	12/1/2015	388.31	Approx. depth to top of pump = 36.5	351.8*
RW-7	4/16-17/2001	389.26	5.09	384.17
	12/17/2001	389.26	Approx. depth to top of pump = 36.2	353.1*
	3/18/2002	389.26	Approx. depth to top of pump = 36.2	353.1*
	6/17/2002	389.26	Approx. depth to top of pump = 36.2	353.1*
	9/10/2002	389.26	Approx. depth to top of pump = 36.2	353.1*
	12/16/2003	389.26	Approx. depth to top of pump = 36.2	353.1*
	3/10/2003	389.26	Approx. depth to top of pump = 36.2	353.1*
	6/3/2003	389.26	23.75	365.51
	9/22/2003	389.26	32.33	356.93
	12/15/2003	389.26	Approx. depth to top of pump = 36.2	353.1*
	3/15/2004	389.26	Approx. depth to top of pump = 36.2	353.1*
	9/22/2004	389.26	Approx. depth to top of pump = 36.2	353.1*
	3/28/2005	389.26	6.85	382.41
	8/30/2005	389.26	Approx. depth to top of pump = 36.2	353.1*
	3/31/2006	389.26	Approx. depth to top of pump = 36.2	353.1*
	9/19/2006	389.26	Approx. depth to top of pump = 36.2	353.1*
	3/13/2007	389.26	Approx. depth to top of pump = 36.2	353.1*
	9/25/2007	389.26	Approx. depth to top of pump = 36.2	353.1*
	3/31/2008	389.26	Approx. depth to top of pump = 36.2	353.1*
	3/23/2009	389.26	Approx. depth to top of pump = 36.2	353.1*
	4/15/2010	389.26	NG	NG
	5/7/2010	389.26	Approx. depth to top of pump = 36.2	353.1*
	6/27/2011	389.26	26.00	363.26
	3/21/2012	389.26	Approx. depth to top of pump = 36.2	353.1*
	10/7/2013	389.26	7.00	382.26
	8/19/2014	389.26	Approx. depth to top of pump = 36.2	353.1*
	12/1/2015	389.26	Approx. depth to top of pump = 36.2	353.1*
RW-8	4/16-17/2001	390.78	3.49	387.29
	12/17/2001	390.78	No Access	NG
	3/18/2002	390.78	No Access	NG
	6/17/2002	390.78	14.05	376.73
	9/10/2002	390.78	No Access	NG
	12/16/2003	390.78	11.35	379.43
	3/10/2003	390.78	9.84	380.94
	6/3/2003	390.78	Approx. depth to top of pump = 38.1	352.7*

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
RW-8	9/22/2003	390.78	Approx. depth to top of pump = 38.1	352.7*
	12/15/2003	390.78	Approx. depth to top of pump = 38.1	352.7*
	3/15/2004	390.78	Approx. depth to top of pump = 38.1	352.7*
	9/22/2004	390.78	Approx. depth to top of pump = 38.1	352.7*
	3/28/2005	390.78	Approx. depth to top of pump = 38.1	352.7*
	8/30/2005	390.78	Approx. depth to top of pump = 38.1	352.7*
	3/31/2006	390.78	Approx. depth to top of pump = 38.1	352.7*
	9/19/2006	390.78	Approx. depth to top of pump = 38.1	352.7*
	3/13/2007	390.78	Approx. depth to top of pump = 38.1	352.7*
	9/25/2007	390.78	Approx. depth to top of pump = 38.1	352.7*
	3/31/2008	390.78	Approx. depth to top of pump = 38.1	352.7*
	3/23/2009	390.78	Approx. depth to top of pump = 38.1	352.7*
	4/15/2010	390.78	9.40	381.38
	5/7/2010	390.78	23.70	367.08
	6/27/2011	390.78	20.10	370.68
	3/21/2012	390.78	Approx. depth to top of pump = 38.1	352.7*
	10/7/2013	390.78	Approx. depth to top of pump = 38.1	352.7*
	8/19/2014	390.78	Approx. depth to top of pump = 38.1	352.7*
	12/15/2015	390.78	Approx. depth to top of pump = 38.1	352.7*
RW-9	4/16-17/2001	391.15	4.65	NP/386.50
	12/17/2001	391.15	Approx. depth to top of pump = 38.2	
	3/18/2002	391.15	Approx. depth to top of pump = 38.2	353.0*
	6/17/2002	391.15	Approx. depth to top of pump = 38.2	353.0*
	9/10/2002	391.15	Approx. depth to top of pump = 38.2	353.0*
	12/16/2003	391.15	Approx. depth to top of pump = 38.2	353.0*
	3/10/2003	391.15	Approx. depth to top of pump = 38.2	353.0*
	6/3/2003	391.15	Approx. depth to top of pump = 38.2	353.0*
	9/22/2003	391.15	Approx. depth to top of pump = 38.2	353.0*
	12/15/2003	391.15	18.12	373.03
	3/15/2004	391.15	Approx. depth to top of pump = 38.2	353.0*
	9/22/2004	391.15	Approx. depth to top of pump = 38.2	353.0*
	3/28/2005	391.15	Approx. depth to top of pump = 38.2	353.0*
	8/30/2005	391.15	Approx. depth to top of pump = 38.2	353.0*
	3/31/2006	391.15	Approx. depth to top of pump = 38.2	353.0*
	9/19/2006	391.15	Approx. depth to top of pump = 38.2	353.0*
	3/13/2007	391.15	Approx. depth to top of pump = 38.2	353.0*
	9/25/2007	391.15	Approx. depth to top of pump = 38.2	353.0*
	3/31/2008	391.15	Approx. depth to top of pump = 38.2	353.0*
	3/23/2009	391.15	Approx. depth to top of pump = 38.2	353.0*
	4/15/2010	391.15	13.90	377.25
	5/7/2010	391.15	Approx. depth to top of pump = 38.2	353.0*
	6/27/2011	391.15	Approx. depth to top of pump = 38.2	353.0*
	3/21/2012	391.15	Approx. depth to top of pump = 38.2	353.0*
	10/9/2013	391.15	Approx. depth to top of pump = 38.2	353.0*
	8/19/2014	391.15	Approx. depth to top of pump = 38.2	353.0*
	12/15/2015	391.15	Approx. depth to top of pump = 38.2	353.0*

Table 4-1. Historic Water-Level Elevations in Monitor Wells and Recovery Wells, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Gauged	Measuring Point Elevation (ft msl)	Depth to Water (feet below top of casing)	Water-Level Elevation (ft msl)
RW-10	4/16-17/2001	394.04	6.66	387.38
	12/17/2001	394.04	Approx. depth to top of pump = 38.6	355.4*
	3/18/2002	394.07	Approx. depth to top of pump = 38.6	355.4*
	6/17/2002	394.07	15.40	378.67
	9/10/2002	394.07	16.45	377.62
	12/16/2003	394.07	14.97	379.10
	3/10/2003	394.07	12.95	381.12
	6/3/2003	394.07	14.65	379.42
	9/22/2003	394.07	15.83	378.24
	12/15/2003	394.07	17.70	376.37
	3/15/2004	394.07	Approx. depth to top of pump = 38.6	355.4*
	9/22/2004	394.07	33.27	360.80
	3/28/2005	394.07	Approx. depth to top of pump = 38.6	355.4*
	8/30/2005	394.07	Approx. depth to top of pump = 38.6	355.4*
	3/31/2006	394.07	Approx. depth to top of pump = 38.6	355.4*
	9/19/2006	394.07	Approx. depth to top of pump = 38.6	355.4*
	3/13/2007	394.07	Approx. depth to top of pump = 38.6	355.4*
	9/25/2007	394.07	Approx. depth to top of pump = 38.6	355.4*
	3/31/2008	394.07	Approx. depth to top of pump = 38.6	355.4*
	12/15/2015	394.07	Approx. depth to top of pump = 38.6	355.4*
	3/23/2009	394.07	Approx. depth to top of pump = 38.6	355.4*
	4/15/2010	394.07	13.57	380.50
	5/7/2010	394.07	Approx. depth to top of pump = 38.6	355.4*
	6/27/2011	394.07	Approx. depth to top of pump = 38.6	355.4*
	3/21/2012	394.07	Approx. depth to top of pump = 38.6	355.4*
	10/7/2013	394.07	Approx. depth to top of pump = 38.6	355.4*
	8/19/2014	394.07	Approx. depth to top of pump = 38.6	355.4*
	12/15/2015	394.07	Approx. depth to top of pump = 38.6	355.4*

Notes:

ft msl	Feet above mean sea level
NS	Top of casing not surveyed
NG	Well could not be gauged
DRY	Well dry at time of gauging
A	Well casing was modified when manhole was replaced. Elevation of top of casing was resurveyed in June 2003.
*	Water level elevations are estimated based on depth to top of pumps. When activated, pneumatic pumps in recovery wells drawdown the water in well to an elevation at least below the top of the pump.

Table 4-2 Groundwater Sampling Data for Samples Collected from Monitor Wells in December 2015, Brenntag Mid-South Facility (Former Sou
Facility), Durham, North Carolina.

Well No.	Date Sampled	Well Volume (Gallons)	Purge Volume (Gallons)	Temperature (Degrees Celsius)	pH (Standard Units)	Specific Conductance (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)
MWW-15D	12/03/15	2.2	6.6	14.66	6.96	713	1.64	705	99.0
MWW-33	12/02/15	1.5	4.5	18.73	6.90	968	1.40	165	26.4
MWW-34	12/03/15	1.9	4 to dry	18.67	5.62	230	3.31	205	-4.30
MWW-37	12/02/15	6.5	19.3	18.77	6.96	739	1.57	11.8	55.8
MWW-38	12/02/15	5.7	17.1	16.96	7.80	550	1.81	484	30.5
MWW-43	12/02/15	5.5	9 to dry	15.20	7.09	600	3.45	13.0	12.5
MWW-45	12/03/15	1.4	4.3	20.27	6.19	1,162	1.53	48.1	59.1
MWW-46I	12/01/15	3.1	9.3	16.32	5.56	184	2.42	175	63.5
MWW-47I	12/01/15	2.6	7.9	16.07	6.57	633	2.24	55.7	40.2
MWW-48	12/01/15	3.2	9.6	18.07	5.05	219	1.19	198	169.7
MWW-49D	12/01/15	9.9	30.0	16.81	6.56	603	0.93	14.4	152.1
MWW-50D	12/02/15	14.4	45.0	17.72	7.48	647	1.22	8.15	-14.1
MWW-51D	12/03/15	16.2	20.0	13.86	9.84	402	1.35	36.3	-95.8
MWW-52	12/01/15	3.9	11.7	20.18	5.02	95	0.95	>1,000	69.0
MWW-53	12/02/15	2.4	7.1	19.84	7.04	592	3.02	408	4.60
MWW-57I	12/01/15	1.6	4.8	16.56	5.53	113	1.48	510	49.3

Notes:

NS	Not sampled due to access restriction.
µmhos/cm	Micromhos per centimeter.
mg/L	Milligrams per liter.
NTU	Nephelometric turbidity units.
mV	Millivolts.

Table 4-3. Groundwater Sampling Data for Samples Collected from Recovery Wells in December 2015, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Well No.	Date Sampled	Temperature (Degrees Celsius)	pH (Standard Units)	Specific Conductance (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)
RW-1	12/15/15	17.66	8.02	757	8.99	9.65	-96.1
RW-2	12/02/15	18.61	7.98	697	7.18	236	11.6
RW-4	12/15/15	15.25	7.18	223	9.32	22.8	-10.1
RW-5	12/15/15	NM	NM	NM	NM	39.9	NM
RW-7	12/15/15	NM	NM	NM	NM	58.6	NM
RW-8	12/15/15	NM	NM	NM	NM	5.43	NM
RW-9	12/15/15	17.26	7.41	1,082	3.90	18.3	-24.3
RW-10	12/15/15	NM	NM	NM	NM	9.60	NM

Notes:

µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter
NTU	Nephelometric turbidity units
ORP	Oxidation Reduction Potential
mV	Millivolts
NM	Not measured due to equipment malfunction

Table 4-4. Summary of Analytical Results for Groundwater Samples Collected from Monitor Wells and Recovery Wells for the December 2015 Sampling Event, Brenntag Mid-South Facility (Former Southchem Facility), Durham, No

Constituent	Monitor Well ID: Date Sampled:	MWW-15D 12/03/15	MWW-33 12/02/15	Dup-1* 12/02/15	MWW-34 12/03/15	MWW-37 12/02/15	MWW-38 12/02/15	MWW-43 12/03/15	MWW-45 12/03/15	MWW-46I 12/01/15	MWW-47I 12/01/15	MWW-48 12/01/15	MWW-49D 12/01/15	MWW-50D 12/02/15
Volatile Organics (µg/L) (USEPA Method 8260B)	Groundwater Quality Standard (µg/L)[1]													
1,1,1,2-Tetrachloroethane	1 [2]	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	200	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	0.2	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	0.6 [2]	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	6	**33**	<200	<200	<1.0	**19**	<1.0	<1.0	**10**	<1.0	<1.0	**6.0**	<1.0	<1.0
1,1-Dichloroethene	350	**59**	<200	<200	<1.0	**43**	<1.0	<1.0	<5.0	<1.0	<1.0	**6.0**	<1.0	<1.0
1,1-Dichloropropene	NE	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene	NE	<50	<1000	<1000	<5.0	<10	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,3-Trichloropropane	0.005	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene	70	<50	<1000	<1000	<5.0	<10	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,4-Trimethylbenzene	400	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromo-3-chloropropane	0.04	<50	<1000	<1000	<5.0	<10	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dibromoethane (EDB)	0.02	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	20	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	0.4	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	0.6	<10	<200	<200	<1.0	<2.0	**1.2**	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	400	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	200	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropane	NE	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	6	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane	NE	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	4,000	<100	<2000	<2000	<10	<20	<10	<10	<50	<10	<10	<10	<10	<10
2-Chlorotoluene	100	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Hexanone	40 [2]	<100	<2000	<2000	<10	<20	<10	<10	<50	<10	<10	<10	<10	<10
4-Chlorotoluene	24 [2]	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Methyl-2-pentonone (MIBK)	NE	<100	<2000	<2000	<10	<20	<10	<10	<50	<10	<10	<10	<10	<10
Acetone	6,000	<250	<5000	<5000	<25	<50	<25	<25	<50	<25	<25	<25	<25	<25
Benzene	1	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene	NE	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromochloromethane	NE	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	0.6	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	4	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	10 [2]	<50	<1000	<1000	<5.0	<10	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0
Carbon Disulfide	700	<20	<400	<400	<2.0	<4.0	<2.0	<2.0	<10	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	0.3	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	50	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0

Footnotes appear on last page

Table 4-4. Summary of Analytical Results for Groundwater Samples Collected from Monitor Wells and Recovery Wells for the December 2015 Sampling Event, Brenntag Mid-South Facility (Former Southchem Facility), Durham, No

Constituent	Monitor Well ID: Date Sampled:	MWW-15D 12/03/15	MWW-33 12/02/15	Dup-1* 12/02/15	MWW-34 12/03/15	MWW-37 12/02/15	MWW-38 12/02/15	MWW-43 12/03/15	MWW-45 12/03/15	MWW-46I 12/01/15	MWW-47I 12/01/15	MWW-48 12/01/15	MWW-49D 12/01/15	MWW-50D 12/02/15
Volatile Organics (µg/L) (USEPA Method 8260B)	Groundwater Quality Standard (µg/L)[1]													
Chloroethane	3,000	<50	<1000	<1000	<5.0	<10	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroform	70	<10	**260**	**270**	<1.0	**3.4**	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	3	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	70	**490**	**2,900**	**3,000**	<1.0	**150**	<1.0	<1.0	**600**	<1.0	<1.0	**11**	<1.0	<1.0
cis-1,3-Dichloropropene	0.4	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	0.4	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane	70 [2]	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane	1,000	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	600	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Hexachloro-1,3-butadiene	0.4	<50	<1000	<1000	<5.0	<10	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0
Isopropylbenzene (Cumene)	70	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl-tert-butyl ether	20	<100	<2000	<2000	<10	<20	<10	<10	<50	<10	<10	<10	<10	<10
Methylene Chloride	5	<50	<1000	<1000	<5.0	<10	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0
Naphthalene	6	<50	<1,000	<1,000	**19**	<10	<5.0	**6.5**	<25	<5.0	<5.0	<5.0	<5.0	<5.0 *
n-Butylbenzene	70	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
N-Propylbenzene	70	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
p-Isopropyltoluene	25 [2]	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
sec-Butylbenzene	70	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene	70	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene	70	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	0.7	**260**	**17,000**	**18,000**	**26**	**210**	<1.0	<1.0	<5.0	<1.0	<1.0	**38**	<1.0	<1.0
Toluene	600	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	100	**28**	<200	<200	<1.0	<2.0	<1.0	<1.0	**38**	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	0.4	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	3	**350**	**28,000**	**30,000**	**2.0**	**210**	<1.0	<1.0	**59**	<1.0	<1.0	**7.9**	<1.0	<1.0
Trichlorofluoromethane	2,000	<10	<200	<200	<1.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Acetate	88 [2]	<20	<400	<400	<2.0	<4.0	<2.0	<2.0	<10	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	0.03	**55**	**380**	**400**	<1.0	**6.0**	<1.0	<1.0	**39**	<1.0	<1.0	**1.8**	<1.0	<1.0
Xylenes (total)	500	<20	<400	<400	<2.0	<4.0	<2.0	<2.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0
TOTAL VOCs		**1,275**	**48,540**	**51,670**	**47.0**	**641**	**1.2**	**6.5**	**746**	ND	ND	**71**	ND	ND

Footnotes appear on last page

Table 4-4. Summary of Analytical Results for Groundwater Samples Collected from Monitor Wells and Recovery Wells for the December 2015 Sampling Event, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	Monitor Well ID: Date Sampled:	MWW-51D 12/03/15	MWW-52 12/01/15	MWW-53 12/02/15	MWW-57I 12/01/15	RW-1 12/15/15	RW-2 12/02/15	RW-4 12/15/15	RW-5 12/15/15	RW-6 12/15/15	RW-7 12/15/15	RW-8 12/15/15	RW-9 12/16/15	RW-10 12/15/15
Volatile Organics (µg/L) (USEPA Method 8260B)	Groundwater Quality Standard (µg/L)[1]													
1,1,1,2-Tetrachloroethane	1 [2]	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
1,1,1-Trichloroethane	200	<1.0	<1.0	<5.0	<1.0	**54**	<1.0	**110**	<5.0	<250	**20,000**	**200**	**460**	**49**
1,1,2,2-Tetrachloroethane	0.2	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
1,1,2-Trichloroethane	0.6 [2]	<1.0	<1.0	<5.0	<1.0	**5.9**	<1.0	**22**	<5.0	<250	<20	<50	**15**	<25
1,1-Dichloroethane	6	<1.0	<1.0	**24**	<1.0	**65**	**9.5**	**79**	**27**	<250	**5,800**	**520**	**760**	**230**
1,1-Dichloroethene	350	<1.0	<1.0	**100**	<1.0	**110**	**6.6**	**120**	<5.0	<250	**2,000**	**230**	**630**	**210**
1,1-Dichloropropene	NE	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
1,2,3-Trichlorobenzene	NE	<5.0	<5.0	<25	<5.0	<25	<5.0	<10	<25	<1300	<100	<250	<25	<130
1,2,3-Trichloropropane	0.005	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
1,2,4-Trichlorobenzene	70	<5.0	<5.0	<25	<5.0	<25	<5.0	<10	<25	<1300	<100 *	<250	<25	<130
1,2,4-Trimethylbenzene	400	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	**50**	<250	**340**	<50	<5.0	**58**
1,2-Dibromo-3-chloropropane	0.04	<5.0	<5.0	<25	<5.0	<25	<5.0	<10	<25	<1300	<100	<250	<25	<130
1,2-Dibromoethane (EDB)	0.02	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
1,2-Dichlorobenzene	20	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
1,2-Dichloroethane	0.4	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	**34**	<50	<5.0	<25
1,2-Dichloropropane	0.6	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	**43**	<50	**9.6**	<25
1,3,5-Trimethylbenzene	400	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	**16**	<250	**100**	<50	<5.0	<25
1,3-Dichlorobenzene	200	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
1,3-Dichloropropane	NE	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
1,4-Dichlorobenzene	6	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
2,2-Dichloropropane	NE	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
2-Butanone (MEK)	4,000	<10	<10	<50	<10	<50	<10	<20	<50	<250	**13,000**	<500	<50	<250
2-Chlorotoluene	100	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
2-Hexanone	40 [2]	<10	<10	<50	<10	<50	<10	<20	<50	<2500	<200	<500	<50	<250
4-Chlorotoluene	24 [2]	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
4-Methyl-2-pentonone (MIBK)	NE	<10	<10	<50	<10	<50	<10	<20	<50	<250	**3,300**	<500	<50	<250
Acetone	6,000	<25	<25	<50	<25	<50	<25	**30**	**160**	**44,000**	**64,000**	**1,600**	<50	<630
Benzene	1	**1.0**	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	**8.7**	<250	**68**	<50	**6.0**	<25
Bromobenzene	NE	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
Bromochloromethane	NE	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
Bromodichloromethane	0.6	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
Bromoform	4	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
Bromomethane	10 [2]	<5.0	<5.0	<25	<5.0	<25	<5.0	<10	<25	<1300	<100	<250	<25	<130
Carbon Disulfide	700	<2.0	<2.0	<10	<2.0	<10	<2.0	<4.0	<10	<500	<40	<100	<10	<50
Carbon Tetrachloride	0.3	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	**19**	<5.0	<250	<20	<50	<5.0	<25
Chlorobenzene	50	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25

Footnotes appear on last page

Table 4-4. Summary of Analytical Results for Groundwater Samples Collected from Monitor Wells and Recovery Wells for the December 2015 Sampling Event, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	Monitor Well ID: / Date Sampled:	MWW-51D 12/03/15	MWW-52 12/01/15	MWW-53 12/02/15	MWW-57I 12/01/15	RW-1 12/15/15	RW-2 12/02/15	RW-4 12/15/15	RW-5 12/15/15	RW-6 12/15/15	RW-7 12/15/15	RW-8 12/15/15	RW-9 12/16/15	RW-10 12/15/15
Volatile Organics (µg/L) (USEPA Method 8260B)	Groundwater Quality Standard (µg/L)[1]													
Chloroethane	3,000	<5.0	<5.0	<25	<5.0	<25	<5.0	<10	**260**	<1300	**2,000**	**550**	**360**	**1,300**
Chloroform	70	<1.0	<1.0	**21**	<1.0	<5.0	**1.6**	**4.2**	<5.0	<250	<20	<50	<5.0	<25
Chloromethane	3	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0 *	<25
cis-1,2-Dichloroethene	70	<1.0	<1.0	**190**	<1.0	**740**	**120**	**1,800**	**36**	<250	**21,000**	**10,000**	**2,900**	**4,600**
cis-1,3-Dichloropropene	0.4	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
Dibromochloromethane	0.4	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
Dibromomethane	70 [2]	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
Dichlorodifluoromethane	1,000	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
Ethylbenzene	600	<1.0	<1.0	<5.0	<1.0	**11**	<1.0	**2.3**	**280**	<250	**2,200**	**130**	**37**	**620**
Hexachloro-1,3-butadiene	0.4	<5.0	<5.0	<25	<5.0	<25	<5.0	<10	<25	<1300	<100	<250	<25	<130
Isopropylbenzene (Cumene)	70	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	**6.7**	<250	**28**	<50	<5.0	<25
Methyl-tert-butyl ether	20	<10	<10	<50	<10	<50	<10	<20	<50	<2500	<200	<500	<50	<250
Methylene Chloride	5	<5.0	<5.0	<25	<5.0	<25	<5.0	<10	<25	<1300	**8,500**	<250	**65**	**190**
Naphthalene	6	**90**	<5.0	<25	<5.0	<25	<5.0 *	<10	**36**	<1300	**230**	<250	<25	**200**
n-Butylbenzene	70	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
N-Propylbenzene	70	**1.2**	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	**5.5**	<250	**30**	<50	<5.0	<25
p-Isopropyltoluene	25 [2]	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
sec-Butylbenzene	70	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
Styrene	70	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
tert-Butylbenzene	70	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
Tetrachloroethene	0.7	<1.0	<1.0	**450**	<1.0	**270**	**59**	**1,200**	<5.0	<250	**630**	<50	**650**	**130**
Toluene	600	<1.0	<1.0	<5.0	<1.0	**8.7**	<1.0	<2.0	**1,900**	<250	**22,000**	**880**	**190**	**8,200**
trans-1,2-Dichloroethene	100	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	**4.6**	**7.5**	<250	<20	<50	**10**	<25
trans-1,3-Dichloropropene	0.4	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
Trichloroethene	3	<1.0	<1.0	**380**	<1.0	**160**	**110**	**520**	<5.0	<250	**520**	**72**	**200**	**220**
Trichlorofluoromethane	2,000	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<2.0	<5.0	<250	<20	<50	<5.0	<25
Vinyl Acetate	88 [2]	<2.0	<2.0	<10	<2.0	<10	<2.0	<4.0	<10	<500	<40	<100	<10	<50
Vinyl Chloride	0.03	<1.0	<1.0	<5.0	<1.0	**100**	<1.0	**120**	**38**	<250	**2,400**	**4,500**	**720**	**3,200**
Xylenes (total)	500	**2.6**	<2.0	<5.0	<2.0	**17**	<2.0	<4.0	**1,300**	<250	**11,000**	**570**	**160**	**2,900**
TOTAL VOCs		**94.8**	ND	**1,165**	ND	**1,542**	**307**	**4,031**	**4,131**	**44,000**	**179,223**	**19,252**	**7,173**	**22,107**

Footnotes:

1	15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013.
2	15A NCAC 2L groundwater standard is an interim concentration, effective April 1, 2013.
µg/L	Micrograms per liter.
<	Compound was not detected above the reporting limit.
380	Sample result exceeds the NCAC 2L Groundwater Standard.
Dup-1*	Duplicate sample collected from MWW-33.
NE	Groundwater standard not established.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-4D, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-4D 04/18/01	MWW-4D 09/18/01	MWW-4D 12/20/01	MWW-4D 03/18/02	MWW-4D 06/05/03	MWW-4D 09/24/03	MWW-4D 12/16/03	MWW-4D 03/17/04	MWW-4D 03/29/05	MWW-4D 03/23/06	MWW-4D 03/14/07	MWW-4D 03/27/08	MWW-4D 03/24/09	MWW-4D 04/16/10	MWW-4D 06/29/11	MWW-4D 03/22/12	MWW-4D 10/09/13	MWW-4D 08/26/14	MWW-4D 12/01/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																				
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00	<1.00	<5.8	<5.0	<10	<25	<25	<25	NS
1,1,1-Trichloroethane	200	760	2,910	1,410	748	660	332	293	780	500	131	304	374	210	27	95	180	170	53	NS
1,1,2,2-Tetrachloroethane	0.20	<2.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.2	<5.0	<10	<25	<25	<25	NS
1,1,2-Trichloroethane	0.6	<2.0	3.2	<10	1.2	<1.0	< 1.00	<1.00	<1.00	1.6	<1.00	<1.00	<1.00	<10	<5.0	<10	<25	<25	<25	NS
1,1-Dichloroethane	6	10,300	3,350	1,220	1,220	1,370	478	473	1,260	735	131	398	757	210	120	73	170	140	140	NS
1,1-Dichloroethene	350	8,500	6,090	2,280	1,230	1,230	387	36.3	1,200	1,000	125	611	994	110	16	110	180	170	210	NS
1,2,4-Trimethylbenzene	400	99.4	8.0	<10	<1.0	10.1	8.1	<1.00	6.8	5.3	15.8	4.04	9.73	31	30	<10	<25	<25	<25	NS
1,2-Dichlorobenzene	20	<2.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<6.0	<5.0	<10	<25	<25	<25	NS
1,2-Dichloroethane	0.4	38.6	32.4	14	15.1	8.1	3.9	7.5	7.9	8.4	<1.00	2.82	4.65	<6.2	<5.0	<10	<25	<25	<25	NS
1,2-Dichloropropane	0.6	48.9	<1.0	14	13.6	10.7	< 1.00	8.8	12	10.9	<1.00	<1.00	<1.00	<7.2	<5.0	<10	<25	<25	<25	NS
1,3,5-Trimethylbenzene	400	42.9	4.2	<10	<1.0	4.3	2.6	<1.00	3.2	2.6	7.11	3.64	3.17	12	9.8	<10	<25	<25	<25	NS
2-Butanone (MEK)	4,000	<5,000	<25.0	<250	<50	<25	< 25.0	<25.0	<1.00	262	109	<50	<50	<12	<50	<100	<250	<250	<250	NS
2-Chlorotoluene	100	<2.0	7.0	<10	1.8	6.5	< 1.00	<1.00	<1.00	11.3	1.8	7.87	18.4	<6.4	<5.0	<10	<25	<25	<25	NS
4-Isopropyltoluene	25	<2.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	2.45	<1.00	<1.00	<6.4	<5.0	<10	<25	NA	NA	NS
4-Methyl-2-pentanone	100	185	37	<100	22.2	<5.0	< 5.00	< 5.00	<5.00	<5.00	<50	<10.0	<10.0	<12	<50	<100	<250	<250	<250	NS
Acetone	6,000	<50	245	<250	475	211	< 25	169	<25	<25	114	<50	<50	970	<130	<250	<630	<630	<630	NS
Benzene	1	60.9	38.5	12.0	11.0	10.6	3.8	6.0	11.4	10.8	2.5	4.66	10.1	6.4	<5.0	<10	<25	<25	<25	NS
Bromochloromethane	NE	<2.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<6.6	<5.0	<10	<25	<25	<25	NS
Bromodichloromethane	0.6	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<6.8	<5.0	<10	<25	<25	<25	NS
Carbon disulfide	700	<2.0	5.1	<10	1.3	<1.0	< 1.00	3.0	<1.00	<1.00	<1.00	<1.00	<1.00	<12	<10	<20	<50	<50	<50	NS
Carbon tetrachloride	0.3	<2.0	2.3	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	60	<5.4	<5.0	<10	<25	<25	<25	NS
Chlorobenzene	50	<2.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<6.8	<5.0	<10	<25	<25	<25	NS
Chloroethane	3,000	<2.0	72.9	<10	11.4	<1.0	20.9	17.2	20.1	21.1	19.8	8.82	239	29	78	<10	220	<130	<130	NS
Chloroform	70	10	168	29	52.5	18.3	9.7	16.1	17.6	21.4	10.4	5.58	3.56	7.5	<5.0	<10	<25	<25	<25	NS
Chloromethane	3	<2.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.6	<5.0	<10	<25	<25	<25	NS
cis-1,2-Dichloroethene	70	25,300	16,700	8,830	9,020	9,900	5,520	3,570	9360	5,850	1,090	6,070	8,590	2,000	910	1,400	2,600	1,600	2,100	NS
Dichlorodifluoromethane	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.00	2.33	<6.6	<5.0	<10	<25	<25	<25	NS
Ethylbenzene	600	<2.0	61.2	<10	15.9	39.7	24.5	10	39	21.2	51.5	13.9	78.1	180	180	<10	<25	<25	<25	NS
Isopropylbenzene	70	19.7	8.2	<10	<1.0	3.9	2.6	3.6	3.0	2.7	5.2	3.58	6.86	5.9	5.4	<10	<25	<25	<25	NS
Methylene chloride	5	500	930	228	215	58.2	19.9	13.4	17.7	13.2	6.61	<5.0	5.12	<20	<25	<50	<130	<130	<130	NS
Naphthalene	6	74.5	14.2	<25	<2.5	13.1	11.4	<5.00	8.0	9.8	30.6	6.7	10.4	17	<25	<50	<130	<130	<130	NS
n-Butylbenzene	70	<1.0	<1.0	<10	<1.0	1.2	< 1.00	<1.00	<1.00	<1.00	4.78	<1.00	1.35	<6.6	<5.0	<10	<25	<25	<25	NS
n-Propylbenzene	70	11.9	1.6	<10	<1.0	1.6	1.9	<1.00	1.1	<1.00	3.8	<1.00	<1.00	<6.8	<5.0	<10	<25	<25	<25	NS
sec-Butylbenzene	70	3.2	<1.0	<10	<1.0	1.2	< 1.00	<1.00	<1.00	<1.00	3.75	<1.00	1.47	<5.8	<5.0	<10	<25	<25	<25	NS
Styrene	70	<2.0	<1.0	<10	<1.0	5.9	< 1.00	<1.00	<1.00	<1.00	4.8	<1.00	<1.00	<7.2	<5.0	<10	<25	<25	<25	NS
tert-Butylbenzene	70	<1.0	<1.0	<1.0	<1.0	1.3	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<6.0	<5.0	<10	<25	<25	<25	NS
Tetrachloroethene	0.7	36.9	3,770	1,850	894	<1.0	51.8	352	191	960	92	956	1,130	34	<5.0	680	960	420	1,800	NS
Toluene	600	7,190	870	18	237	292	63.1	81.2	598	43.5	171	24.6	422	940	820	<10	<25	<25	<25	NS
trans-1,2-Dichloroethene	100	102	59.9	17	18.1	<1.0	< 1.00	17.2	41	21.7	13	15.8	17.1	13	7	<10	<25	<25	<25	NS
Trichloroethene	3	674	6,260	1,720	1,180	89.7	42.8	312	174	1,380	182	922	458	18	<5.0	530	520	260	630	NS
Trichlorofluoromethane	2,100	<2.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.8	<5.0	<10	<25	<25	<25	NS
Vinyl chloride	0.03	9,700	5,100	1,030	584	1,920	1,700	190	2,040	1,850	812	1,160	1,760	1,100	900	130	380	320	290	NS
Xylenes (total)	500	3,200	1,080	41	108	303	158	69.3	285	168	316	75.1	348	810	680	<20	<50	<50	<50	NS
Total VOCs		60,378	47,829	18,713	16,075	16,170	8,842	5,649	16,077	12,914	3,441	10,598	15,304	6,704	3,783	3,018	5,210	3,080	5,223	NS

Notes

1	15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.
ug/L	Micrograms per liter.
<	Constituent was not detected above the laboratory reporting limit.
D	Constituent concentration was quantitated using a secondary dilution.
NE	Groundwater standard not established.
3,200	Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.
J	Constituent concentration detected is between the method detection limit and reporting limit and is qualified as estimated.
NS	Not sampled due to access restrictions.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-15D, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-15D 04/18/01	MWW-15D 09/18/01	MWW-15D 12/20/01	MWW-15D 03/18/02	MWW-15D 06/18/02	MWW-15D 12/16/02	MWW-15D 03/11/03	MWW-15D 06/04/03	MWW-15D 09/23/03	MWW-15D 12/16/03	MWW-15D 03/16/04	MWW-15D 03/29/05	MWW-15D 03/22/06	MWW-15D 03/14/07	MWW-15D 03/26/08	MWW-15D 03/24/09	MWW-15D 04/15/10	MWW-15D 06/28/11	MWW-15D 03/22/12	MWW-15D 10/09/13	MWW-15D 08/21/14	MWW-15D 12/03/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																							
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.9	<5.0	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	200	1,420	750	455	306	508	322	389	200	150	76.7	172	63	87.4	48.9	48.2	24	16	<10	<10	<10	<10	<10
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.6	<5.0	<10	<10	<10	<10	<10
1,1,2-Trichloroethane	0.6	<2.0	2.2	1.4	<1.0	1.3	2.3	2.6	1.4	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1.10	<5.1	<5.0	<10	<10	<10	<10	<10
1,1-Dichloroethane	6	2,090	1,040	795	578	1,070	984	1,140	607	386	500	542	261	328	325	230	260	90	70	61	42	60	33
1,1-Dichloroethene	350	5,190	3,370	2,450	1,870	3,830	2,040	2,690	1,610	1,000	1,370	1,380	545	679	785	570	300	170	140	120	81	100	59
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.7	<5.0	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<3.0	<5.0	<10	<10	<10	<10	<10
1,2-Dichloroethane	0.4	23.1	16.4	12.4	9.9	11.4	15.1	15.4	8.3	6.7	7.1	5.8	3.9	<1.00	4.11	2.71	<3.1	<5.0	<10	<10	<10	<10	<10
1,2-Dichloropropane	0.6	<2.0	<1.0	12.8	9.1	13.8	12.1	12.8	6.8	< 1.00	5.9	<1.00	<1.00	<1.00	<1.00	<1.00	<3.6	<5.0	<10	<10	<10	<10	<10
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.8	<5.0	<10	<10	<10	<10	<10
2-Butanone (MEK)	4,000	94	<25	<25	<50	<50	<25	<25	<25	< 25.0	<25.0	<25.0	<25.0	<50.0	<50.0	<50.0	<6.0	<50	<100	<100	<100	<100	<100
2-Chlorotoluene	100	27	6.2	5.9	1.3	<1.0	2.2	3.4	7.0	< 1.00	4.8	<1.00	11	21.5	22.5	26.0	8.3	<5.0	<10	<10	<10	<10	<10
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<3.2	<5.0	<10	<10	NA	<10	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	< 5.00	< 5.00	<5.00	<5.00	<50.0	<10.0	<10.0	<6.0	<50	<100	<100	<100	<100	<100
Acetone	6,000	<50	<25	237	<50	<50	<25	<25	<25	< 25.0	<50.0	<25.0	<25.0	<50.0	<50.0	<50.0	<50	<130	<250	<250	<250	<250	<250
Benzene	1	16.3	12.9	12.1	10.5	12.0	10.4	10.8	6.3	4.4	4.5	5.2	3.3	3.86	3.65	2.99	<3.2	<5.0	<10	<10	<10	<10	<10
Bromochloromethane	NE	<2.0	<1.0	2.9	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<3.3	<5.0	<10	<10	<10	<10	<10
Bromodichloromethane	0.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<3.4	<5.0	<10	<10	<10	<10	<10
Bromomethane	NE	<2.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<3.3	<5.0	<10	<10	<50	<10	<30
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<3.0	<10	<20	<20	<20	<20	<20
Carbon tetrachloride	0.3	53.2	51.3	15	20.2	27.4	17.7	11.9	7.4	4.9	<1.00	7.3	<1.00	<1.00	<1.00	<1.00	<6.0	<5.0	<10	<10	<10	<10	<10
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.7	<5.0	<10	<10	<10	<10	<10
Chloroethane	3,000	<2.0	86.1	68.2	35.7	25.0	42.6	<1.0	20.9	16.6	13.5	12.5	7.8	<1.00	5.12	2.71	<3.4	<5.0	<10	<10	<50	<10	<30
Chloroform	70	460	181	165	101	148	193	237	115	82.7	82.8	91.5	40	54.1	47.1	34.0	21	14	13	<10	<10	<10	<10
Chloromethane	3	<2.0	<1.0	<1.0	<1.0	2.4	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	4.17	<2.8	<5.0	<10	<10	<10	<10	<10
cis-1,2-Dichloroethene	70	11,000	6,600	5,050	4,410	5,760	6,120	6,610	4,620	3,120	4,800	3,610	2,300	4,500	4,310	2,600	2,500	1,300	900	1,000	700	860	490
Dibromochloromethane	0.4	<2.0	<1.0	<1.0	<1.0	2.7	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<3.3	<5.0	<10	<10	<10	<10	<10
Dichlorodifluoromethane	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.00	1.31	<3.3	<5.0	<10	<10	<10	<10	<10
Ethylbenzene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	5.5	<5.0	<10	<10	<10	<10	<10
Isopropylbenzene	70	13.8	5	5.4	<1.0	1.0	<1.0	1.0	3.4	2.3	4.7	<1.00	2.3	4.8	3.27	3.96	<2.7	<5.0	<10	<10	<50	<50	<50
Methylene chloride	5	1,090	640	340	89.2	115	308	343	166	85.2	24.3	26.6	10.7	<5.00	<5.00	<5.00	<10	<50	<50	<50	<50	<50	<50
Naphthalene	6	10.9	5.6	6.4	<2.5	<5.0	<2.5	<5.0	<5.0	< 5.00	<5.00	<5.00	5.5	<5.00	<5.00	<5.00	<2.7	<50	<50	<50	<10	<10	<10
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<3.3	<5.0	<10	<10	<10	<10	<10
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<3.4	<5.0	<10	<10	<10	<10	<10
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.9	<5.0	<10	<10	<10	<10	<10
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	1.62	<1.00	<1.00	<3.6	<5.0	<10	<10	<10	<10	<10
Tetrachloroethene	0.7	6,140	3,310	720	2,260	4,170	3,820	4,090	2,380	2,640	1,410	3,620	1,050	2,010	2,610	2,280	650	660	630	750	310	430	260
Toluene	600	4.1	<1.0	1.8	<1.0	1.6	3.6	1.9	1.6	<1.00	<1.00	<1.00	1.8	2.46	1.39	<1.00	110	<5.0	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	100	<2.0	32.2	52.6	18.1	34.7	41.3	32.7	<1.0	58.7	15.5	26.8	14	66.8	47.2	32.6	25	19	22	29	25	32	28
Trichloroethene	3	8,230	4,500	5,150	2,840	5,110	5,560	6,570	4,120	3,040	3,460	3,590	1,670	2,680	3,340	2,680	1,200	990	820	860	540	580	350
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.9	<5.0	<10	<10	<10	<10	<10
Vinyl chloride	0.03	3,130	2,510	1,470	775	908	692	1,540	848	686	967	187	444	536	669	615	410	150	100	130	81	74	55
Xylenes (total)	500	330	142	107	26.1	7.8	6.4	38.2	32.8	16.6	26.5	4.4	17	14.7	11.2	6.88	37	<10	<20	<20	<20	<20	<20
Total VOCs		39,322	23,261	17,135	13,360	21,762	20,193	23,743	14,762	11,300	12,773	13,281	6,451	10,990	12,233	9,142	5,551	3,409	2,695	2,950	1,779	2,136	1,275

Notes

1	15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.
ug/L	Micrograms per liter.
<	Constituent was not detected above the laboratory reporting limit.
D	Constituent concentration was quantitated using a secondary dilution.
NE	Groundwater standard not established.
6,140	Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.
J	Constituent concentration detected is between the method detection limit and reporting limit and is qualified as estimated.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-33, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-33 04/18/01	MWW-33 09/18/01	MWW-33 12/20/01	MWW-33 03/18/02	MWW-33 06/18/02	MWW-33 09/11/02	MWW-33 12/17/02	MWW-33 03/11/03	MWW-33 06/04/03	MWW-33 09/23/03	MWW-33 12/16/03	MWW-33 03/16/04	MWW-33 03/29/05	MWW-33 03/21/06	MWW-33 03/14/07	MWW-33 03/26/08	MWW-33 03/24/09	MWW-33 04/15/10	MWW-33 06/29/11	MWW-33 03/23/12	MWW-33 10/10/13	MWW-33 08/25/14	MWW-33 12/02/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																								
1,1,1,2-Tetrachloroethane	1	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00	<1.00	<58	<200	<200	<200	<200	<200	<200
1,1,1-Trichloroethane	200	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	2.2	<1.00	<1.00	<1.00	<78	<200	<200	<200	<200	<200	<200
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<52	<200	<200	<200	<200	<200	<200
1,1,2-Trichloroethane	0.6	<2.0	<1000	13.3	<1.0	10.7	9.9	9.0	9.9	<10	7.8	8.8	<1.00	6.1	5.16	<1.00	4.72	<100	<200	<200	<200	<200	<200	<200
1,1-Dichloroethane	6	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<10	< 1.00	<1.00	<1.00	1.4	<1.00	<1.00	<1.00	<64	<200	<200	<200	<200	<200	<200
1,1-Dichloroethene	350	15	<1000	13.7	13.1	12.2J	8.4	10.2	14.7	<10	6.0	6.2	8.2	9.2	5.91	7.13	5.09	<72	<200	<200	<200	<200	<200	<200
1,2,4-Trimethylbenzene	400	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<54	<200	<200	<200	<200	<200	<200
1,2-Dichlorobenzene	20	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<60	<200	<200	<200	<200	<200	<200
1,2-Dichloroethane	0.4	2.3	<1000	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	1.2	<1.00	1.2	<1.00	<1.00	<1.00	<62	<200	<200	<200	<200	<200	<200
1,2-Dichloropropane	0.6	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<66	<200	<200	<200	<200	<200	<200
1,3,5-Trimethylbenzene	400	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<56	<200	<200	<200	<200	<200	<200
2-Butanone (MEK)	4,000	<50	<25000	<50	<50	<50	<50	<25	<25	<250	< 25.0	<25.0	<25.0	68.3	<1.00	<50.0	<50.0	150	<2,000	<2,000	<2,000	<2000	<2000	<2000
2-Chlorotoluene	100	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<64	<200	<200	<200	<200	<200	<200
4-Isopropyltoluene	25	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<64	<200	<200	<200	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10000	<10	<10	<10	<10	<5.0	<5.0	<50	< 5.00	< 5.00	<5.00	<5.00	<50.0	<10.0	<10.0	<120	<2,000	<2,000	<2,000	<2000	<2000	<2000
Acetone	6,000	<50	<25,000	<25	<50	<50	<50	<25	<25	<250	< 25.0	<50.0	<25.0	<25.0	<50.0	<50.0	<50.0	<1000	<5,000	<5,000	<5,000	<5000	<5000	<5000
Benzene	1	2.2	<1000	2.8	3.0	2.3J	2.2	2.2	2.0	<10	1.8	2.0	1.8	1.9	1.33	1.21	1.00	<64	<200	<200	<200	<200	<200	<200
Bromochloromethane	NE	35.9	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<66	<200	<200	<200	<200	<200	<200
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	3.0	<1.0	<1.0	4.4	<1.0	<10	< 1.00	5.6	3.8	2.5	<1.00	<1.00	1.88	<68	<200	<200	<200	<200	<200	<200
Carbon disulfide	700	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	1.2	<1.00	<1.00	<1.00	<1.00	<1.00	<120	<400	<400	<400	<400	<400	<400
Carbon tetrachloride	0.3	12.1	<1000	23.6	16.8	16.5	11.6	15.5	11.8	10	9.7	10.9	11.2	11	9.33	9.37	6.41	<54	<200	<200	<200	<200	<200	<200
Chlorobenzene	50	<2.0	<1000	<1.0	<1.0	<1.0J	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<68	<200	<200	<200	<200	<200	<200
Chloroethane	3,000	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<200	<200	<200	<200	<1000	<1000	<1000
Chloroform	70	691 D	1,300 DJ	430 D	465	616	680	710	660	604	675	500	560	460	421	389	322	310	280	280	260	240	260	260
Chloromethane	3	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<56	<200	<200	<200	<200	<200	<200
cis-1,2-Dichloroethene	70	2,370 D	2,400 D	2,190 D	2,160	1,820	1,970	1,750	1,820	1,610	1,740	1,320	1,440	1,300	1,040	966	828	1,100	800	1,300	1,300	1,400	1,800	2,900
Ethylbenzene	600	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<60	<200	<200	<200	<200	<200	<200
Isopropylbenzene	70	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<54	<200	<200	<200	<200	<200	<200
Methylene chloride	5	3,450 D	<2000	<2.0	4.1	<5.0	<5.0	3.2	2.6	<25	< 2.50	< 2.50	<2.50	14	<5.00	<5.00	<5.00	<200	<1,000	<1,000	<1,000	<1000	<1000	<1000
Naphthalene	6	<5.0	<2500	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<50	< 5.00	< 5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<54	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
n-Butylbenzene	70	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<66	<200	<200	<200	<200	<200	<200
n-Propylbenzene	70	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<64	<200	<200	<200	<200	<200	<200
sec-Butylbenzene	70	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<58	<200	<200	<200	<200	<200	<200
Styrene	70	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<72	<200	<200	<200	<200	<200	<200
Tetrachloroethene	0.7	27,200 D	29,600 D	29,600 D	20,200	14,300	24,900	22,000	29,200	22,000	33,300	27,500	26,100	18,200	22,400	24,500	19,400	15,000	16,000	16,000	16,000	12,000	16,000	17,000
Toluene	600	3.4	<1000	5.6	4.4	4.4J	4.0	2.8	3.9	<10	2.4	3.0	3.2	4.9	1.81	1.31	1.13	110	<200	<200	<200	<200	<200	<200
trans-1,2-Dichloroethene	100	17	<1000	17	14.6	48.7	25.4	24.9	<1.0	20	49.2	29.1	22.8	13	59.3	12.7	28.4	<60	<200	<200	<200	<200	<200	<200
Trichloroethene	3	101,000 D	122,000 D	142,000 D	89,500	53,400	91,400	82,300	86,000	78,800	88,000	76,000	73,000	57,000	49,800	55,600	34,600	34,000	35,000	27,000	28,000	24,000	28,000	28,000
Trichlorofluoromethane	2,100	<2.0	<1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<58	<200	<200	<200	<200	<200	<200
Vinyl chloride	0.03	8.2	<1000	11.7	<1.0	13.6	9.0	11.7	16.9	12	11.3	13.4	20	30	18	30.8	37.3	47	<200	<200	<200	<200	250	380
Xylenes (total)	500	3.3	<1000	2	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 1.00	3.7	<1.00	2.8	<3.0	<3.0	<3.0	<170	<400	<400	<400	<400	<400	<400
Total VOCs		134,810	155,300	174,297	112,384	70,244	119,021	106,844	117,743	103,056	123,803	105,405	101,171	76,667	73,760	81,518	55,236	50,717	52,080	44,580	45,560	37,640	46,310	48,540

Notes

[1]	15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.
ug/L	Micrograms per liter.
<	Constituent was not detected above the laboratory reporting limit.
NE	Groundwater standard not established.
2,370	Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.
J	Constituent concentration detected is between the method detection limit and reporting limit and is qualified as estimated.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-34, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-34 04/18/01	MWW-34 09/18/01	MWW-34 12/20/01	MWW-34 03/20/02	MWW-34 06/18/02	MWW-34 09/11/02	MWW-34 12/17/02	MWW-34 03/11/03	MWW-34 06/04/03	MWW-34 09/23/03	MWW-34 12/16/03	MWW-34 03/16/04	MWW-34 03/29/05	MWW-34 03/21/06	MWW-34 03/15/07	MWW-34 03/27/08	MWW-34 03/24/09	MWW-34 04/16/10	MWW-34 06/29/11	MWW-34 03/23/12	MWW-34 10/09/13	MWW-34 08/22/14	MWW-34 12/03/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																								
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
1,1-Dichloroethane	6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
1,1-Dichloroethene	350	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.0	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
1,2-Dichloroethane	0.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
2-Butanone (MEK)	4,000	<2.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	< 5.00	<5.00	<5.00	<50.0	<10.0	<10.0	<1.0	<1.0	<10	<10	<10	<10	<10
Acetone	6,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	< 25.0	<50.0	<25.0	<25.0	<50.0	<50.0	<50.0	<25	<25	<25	<25	<25	<25	<25
Benzene	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<25.0	<25.0	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	1.5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.0	<2.0	<2	<2	<2	<2	<2
Carbon tetrachloride	0.3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
Chloroethane	3,000	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<5	<5	<5
Chloroform	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
Chloromethane	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	1.29	<1.00	1.56	1.4	1.6	<1	<1	1	<1	<1
Ethylbenzene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<10	<1.0	<1	<1	<1	<1	<1
Isopropylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
Methylene chloride	5	<5.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	<2.5	< 2.50	<2.50	<2.50	<5.00	<5.00	<5.00	<5.0	<5.0	<5	<5	<5	<5	<5
Naphthalene	6	<5.0	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	<5.0	< 5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.0	<5.0	<5	<5	<5	<5	19
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
Tetrachloroethene	0.7	9.2	2.5	2.8	4.1	2.4	7.5	3.8	6.6	5.9	5.9	7.0	7.1	<1.00	10.1	13.4	24.9	19	30	31	35	23	38	26
Toluene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	7.1	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
Trichloroethene	3	6.5	1.4	1.1	1.9	2.4	2.5	1.7	2.3	2.5	2.6	2.8	2.3	<1.00	2.35	2.65	4.39	2.4	3.0	2.5	3.0	2.0	2.5	2.0
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
Vinyl chloride	0.03	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1	<1	<1	<1	<1
Xylenes (total)	500	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.00	<1.00	<1.00	<3.00	<3.00	<2.0	<2.0	<2	<2	<2	<2	<2
Total VOCs		15.7	3.9	3.9	6.0	5.8	10.0	5.5	8.9	11.2	10.0	9.8	16.5	ND	13.7	16.1	30.9	22.8	34.6	33.5	38.0	26.0	40.5	47.0

Notes

[1]	15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.
ug/L	Micrograms per liter.
<	Constituent was not detected above the laboratory reporting limit.
ND	Constituent was not detected above the method detection limit.
D	Constituent concentration was quantitated using a secondary dilution.
NE	Groundwater standard not established.
6.5	Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.
J	Constituent concentration detected is between the method detection limit and reporting limit and is qualified as estimated.
U^B	Constituent concentration was qualified as non-detect due to associated blank contamination.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-35, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-35 04/19/01	MWW-35 09/18/01	
Volatile Organic Compounds (USEPA Method 8260) µg/L				
Acetone	6,000	<50	<25	
Benzene	1	<2.0	<1.0	
Bromochloromethane	NE	<2.0	<1.0	
2-Butanone (MEK)	4,000	<50	<25	Well removed in November 2001 during installation of
Carbon disulfide	700	<2.0	<1.0	facilities new storm sewer line.
Carbon tetrachloride	0.3	<2.0	<1.0	
Chlorobenzene	50	<2.0	<1.0	
Chloroethane	3,000	<2.0	<1.0	
Chloroform	70	<2.0	<1.0	
Chloromethane	3	<2.0	<1.0	
2-Chlorotoluene	100	<2.0	<1.0	
1,2-Dichlorobenzene	20	<2.0	<1.0	
1,1-Dichloroethane	6	2.3	<1.0	
1,2-Dichloroethane	0.4	<2.0	<1.0	
1,1-Dichloroethene	350	<2.0	<1.0	
cis-1,2-Dichloroethene	70	<2.0	<1.0	
trans-1,2-Dichloroethene	100	<2.0	<1.0	
1,2-Dichloropropane	0.6	<2.0	<1.0	
Ethylbenzene	600	<2.0	<1.0	
Isopropylbenzene	70	<2.0	<1.0	
4-Isopropyltoluene	25	<2.0	<1.0	
4-Methyl-2-pentanone	100	<10	<10	
Methylene chloride	5	<5.0	<2.0	
Naphthalene	6	<5.0	<2.5	
n-Propylbenzene	70	<2.0	<1.0	
Styrene	70	<2.0	<1.0	
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	
Tetrachloroethene	0.7	<2.0	<1.0	
Toluene	600	<2.0	1.0	
1,1,1-Trichloroethane	200	<2.0	<1.0	
1,1,2-Trichloroethane	0.6	<2.0	<1.0	
Trichloroethene	3	<2.0	<1.0	
Trichlorofluoromethane	2,100	<2.0	<1.0	
1,2,4-Trimethylbenzene	400	<2.0	<1.0	
1,3,5-Trimethylbenzene	400	<2.0	<1.0	
Vinyl chloride	0.03	<2.0	<1.0	
Xylenes (total)	500	<2.0	<1.0	
Total VOCs		2.3	1.0	

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

NE Groundwater standard not established.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-36, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-36 04/18/01	MWW-36 09/18/01	MWW-36 12/21/01	MWW-36 03/19/02	MWW-36 06/18/02	MWW-36 09/11/02	MWW-36 12/17/02	MWW-36 03/11/03	MWW-36 06/04/03	MWW-36 09/23/03	MWW-36 12/16/03	MWW-36 03/29/05
Volatile Organic Compounds (USEPA Method 8260) µg/L													Well abandoned June 13, 2006
Acetone	6,000	<50	<25	3,700 D	563	445	219	330	4,440	69	216	108	61
Benzene	1	3.2	33.4	29.6	26.2	9.2	9.7	<1.0	6.3	4.3	2.4	1.5	<1.00
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
2-Butanone (MEK)	4,000	<50	<25	1,710 D	324	104	703	<25	92.5	647	< 25.0	59.6	<25.0
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
Carbon disulfide	700	<2.0	<1.0	<1.0	5.4	<1.0	<1.0	<1.0	<1.0	<1.0	18.5	9.6	<1.00
Carbon tetrachloride	0.3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
Chloroethane	3,000	7.6	15	15.2	9.4	1.2	<1.0	<1.0	10.0	30.8	29.8	3.8	3.9
Chloroform	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	20.1	<1.00	<1.00
Chloromethane	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
2-Chlorotoluene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
1,2-Dichlorobenzene	20	5.5	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
1,1-Dichloroethane	6	47.8	189	113	75.4	70.2	145	57.6	34.8	<1.0	28.9	27.1	86
1,2-Dichloroethane	0.4	<2.0	2.2	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
1,1-Dichloroethene	350	<2.0	5.1	<1.0	<1.0	<1.0	<1.0	2.6	<1.0	<1.0	< 1.00	<1.00	25
cis-1,2-Dichloroethene	70	28.2	92.1	1.4	7.9	9.5	1.4	671	20.3	<1.0	12.6	7.7	222
trans-1,2-Dichloroethene	100	<2.0	6.9	3.7	3.7	1.3	3.1	5.1	1.9	2.4	2.4	<1.00	<1.00
1,2-Dichloropropane	0.6	<2.0	5.4	2.9	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
Ethylbenzene	600	2.4	10.4	8.6	7.2	3.0	6.0	<1.0	1.7	2.6	1.6	1.1	<1.00
Isopropylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	2.8
4-Methyl-2-pentanone	100	18.8	<10	<10	<10	<10	<10	<5.0	<5.0	8.4	< 5.00	< 5.00	<5.00
Methylene chloride	5	<5.0	<2.0	<2.0	14.4	<5.0	<5.0	<2.5	<2.5	<2.5	2.8	< 2.50	<2.50
Naphthalene	6	<5.0	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	< 5.00	< 5.00	<5.00
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	< 1.00	<1.00	<1.00
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
1,1,2,2-Tetrachloroethane	0.20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
Tetrachloroethene	0.7	4.5	2.1	<1.0	2.0	1.5	<1.0	9.4	1.5	<1.0	< 1.00	6.7	12
Toluene	600	<2.0	11.4	9.9	10.0	4.2	14.0	<1.0	32.1	58.7	8.6	1.8	<1.00
1,1,1-Trichloroethane	200	4.2	1.0	1.2	1.7	6.1	<1.0	15.8	<1.0	<1.0	< 1.00	10.3	91
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
Trichloroethene	3	8.0	41.5	1.1	4.2	<1.0	<1.0	13.1	2.5	<1.0	1.2	2.2	22
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.0
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00
Vinyl chloride	0.03	7.0	135 D	<1.0	8.0	2.0	<1.0	11.5	1.9	<1.0	< 1.00	<1.00	43
Xylenes (total)	500	4.2	23.4	26.7	27.6	9.1	34.0	2.7	3.2	12.9	7.8	6.1	1.0
Total VOCs		141	575	5,625	1,090	667	1,135	1,120	4,649	838	353	246	572

Notes

[1]	15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.
ug/L	Micrograms per liter.
<	Constituent was not detected above the laboratory reporting limit.
D	Constituent concentration was quantitated using a secondary dilution.
NE	Groundwater standard not established.
135	Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-37, Brenntag Mid-South Facility, (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-37 04/20/01	MWW-37 09/17/01	MWW-37 12/19/01	MWW-37 03/19/02	MWW-37 06/18/02	MWW-37 09/11/02	MWW-37 12/17/02	MWW-37 03/11/03	MWW-37 06/04/03	MWW-37 09/23/03	MWW-37 12/16/03	MWW-37 03/15/04	MWW-37 03/29/05	MWW-37 03/21/06	MWW-37 03/14/07	MWW-37 03/26/08	MWW-37 03/24/09	MWW-37 04/16/10	MWW-37 06/27/11	MWW-37 03/22/12	MWW-37 10/10/13	MWW-37 08/22/14	MWW-37 12/02/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																								
1,1,1,2-Tetrachloroethane	1	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00 UJ	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
1,1,1-Trichloroethane	200	12.6	16.5	3.7	6.4	<1.0	<1.0	2.2J	<1.0	<1.0	< 1.00	1.3	<1.00	1.4	3.7	123	<1.00	<1.0	6.5	3.0	7.2	<2	<2	<2
1,1,2,2-Tetrachloroethane	0.2	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
1,1,2-Trichloroethane	0.6	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
1,1-Dichloroethane	6	112	185	31.3	76.0	19.8	31.5	30.3	46.2	14.0	12.5	15.7	19.2	26.9	25.1	103	18.9	17	30	19	22	17	25	19
1,1-Dichloroethene	350	277 D	378 D	101	189	75.8	64.4	73.9	99.4	51.7	23.3	47.4	52.2	67.1	46.2	78.5	46.9	43	41	46	31	50	47	43
1,2,4-Trimethylbenzene	400	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
1,2-Dichlorobenzene	20	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
1,2-Dichloroethane	0.4	2.7	<5.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
1,2-Dichloropropane	0.6	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
1,3,5-Trimethylbenzene	400	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
2-Butanone (MEK)	4,000	1,420 D	<125	<25	<50	<50	<50	<25	<25	<25	< 25.0	<25.0	<25.0	<25.0	<50.0	<50.0	<50.0	<10	<10	<20	<20	<20	<20	<20
2-Chlorotoluene	100	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
4-Isopropyltoluene	25	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<50	<10	<10	<10	<10	<5.0	<5.0	<5.0	< 5.00	< 5.00	<5.00	<5.00	<50	<10.0	<10.0	<10	<10	<20	<20	<20	<20	<20
Acetone	6,000	376	<125	<25	<50	<50	<50	<25	<25	<25	< 25.0	<50.0	<25.0	<25.0	<50.0	<50.0	<50.0	<25	<25	<50	<50	<50	<50	<50
Benzene	1	<2.0	<5.0	<1.0	1.3	<1.0	<1.0	<1.0	1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
Bromochloromethane	NE	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
Bromodichloromethane	0.6	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
Carbon disulfide	700	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.0	<2.0	<2	<2	<4	<4	<4
Carbon tetrachloride	0.3	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
Chlorobenzene	50	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
Chloroethane	3,000	<2.0	<5.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	1.0	<1.00	<1.00	<1.00	25.7	<1.00	<1.0	6.1	<2	<2	<10	<10	<10
Chloroform	70	16	27 D	3.3	9.1	3.5	4.0	4.2	2.8	2.6	2.1	2.7	3.1	<1.00	3.87	4.18	3.05	2.1	4.4	3.8	3.1	3.3	4.0	3.4
Chloromethane	3	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
cis-1,2-Dichloroethene	70	408 D	700 D	142	295	97.2	99.9	100	117	50.8	109	72.6	126	86	192	540	143	87	240	140	170	140	160	150
Ethylbenzene	600	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
Isopropylbenzene	70	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
Methylene chloride	5	<5.0	<10	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	< 2.50	< 2.50	<2.50	<2.50	<5.00	82	<5.00	<5.0	<5.0	<10	<10	<10	<10	<10
Naphthalene	6	<5.0	<12.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	< 5.00	< 5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.0	<5.0	<10	<10	<10	<10	<10
n-Butylbenzene	70	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
n-Propylbenzene	70	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
sec-Butylbenzene	70	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
Styrene	70	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
Tetrachloroethene	0.7	284 D	312 D	108	150	87.9	105	99.5	122	69.1	89.3	94	92.4	90	153	175	180	98	180	190	180	200	220	210
Toluene	600	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	1.67	<1.00	<1.0	<1.0	<2	<2	<2	<2	<2
trans-1,2-Dichloroethene	100	<2.0	<5.0	<1.0	1.8	<1.0	<1.0	1.0	1.4	<1.0	< 1.00	<1.00	<1.00	<1.00	3.19	1.54	<1.00	<1.0	2.3	<2	<2	<2	<2	<2
Trichloroethene	3	408 D	540 D	187	264	136	154	145	178	101	133	120	127	131	177	321	209	120	220	220	230	200	220	210
Trichlorofluoromethane	2,100	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<20	<20	<2	<2	<2
Vinyl chloride	0.03	61.8	120 D	23.1	45.8	15.4	11.8	13.4	40.2	6.1	5.3	14.5	11.1	15	8.24	126	6.17	8.7	12	4.3	3.1	4.1	<2	6.0
Xylenes (total)	500	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<3.00	9.22	<3.00	<2.0	<2.0	<4	<4	<4	<4	<4
Total VOCs		3,378	2,279	601	1,040	436	471	470	608	295	375	369	431	417	612	1,591	607	376	742	626	646	614	676	641

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

ND Constituent was not detected above the method detection limit.

D Constituent concentration was quantitated using a secondary dilution.

NE Groundwater standard not established.

120 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

J Constituent concentration detected is between the method detection limit and reporting limit and is qualified as estimated.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-38, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-38 04/20/01	MWW-38 09/18/01	MWW-38 12/19/01	MWW-38 03/18/02	MWW-38 06/18/02	MWW-38 09/10/02	MWW-38 12/17/02	MWW-38 03/10/03	MWW-38 06/04/03	MWW-38 09/23/03	MWW-38 12/16/03	MWW-38 03/16/04	MWW-38 09/23/04	MWW-38 03/29/05	MWW-38 03/21/06	MWW-38 09/19/06	MWW-38 03/14/07	MWW-38 09/25/07	MWW-38 03/26/08	MWW-38 03/23/09	MWW-38 04/16/10	MWW-38 06/28/11	MWW-38 03/22/12	MWW-38 10/08/13	MWW-38 08/21/14	MWW-38 12/02/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																											
1,1,1,2-Tetrachloroethane	1	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.2	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	0.6	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	6	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	350	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	400	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	20	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	0.4	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.6	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.2	1.2	1.2	<1	1.4	1.2
1,3,5-Trimethylbenzene	400	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	4,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<50	<50	<50	<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	100	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Isopropyltoluene	25	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	6,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	36.8	<25	<50	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25
Benzene	1	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	NE	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	0.6	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	700	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	0.3	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	50	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	3,000	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<5	<5
Chloroform	70	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	3	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.0	<1	<1	<1	<1	<1	<1
Ethylbenzene	600	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	70	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	5	<5	<2	<2	<2	<5	<5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Naphthalene	6	<5	<2.5	<2.5	<2.5	<5	<5	<2.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	70	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	70	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	70	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	70	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	0.7	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	600	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	3	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	2,100	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	0.03	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (total)	500	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<3	<3	<3	<3	<2	<2	<2	<2	<2	<2	<2
Total VOCs		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36.8	1.0	ND	ND	ND	ND	ND	1.0	1.2	1.2	1.2	ND	1.4	1.2

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

ND Constituent was not detected above the method detection limit.

D Constituent concentration was quantitated using a secondary dilution.

NE Groundwater standard not established.

1.2 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-40, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-40 09/11/02	MWW-40 12/17/02	MWW-40 03/11/03		MWW-40 03/24/09	
Volatile Organic Compounds (USEPA Method 8260) µg/L							
Acetone	6,000	<50	<25	<25	No Access	<100	No Access
Benzene	1	12.1	6.3	7.1		<6.4	
Bromodichloromethane	0.6	<1.0	<1.0	<1.0		<6.8	
Bromochloromethane	NE	<1.0	<1.0	<1.0		<6.6	
2-Butanone (MEK)	4,000	<50	<25	<25		<12	
n-Butylbenzene	70	<1.0	<1.0	<1.0		<6.6	
sec-Butylbenzene	70	<1.0	<1.0	<1.0		<5.8	
Carbon disulfide	700	17.2	1.2	10.3		<12	
Carbon tetrachloride	0.3	<1.0	<1.0	<1.0		<5.4	
Chlorobenzene	50	<1.0	<1.0	<1.0		<6.8	
Chloroethane	3,000	12.4	8.3	<1.0		<20	
Chloroform	70	55.4	34.5	40.9		<5.8	
Chloromethane	3	<1.0	<1.0	<1.0		<5.6	
2-Chlorotoluene	100	<1.0	<1.0	<1.0		18	
1,2-Dichlorobenzene	20	<1.0	<1.0	<1.0		<6.0	
1,1-Dichloroethane	6	1,160	594	875		310	
1,2-Dichloroethane	0.4	<1.0	6.9	8.5		<6.2	
1,1-Dichloroethene	350	1,000	532	849		530	
cis-1,2-Dichloroethene	70	4,650	2,420	3,250J		3,700	
trans-1,2-Dichloroethene	100	15.6	8.7	9.6		12	
1,2-Dichloropropane	0.6	11.0	7.7	10.0		<7.2	
Ethylbenzene	600	1.3	1.9	<1.0		<6.0	
Isopropylbenzene	70	1.1	<1.0	<1.0		<5.4	
4-Isopropyltoluene	25	<1.0	<1.0	<1.0		<6.4	
4-Methyl-2-pentanone	100	<10	<5.0	<5.0		<12	
Methylene chloride	5	5.4	7.0	<2.5		<20	
Naphthalene	6	8.6	<2.5	<5.0		<5.4	
n-Propylbenzene	70	<1.0	<1.0	<1.0		<6.8	
Styrene	70	<1.0	<1.0	<1.0		<7.2	
1,1,1,2-Tetrachloroethane	1	<1.0	<1.0	<1.0		<5.8	
1,1,2,2-Tetrachloroethane	0.2	<1.0	<1.0	<1.0		5.2	
Tetrachloroethene	0.7	684	300	522		1,000	
Toluene	600	18.8	11.6	5.9		13	
1,1,1-Trichloroethane	200	313	163	155		100	
1,1,2-Trichloroethane	0.6	<1.0	<1.0	<1.0		<10	
Trichloroethene	3	1,260	580	880		2,200	
Trichlorofluoromethane	2,100	<1.0	<1.0	<1.0		<5.8	
1,2,4-Trimethylbenzene	400	<1.0	<1.0	<1.0		<5.4	
1,3,5-Trimethylbenzene	400	<1.0	<1.0	<1.0		<5.6	
Vinyl chloride	0.03	672	234	432		590	
Xylenes (total)	500	38.1	6.5	2.7		<17	
Total VOCs		9,936	4,924	7,058		8,478	

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

NE Groundwater standard not established.

672 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-43, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-43 04/17/01	MWW-43 09/17/01	MWW-43 12/19//01	MWW-43 03/19/02	MWW-43 06/18/02	MWW-43 09/10/02	MWW-43 12/16/02	MWW-43 03/10/03	MWW-43 06/04/03	MWW-43 09/23/03	MWW-43 12/16/03	MWW-43 03/15/04	MWW-43 09/23/04	MWW-43 03/28/05	MWW-43 03/21/06	MWW-43 09/19/06	MWW-43 03/14/07	MWW-43 09/25/07	MWW-43 03/26/08	MWW-43 03/23/09	MWW-43 04/16/10	MWW-43 06/28/11	MWW-43 03/23/12	MWW-43 10/10/13	MWW-43 08/21/14	MWW-43 12/03/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																											
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	350	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	0.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	4,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<50	<50	<50	<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	6,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<50	<25	<25	<25	<50	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25
Benzene	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	0.3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	3,000	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<5	<5	<5
Chloroform	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	5	<5.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<5.0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Naphthalene	6	<5.0	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5	<5	<5	<5	<5	6.5
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	1.2U[B]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<!	<!	<!	<!	<!	<!	<!	<1	<1	<1
Tetrachloroethene	0.7	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	0.03	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (total)	500	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<1.0	<3	<3	<3	<2	<2	<2	<2	<2	<2	<2
Total VOCs		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.5

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

µg/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

ND Constituent was not detected above the method detection limit.

NE Groundwater standard not established.

672 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-44, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-44 04/18/01	MWW-44 09/18/01	MWW-44 12/20/01	
Volatile Organic Compounds (USEPA Method 8260) µg/L					
Acetone	6,000	<50	<125	<25	
Benzene	1	<2.0	<5.0	<1.0	
Bromochloromethane	NE	<2.0	<5.0	<1.0	Well abandoned on February 12, 2002
2-Butanone (MEK)	4,000	<2.0	<5.0	<1.0	
Carbon disulfide	700	<2.0	<5.0	<1.0	
Carbon tetrachloride	0.3	<2.0	<5.0	<1.0	
Chlorobenzene	50	<2.0	<5.0	<1.0	
Chloroethane	3,000	<2.0	<5.0	<1.0	
Chloroform	70	4.2	<5.0	<1.0	
Chloromethane	3	<2.0	<5.0	<1.0	
2-Chlorotoluene	100	<2.0	<5.0	<1.0	
1,2-Dichlorobenzene	20	<2.0	<5.0	<1.0	
1,1-Dichloroethane	6	<2.0	<5.0	<1.0	
1,2-Dichloroethane	0.4	<2.0	<5.0	<1.0	
1,1-Dichloroethene	350	<2.0	<5	<1.0	
cis-1,2-Dichloroethene	70	22.6	18 D	7.4	
trans-1,2-Dichloroethene	100	<2.0	<5.0	<1.0	
1,2-Dichloropropane	0.6	<2.0	<5.0	<1.0	
Ethylbenzene	600	<2.0	<5.0	<1.0	
Isopropylbenzene	70	<2.0	<5.0	<1.0	
4-Isopropyltoluene	25	<2.0	<5.0	<1.0	
4-Methyl-2-pentanone	100	<10	<50	<10	
Methylene chloride	5	<5.0	<10	<2.0	
Naphthalene	6	<5.0	<12.5	<2.5	
n-Propylbenzene	70	<2.0	<5.0	<1.0	
Styrene	70	<2.0	<5.0	<1.0	
1,1,1,2-Tetrachloroethane	1	<2.0	<5.0	<1.0	
Tetrachloroethene	0.7	630 D	234 D	166	
Toluene	600	<2.0	<5.0	<1.0	
1,1,1-Trichloroethane	200	<2.0	<5.0	<1.0	
1,1,2-Trichloroethane	0.6	<2.0	<5.0	<1.0	
Trichloroethene	3	1,380 D	765 D	475	
Trichlorofluoromethane	2,100	<2.0	<5.0	<1.0	
1,2,4-Trimethylbenzene	400	<2.0	<5.0	<1.0	
1,3,5-Trimethylbenzene	400	<2.0	<5.0	<1.0	
Vinyl chloride	0.03	<2.0	<5.0	<1.0	
Xylenes (total)	500	<2.0	<5.0	<1.0	
Total VOCs		2,037	1,017	648	

Notes

[1]	15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.
µg/L	Micrograms per liter.
<	Constituent was not detected above the laboratory reporting limit.
D	Constituent concentration was quantitated using a secondary dilution.
NE	Groundwater standard not established.
475	Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-45, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-45 04/18/01	MWW-45 09/18/01	MWW-45 12/20/01	MWW-45 03/19/02	MWW-45 06/18/02	MWW-45 09/11/02	MWW-45 12/17/02	MWW-45 03/11/03	MWW-45 06/04/03	MWW-45 09/23/03	MWW-45 12/16/03	MWW-45 03/16/04	MWW-45 03/29/05	MWW-45 03/21/06	MWW-45 03/15/07	MWW-45 03/26/08	MWW-45 03/24/09	MWW-45 04/15/10	MWW-45 06/28/11	MWW-45 03/23/12	MWW-45 10/08/13	MWW-45 08/22/14	MWW-45 12/03/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																								
1,1,1,2-Tetrachloroethane	1	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	200	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.0	8.5	<1.00	5.99	<1.00	<4.0	<4.0	22	16	31	<5	<5
1,1,2,2-Tetrachloroethane	0.2	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	0.6	<2.0	<100	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.0	<1.0	<1.00	3.11	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
1,1-Dichloroethane	6	4.3	<100	4.2	4.6	3.9	4.7	4.2	3.9	<1.0	4.2	4.1	4.4	8.7	10.7	11.2	11.4	8.2	5.8	150	110	110	37	10
1,1-Dichloroethene	350	5.2	<100	3.6	4.3	3.5	3.8	2.0	2.9	1.4	2.1	2.1	2.7	12.8	4.29	2.34	2.13	<4.0	<4.0	<5	11	21	9.1	<5
1,2,4-Trimethylbenzene	400	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.0	<1.0	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	20	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.4	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
1,2-Dichloropropane	0.6	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
1,3,5-Trimethylbenzene	400	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.0	<1.0	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
2-Butanone (MEK)	4,000	<50	<2500	<1.0	<50	<50	<50	<25	<25	<25	< 25.0	<25.0	<25.0	<25.0	<50.0	<50.0	<50.0	<40	<40	<50	<50	<50	<50	<50
2-Chlorotoluene	100	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
4-Isopropyltoluene	25	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<40	<5	<5	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<100	<10	<10	<10	<10	<5	<5.0	<5.0	< 5.00	< 5.00	<5.00	<5.00	<50.0	<10.0	<10.0	<40	<20	<50	<50	<50	<50	<50
Acetone	6,000	<50	<2500	<25	<50	<50	<50	<25	<25	<25	< 25.0	<50.0	<25.0	27.2	<50.0	<50.0	<50.0	<100	<100	<130	<130	<130	<130	<130
Benzene	1	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.00	<1.00	1.00	1.05	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
Bromochloromethane	NE	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
Bromodichloromethane	0.6	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
Carbon disulfide	700	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<8.0	<8.0	<10	<10	<10	<10	<10
Carbon tetrachloride	0.3	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
Chlorobenzene	50	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
Chloroethane	3,000	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	1.2	<1.00	<1.00	<1.00	<4.0	<4.0	5.3	5.0	<25	<25	<25
Chloroform	70	3.1	<100	5.7	3.7	4.7	4.8	1.6	1.4	<1.0	< 1.00	1.2	1.1	1.2	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
Chloromethane	3	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	70	500 D	440 D	347 D	345	340	255	220	257	259	180	195	236	452	2,680	432	210	230	200	150	180	230	570	600
Ethylbenzene	600	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.0	<1.0	<1.00	<1.00	<1.00	<40	<4.0	<5	<5	<5	<5	<5
Isopropylbenzene	70	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
Methylene chloride	5	<5.0	<100	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	< 2.50	< 2.50	<2.50	18.9	<5.00	<5.00	<5.00	<20	<20	<25	<25	<25	<25	<25
Naphthalene	6	<5.0	<100	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	< 5.00	< 5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<20	<4.0	<25	<25	<25	<25	<25
n-Butylbenzene	70	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
n-Propylbenzene	70	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
sec-Butylbenzene	70	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
Styrene	70	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
Tetrachloroethene	0.7	9,320 D	10,100 D	7,650 D	6,850	6,930	5,200	3,160	1,580	3,180	3,010	2,340	3,170	1,830	1.06	394	502	89	230	170	170	89	38	<5
Toluene	600	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.0	7.0	<1.00	1.08	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
trans-1,2-Dichloroethene	100	35.6	<100	16.9	21.9	18.4	25.3	21.4	31.8	25.4	17.9	23	33.1	40.5	44.8	20.9	10.2	21	17	8.5	10	18	55	38
Trichloroethene	3	12,400 D	14,800 D	12,600 D	10,100	9,120	6,500	4,960	3,090	4,800	4,010	3,300	4,000	2,700	<1.00	1,420	849	590	630	380	400	580	490	59
Trichlorofluoromethane	2,100	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.0	<1.0	<1.00	<1.00	<1.00	<4.0	<4.0	<5	<5	<5	<5	<5
Vinyl chloride	0.03	45.6	<100	40.6	40.2	35.0	33.4	9.8	33.3	36.4	< 1.00	27.7	48	111	24.8	20.2	11.2	16	16	8.2	9.9	13	44	39
Xylenes (total)	500	<2.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.0	<5.0	<3.00	<3.00	<3.00	<8.0	<8.0	<10	<10	<10	<10	<10
Total VOCs		22,314	25,340	20,668	17,370	16,456	12,027	8,379	5,000	8,302	7,224	5,893	7,495	5,219	2,767	2,312	1,596	954	1,099	894	912	1,092	1,243	746

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

ND Constituent was not detected above the method detection limit.

D Constituent concentration was quantitated using a secondary dilution.

NE Groundwater standard not established.

9,320 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-46I, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-46I 04/20/01	MWW-46I 09/18/01	MWW-46I 12/21/01	MWW-46I 03/18/02	MWW-46I 06/17/02	MWW-46I 09/10/02	MWW-46I 12/16/02	MWW-46I 03/10/03	MWW-46I 06/03/03	MWW-46I 09/22/03	MWW-46I 12/15/03	MWW-46I 03/15/04	MWW-46I 09/23/04	MWW-46I 03/28/05	MWW-46I 03/23/06	MWW-46I 09/19/06	MWW-46I 03/13/07	MWW-46I 09/25/07	MWW-46I 03/26/08	MWW-46I 03/23/09	MWW-46I 04/15/10	MWW-46I 06/27/11	MWW-46I 03/21/12	MWW-46I 10/08/13	MWW-46I 08/20/14	MWW-46I 12/01/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																											
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 UJ	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	350	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	0.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	4,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<50	<50	<50	<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	6,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25
Benzene	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	0.3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Chloroethane	3,000	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<5	<5	<5
Chloroform	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Chloromethane	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	5	<5.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5	<5	<5
Naphthalene	6	<5.0	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	0.7	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Toluene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	0.03	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Xylenes (total)	500	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<3.0	<1.0	<3.0	<3.0	<3.0	<2	<2	<2	<2	<2	<2	<2
Total VOCs		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

NA Not analyzed.

ND Constituent was not detected above the method detection limit.

NE Groundwater standard not established.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-47I, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-47I 12/21/01	MWW-47I 03/18/02	MWW-47I 06/17/02	MWW-47I 09/10/02	MWW-47I 12/16/02	MWW-47I 03/10/03	MWW-47I 06/03/03	MWW-47I 09/22/03	MWW-47I 12/15/03	MWW-47I 03/15/04	MWW-47I 09/23/04	MWW-47I 03/28/05	MWW-47I 03/23/06	MWW-47I 09/19/06	MWW-47I 03/13/07	MWW-47I 09/25/07	MWW-47I 03/26/08	MWW-47I 03/23/09	MWW-47I 04/15/10	MWW-47I 06/27/11	MWW-47I 03/21/12	MWW-47I 10/08/13	MWW-47I 08/20/14	MWW-47I 12/01/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																									
1,1,1,2-Trichloroethene	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	0.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	350	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	400	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	400	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	4,000	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<50	<50	<50	<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
4-Isopropyltoluene	25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	6,000	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25
Benzene	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	0.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	700	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	0.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Chloroethane	3,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<5	<5	<5
Chloroform	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.05	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Chloromethane	3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	600	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	5	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5	<5	<5
Naphthalene	6	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Styrene	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	0.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Toluene	600	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	3	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	2,100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	0.03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Xylenes (total)	500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<3.00	<1.0	<3.0	<3.0	<3.0	<2	<2	<2	<2	<2	<2	<2
Total VOCs		1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

ND Constituent was not detected above the method detection limit.

NE Groundwater standard not established.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-48, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-48 04/18/01	MWW-48 09/17/01	MWW-48 12/18/01	MWW-48 03/20/02	MWW-48 06/18/02	MWW-48 09/10/02	MWW-48 12/17/02	MWW-48 03/10/03	MWW-48 06/04/03	MWW-48 09/23/03	MWW-48 12/16/03	MWW-48 03/16/04	MWW-48 03/28/05	MWW-48 03/22/06	MWW-48 03/14/07	MWW-48 03/27/08	MWW-48 03/23/09	MWW-48 04/16/10	MWW-48 06/27/11	MWW-48 03/23/12	MWW-48 10/08/13	MWW-48 08/21/14	MWW-48 12/01/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																								
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	6	<2.0	<1.0	<1.0	1.4	1.4	2.7	2.8	7.5	8.7	4.2	2.3	1.7	7.9	5.63	12.8	3.73	6.3	9.8	4.2	9.4	4.8	12	6.0
1,1-Dichloroethene	350	<2.0	1.1	2.2	2.1	2.4	<1.0	3.9	4.0	2.9	2.5	2.0	1.2	2.2	3.60	5.12	3.6	6.1	2.7	3.6	8.0	4.2	15	6.0
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	0.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	4,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<50	<50	<50	<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	3.78	34.8	<1	<1	<1	<1	<1	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	6,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25
Benzene	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	0.3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	3,000	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<5	<5
Chloroform	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	<2.0	<1.0	<1.0	1.5	1.1	2.3	4.1	6.8	7.5	3.6	2.2	1.9	5.3	4.57	7.16	4.5	7.4	1.6	4.9	11	7.2	46	11
Ethylbenzene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	5	<5.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Naphthalene	6	<5.0	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	2.3	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	0.7	26.1	57.4	102	77.8	88.1	121	106	39.4	27.8	56.2	72.3	32.9	19.2	84.6	65.2	73	60	20	51	55	36	41	38
Toluene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	3	5.5	4.0	7.5	6.5	5.9	8.5	9.6	5.6	5.7	6.2	6.9	5.6	4.0	14.5	9.28	9.18	11	3.8	7.0	13	7.6	10	7.9
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	0.03	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1	<1	<1	1.2	<1	2.25	<1	<1	<1	<1	<1	<1	7.4	1.8
Xylenes (total)	500	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<3	<3	<2	<2	<2	<2	<2	<2	<2
Total VOCs		31.6	62.5	112	89.3	98.9	137	126	64.3	52.6	72.7	85.7	43.3	39.8	117	137	94.0	90.8	41.0	70.7	96.4	59.8	131.4	70.7

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

NE Groundwater standard not established.

4 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-49D, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-49D 04/19/01	MWW-49D 09/18/01	MWW-49D 12/21/01	MWW-49D 03/18/02	MWW-49D 06/17/02	MWW-49D 09/10/02	MWW-49D 12/16/02	MWW-49D 03/10/03	MWW-49D 06/03/03	MWW-49D 09/22/03	MWW-49D 12/15/03	MWW-49D 03/15/04	MWW-49D 03/28/05	MWW-49D 03/23/06	MWW-49D 03/13/07	MWW-49D 03/26/08	MWW-49D 03/23/09	MWW-49D 04/15/10	MWW-49D 06/27/11	MWW-49D 03/21/12	MWW-49D 10/08/13	MWW-49D 08/21/14	MWW-49D 12/01/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																								
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	350	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.0	<1.0	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	0.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	4,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	< 25.0	<25.0	<25.0	<25.0	<50.0	<50.0	<50.0	<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	< 5.00	< 5.00	<5.00	<5.00	<50.0	<10.0	<10.0	<10	<10	<10	<10	<10	<10	<10
Acetone	6,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	< 25.0	<50.0	<25.0	<25.0	<50.0	<50.0	<50.0	<25	<25	<25	<25	<25	<25	<25
Benzene	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.0	<1.0	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	0.3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Chloroethane	3,000	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<5	<5	<5
Chloroform	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Chloromethane	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.0	<1.0	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	5	<5.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	< 2.50	< 2.50	<2.50	<2.50	<5.00	<5.00	<5.00	<5	<5	<5	<5	<5	<5	<5
Naphthalene	6	<5.0	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	< 5.00	< 5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	1.2U[B]	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	0.7	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Toluene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.0	<1.0	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	0.03	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1	<1	<1	<1	<1	<1	<1
Xylenes (total)	500	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.00	<1.0	<1.0	<3.00	<3.00	<3.00	<2	<2	<2	<2	<2	<2	<2
Total VOCs		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

ND Constituent was not detected above the method detection limit.

NE Groundwater standard not established.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-50D, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-50D 04/19/01	MWW-50D 09/18/01	MWW-50D 12/21/01	MWW-50D 03/19/02	MWW-50D 06/18/02	MWW-50D 09/11/02	MWW-50D 12/17/02	MWW-50D 03/11/03	MWW-50D 06/04/03	MWW-50D 09/23/03	MWW-50D 12/17/03	MWW-50D 03/17/04	MWW-50D 03/28/05	MWW-50D 03/22/06	MWW-50D 03/14/07	MWW-50D 03/27/08	MWW-50D 03/23/09	MWW-50D 04/15/10	MWW-50D 06/28/11	MWW-50D 03/23/12	MWW-50D 10/09/13	MWW-50D 08/22/14	MWW-50D 12/02/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																								
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,1-Dichloroethane	6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,1-Dichloroethene	350	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,2-Dichloroethane	0.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
2-Butanone (MEK)	4,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<50	<50	<50	<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	6,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25
Benzene	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2	<2	<2	<2	<2
Carbon tetrachloride	0.3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Chloroethane	3,000	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<5	<5	<5
Chloroform	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Chloromethane	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Ethylbenzene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Isopropylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Methylene chloride	5	<5.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5
Naphthalene	6	<5.0	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Tetrachloroethene	0.7	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Toluene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Trichloroethene	3	<2.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Vinyl chloride	0.03	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Xylenes (total)	500	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<3.0	<3.0	<2.0	<2.0	<2	<2	<2	<2	<2
Total VOCs		ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

ND Constituent was not detected above the method detection limit.

NE Groundwater standard not established.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-51D, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW51D 04/20/01	MWW51D 09/18/01	MWW51D 12/20/01	MWW-51D 03/20/02	MWW-51D 06/18/02	MWW-51D 09/11/02	MWW-51D 12/17/02	MWW-51D 03/11/03	MWW-51D 06/04/03	MWW-51D 09/24/03	MWW-51D 12/16/03	MWW-51D 03/16/04	MWW-51D 03/29/05	MWW-51D 03/22/06	MWW-51D 03/15/07	MWW-51D 03/27/08	MWW-51D 03/24/09	MWW-51D 04/16/10	MWW-51D 06/29/11	MWW-51D 03/23/12	MWW-51D 10/10/13	MWW-51D 08/25/14	MWW-51D 12/03/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																								
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	350	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	0.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	4,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<50	<50	<50	<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	6,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25
Benzene	1	<2.0	<1.0	<1.0	1.9	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	3.3	2.9	3.8	1.0
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	700	<2.0	5.8	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	0.3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Chloroethane	3,000	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<5	<5	<5
Chloroform	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Chloromethane	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	600	<2.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	5	<5.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5	<5	<5
Naphthalene	6	<5.0	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5	<5	90
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	1.2
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	0.7	<2.0	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Toluene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	3	<2.0	10.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	0.03	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Xylenes (total)	500	<2.0	6.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<3.0	<3.0	<2	<2	2.8	2.0	2.7	5.2	2.6
Total VOCs		ND	25.7	ND	3.2	1.4	ND	ND	ND	8.8	ND	ND	1.0	ND	ND	ND	ND	ND	ND	2.8	5.3	5.6	9.0	94.8

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

ND Constituent was not detected above the method detection limit.

NE Groundwater standard not established.

10.8 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-52, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-52 12/19/01	MWW-52 03/20/02	MWW-52 06/18/02	MWW-52 09/11/02	MWW-52 12/17/02	MWW-52 03/11/03	MWW-52 06/04/03	MWW-52 09/23/03	MWW-52 12/16/03	MWW-52 03/16/04	MWW-52 03/29/05	MWW-52 03/21/06	MWW-52 03/15/07	MWW-52 03/27/08	MWW-52 03/23/09	MWW-52 04/16/10	MWW-52 06/28/11	MWW-52 03/23/12	MWW-52 10/09/13	MWW-52 08/21/14	MWW-52 12/02/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																						
1,1,1,2-Tetrachloroethane	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	0.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	350	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	400	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	400	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	4,000	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<50	<50	<50	<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
4-Isopropyltoluene	25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	6,000	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25
Benzene	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Bromochloromethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Bromodichloromethane	0.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Carbon disulfide	700	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	0.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Chlorobenzene	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Chloroethane	3,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<5	<5	<5
Chloroform	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Chloromethane	3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Ethylbenzene	600	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Isopropylbenzene	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Methylene chloride	5	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5	<5
Naphthalene	6	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5	<5
n-Butylbenzene	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
n-Propylbenzene	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Styrene	70	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Tetrachloroethene	0.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Toluene	600	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Trichloroethene	3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	2,100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Vinyl chloride	0.03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Xylenes (total)	500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<3.0	<3.0	<2.0	<2	<2	<2	<2	<2	<2
Total VOCs		ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

ND Constituent was not detected above the method detection limit.

NE Groundwater standard not established.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-53, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-53 04/17/01	MWW-53 09/17/01	MWW53 12/19/01	MWW-53 03/19/02	MWW-53 06/18/02	MWW-53 09/10/02	MWW-53 12/16/02	MWW-53 03/10/03	MWW-53 06/04/03	MWW-53 09/23/03	MWW-53 12/16/03	MWW-53 03/16/04	MWW-53 03/28/05	MWW-53 03/21/06	MWW-53 03/14/07	MWW-53 03/26/08	MWW-53 03/23/09	MWW-53 04/15/10	MWW-53 06/28/11	MWW-53 03/22/12	MWW-53 10/08/13	MWW-53 08/21/14	MWW-53 12/02/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																								
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
1,1,1-Trichloroethane	200	<2.0	1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
1,1,2-Trichloroethane	0.6	<2.0	1.1	1.4	1.4	1.4	<1.0	1.4	1.4	1.0	< 1.00	<1.00	<1.00	1.3	1.24	<1.00	1.69	<2.0	<1.0	2.2	<2	<2	<5	<5
1,1-Dichloroethane	6	8.8	12.9	15.7	16.7	16.8	16.2	14.5	12.7	11.4	13.2	11.8	13.0	17.1	15.2	12.9	17.3	14	12	18	18	17	16	24
1,1-Dichloroethene	350	38.6	79.3	89	100	128	101	78.6	69.2	76.5	85.2	66.3	65.1	105	88.1	88.3	102	75	74	98	89	95	79	100
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
1,2-Dichloroethane	0.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
1,2-Dichloropropane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
2-Butanone (MEK)	4,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	< 25.0	<25.0	<25.0	< 25.0	<50.0	<50.0	<50.0	<20	<10	<20	<20	<20	<50	<50
2-Chlorotoluene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	< 5.00	< 5.00	<5.00	< 5.00	<50.0	<10.0	<10.0	<20	<1.0	<20	<20	<20	<50	<50
Acetone	6,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	< 25.0	<50.0	<25.0	< 25.0	<50.0	<50.0	<50.0	<50	<25	<50	<50	<50	<130	<130
Benzene	1	<2.0	<1.0	1.0	1.2	1.0	1.0	1.0	<1.0	<1.0	<1.00	1.0	<1.00	1.2	<1.00	<1.00	1.26	<2.0	<1.0	<2	<2	<2	<5	<5
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<4.0	<2.0	<2	<2	<4	<10	<10
Carbon tetrachloride	0.3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
Chloroethane	3,000	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<10	<25	<25
Chloroform	70	3.7	4.0	3.8	5.90	6.60	6.30	5.60	4.80	4.90	6.80	6.30	5.30	8.70	8.00	7.72	9.61	8.7	8.9	13	14	14	14	21
Chloromethane	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
cis-1,2-Dichloroethene	70	19	37.6	45.1	56.8	54.3	43.4	42.0	38.2	33.6	47.2	46	48.2	61	59	60.2	73.5	75	66	110	120	130	130	190
Ethylbenzene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
Isopropylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
Methylene chloride	5	<5.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	< 2.50	< 2.50	<2.50	< 2.50	< 5.00	<5.00	<5.00	<10	<5.0	<10	<10	<10	<25	<25
Naphthalene	6	<5.0	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	< 5.00	< 5.00	<5.00	< 5.00	< 5.00	<5.00	<5.00	<10	<5.0	<10	<10	<10	<25	<25
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
Tetrachloroethene	0.7	39.7	78.6	92	113	129	123	90.0	88.7	89.2	136	120	85.8	165	183	183	208	150	190	330	350	340	270	450
Toluene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
trans-1,2-Dichloroethene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	0.6	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
Trichloroethene	3	88.9	194	236	185	264	257	194	179	189	220	250	192	294	280	215	273	220	200	380	360	390	240	380
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	<1.00	<1.00	<2.0	<1.0	<2	<2	<2	<5	<5
Vinyl chloride	0.03	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	< 1.00	< 1.00	1.3	1.37	1.29	1.90	<2.0	1.7	2.4	3.0	2.6	<5	<5
Xylenes (total)	500	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.00	< 1.00	< 1.00	<1.00	<1.00	<3.00	<3.00	<4.0	<2.0	<4	<4	<4	<10	<10
Total VOCs		199	409	485	480	601	548	427	394	406	508	501	409	656	636	568	688	543	553	954	954	989	749	1,165

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

NE Groundwater standard not established.

88.9 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from MWW-57I, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	MWW-57I 04/20/01	MWW-57I 09/18/01	MWW-57I 12/21/01	MWW-57I 03/18/02	MWW-57I 06/17/02	MWW-57I 09/10/02	MWW-57I 12/16/02	MWW-57I 03/10/03	MWW-57I 06/03/03	MWW-57I 09/22/03	MWW-57I 12/15/03	MWW-57I 03/15/04	MWW-57I 09/23/04	MWW-57I 03/28/05	MWW-57I 03/23/06	MWW-57I 09/19/06	MWW-57I 03/13/07	MWW-57I 09/25/07	MWW-57I 03/26/08	MWW-57I 03/23/09	MWW-57I 04/15/10	MWW-57I 06/27/11	MWW-57I 03/21/12	MWW-57I 10/08/13	MWW-57I 08/20/14	MWW-57I 12/01/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																											
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	350	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	0.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	4,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<50	<50	<50	<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	NA	NA	NA
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	< 5.00	<5.0	<5.0	<5.0	<50	<5.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	6,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<25
Benzene	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	0.3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Chloroethane	3,000	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<5	<5	<5
Chloroform	70	<2.0	<1.0	<1.0	1.5	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.06	<1.0	1.36	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Chloromethane	3	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	5	<5.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	<2.5	< 2.50	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5	<5	<5
Naphthalene	6	<5.0	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	<5.0	< 5.00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	0.7	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Toluene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	3	<2.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	0.03	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
Xylenes (total)	500	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<3.0	<3.0	<2	<2	<2	<2	<2	<2	<2
Total VOCs		ND	1.2	ND	1.5	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	1.06	ND	1.36	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

ND Constituent was not detected above the method detection limit.

NE Groundwater standard not established.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from RW-1, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	RW-1 05/02/01	RW-1 09/21/01	RW-1 12/18/01	RW-1 03/19/02	RW-1 06/19/02	RW-1 09/12/02	RW-1 12/18/02	RW-1 03/12/03	RW-1 06/05/03	RW-1 09/24/03	RW-1 12/17/03	RW-1 03/17/04	RW-1 04/01/05	RW-1 03/23/06	RW-1 03/14/07	RW-1 03/27/08	RW-1 03/24/09	RW-1 04/15/10	RW-1 03/23/12	RW-1 10/10/13	RW-1 08/26/14	RW-1 12/15/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																							
1,1,1,2-Tetrachloroethane	1	<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	<1.0	<1.0	<1.0	<5.8	<20	<50	<50	<5	<5
1,1,1-Trichloroethane	200	1,150 D	1,720 D	2,040 D	410	455	925	538	948	830	464	638	1,370	319	1,320	1,550	347	910	790	650	200	<5	54
1,1,2,2-Tetrachloroethane	0.2	<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	<1.0	<1.0	<1.0	<5.2	<20	<50	<50	<5	<5
1,1,2-Trichloroethane	0.6	<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	<1.0	<1.0	<1.0	<10	<20	<50	<50	<5	5.9
1,1-Dichloroethane	6	220 D	3,010 D	1,540 D	523	289	435	464	507	420	323	358	376	127	140	142	308	140	120	99	93	100	65
1,1-Dichloroethene	350	670 D	3,260 D	3,260 D	835	567	1,060	750	1,170	1,110	490	926	770	172	412	326	454	230	190	170	100	140	110
1,2,4-Trimethylbenzene	400	2.6	42.2	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.4	<20	<50	<50	<5	<5
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.6	<20	<50	<50	<5	<5
1,2-Dichloroethane	0.4	<2.0	12.9	11.1	4.8	3.7	4.8	<10	6.4	4.1	3.4	4.5	3.7	2.8	945	<1.0	1.38	<6.2	<20	<50	<50	<5	<5
1,2-Dichloropropane	0.6	2.2	21.6	17.2	6.3	4.3	5.6	<10	6.7	<1.0	4.6	6.4	<1.0	3.9	<1.0	<1.0	<1.0	<7.2	<20	<50	<50	<5	<5
1,3,5-Trimethylbenzene	400	<2.0	9.8	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.6	<20	<50	<50	<5	<5
2-Butanone (MEK)	4,000	69.2	<25	<25	<50	<50	<50	<250	<25	<25	< 25.0	<25	<25	<25	<50	<50	<50	<12	<200	<500	<500	<50	<50
2-Chlorotoluene	100	<2.0	<1.0	2.6	2.1	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.4	<20	<50	<50	<5	<5
4-Isopropyltoluene	25	<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	<1.0	<1.0	<1.0	<6.4	<20	<50	NA	NA	NA
4-Methyl-2-pentanone	100	34.8	307	<10	10.0	<10	<10	<50	<5.0	<5.0	<5.0	<5.0	<5.00	<5.00	<50	<10.0	<10.0	<12	<200	<500	<500	<50	<50
Acetone	6,000	4,720 D	437	<25	<50	<50	<50	<250	<25	<25	65.6	<25	<25	<25	<50	<50	<50	<100	<500	<1,300	<1300	<130	<130
Benzene	1	2.9	19.1	15.4	6.3	4.4	5.7	<10	7.0	6.1	4.0	6.6	5.3	4.8	<1.0	3.36	3.96	<6.4	<20	<50	<50	<5	<5
Bromochloromethane	NE	<2.0	6.4	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.6	<20	<50	<50	<5	<5
Bromodichloromethane	0.6	<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	<1.0	<1.0	<1.0	<6.8	<20	<50	<50	<5	<5
Carbon disulfide	700	7.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<12	<40	<100	<100	<10	<10
Carbon tetrachloride	0.3	6.8	<1.0	65.3	11.6	13.0	20.0	<10	20.7	25.7	7.3	17.5	35.9	22	30.5	37.4	3.50	17	<20	<50	<50	<5	<5
Chlorobenzene	50	<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	<1.0	<1.0	<1.0	<6.8	<20	<50	<50	<5	<5
Chloroethane	3,000	45.7	<1.0	67.9	13.9	19.2	22.3	26J	36	23.1	<1.0	25.0	30.6	21.6	9.62	8.74	40.7	22	<20	<50	<250	<25	<25
Chloroform	70	16.6	11.5	85.9	29.3	30.1	41.2	46	57.8	42.0	26.1	37.1	38.6	30.1	26.9	25.1	10.2	24	<20	<50	<50	<5	<5
Chloromethane	3	<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	<1.0	<1.0	<1.0	<5.6	<20	<50	<50	<5	<5
cis-1,2-Dichloroethene	70	4,020 D	9270 D	4,980 D	2,300	1,490	2,390	3,060	2,760	1,960	1,980	1,650	1,920	645	<1.0	1,780	1,530	3,700	2,800	4,200	3,000	910	740
Dichlorodifluoromethane	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	<1.0	1.60	<6.0	<20	<50	<50	<5	<5
Ethylbenzene	600	21.4	174	17.2	11.1	<1.0	2.6	<10	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.0	<20	<50	<50	<5	11
Isopropylbenzene	70	<2.0	4.2	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.4	<20	<50	<50	<5	<5
Methylene chloride	5	360 D	800 D	910 D	184	137	200	233	313	117	72.4	79.6	65.8	55	28.6	11.4	<5.00	<20	<100	<250	<250	<25	<25
Naphthalene	6	<5.0	139	<2.5	<2.5	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.4	<100	<250	<250	<25	<25
n-Butylbenzene	70	<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	<1.0	<1.0	<1.0	<6.6	<20	<50	<50	<5	<5
n-Propylbenzene	70	<2.0	3.7	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.8	<20	<50	<50	<5	<5
sec-Butylbenzene	70	<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	<1.0	<1.0	<1.0	<5.8	<20	<50	<50	<5	<5
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<7.2	<20	<50	<50	<5	<5
Tetrachloroethene	0.7	330 D	101	3,640 D	727	594	1,540	690	1,600	1,420	354	1,300	1,530	296	1,920	2,030	817	1,200	1,000	1,000	480	210	270
Toluene	600	395 D	3,580 D	500 D	188	12.2	27.2	49	3.4	6.0	6.7	8.8	2.7	<1.0	<1.0	1.05	8.12	8.0	<20	<50	<50	<5	8.7
trans-1,2-Dichloroethene	100	30.6	58.7	27.4	9.6	7.5	8.4	<10	15.8	<1.0	11.1	9.5	9.1	10	7.83	5.18	5.46	8.7	<20	<50	<50	5.5	<5
Trichloroethene	3	655 D	194	4,280 D	714	866	1,880	620	1,390	1,570	281	1,350	1,290	402	1,450	958	560	370	310	340	160	280	160
Trichlorofluoromethane	2,100	<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	<1.0	<1.0	<1.0	<5.8	<20	<50	<50	29	<5
Vinyl chloride	0.03	525 D	3,630 D	3,020 D	697	516	840	627	970	600	493	584	364	113	192	113	78.2	260	240	230	100	140	100
Xylenes (total)	500	137	1,240 D	189	79.1	9.1	28.1	35	8.4	5.8	11	10.3	<1.0	2.8	<1.0	<3.0	<3.00	<17	<40	<100	<100	<10	17
Total VOCs		13,422	28,052	24,669	6,762	5,018	9,436	7,138	9,820	8,141	4,597	7,011	7,812	2,227	6,482	6,991	4,169	6,890	5,450	6,689	4,133	1,815	1,542

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

D Constituent concentration was quantitated using a secondary dilution.

NE Groundwater standard not established.

665 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from RW-2, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	RW-2 05/02/01	RW-2 09/21/01	RW-2 12/19/01	RW-2 03/19/02	RW-2 06/19/02	RW-2 09/12/02	RW-2 12/18/02	RW-2 03/12/03	RW-2 06/05/03	RW-2 12/17/03	RW-2 03/15/04	RW-2 04/01/05	RW-2 03/24/06	RW-2 03/14/07	RW-2 03/26/08	RW-2 03/24/09	RW-2 04/15/10	RW-2 06/29/11	RW-2 03/22/12	RW-2 10/10/13	RW-2 08/22/14	RW-2 12/02/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																							
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
1,1,1-Trichloroethane	200	61.1	7	3.5	1.8	1.5	1.6	<1.0	<1.0	1.5	<1.0	<1.0	1.8	13.3	44.7	<1.0	<2.0	10	22	13	2.9	<2	<1.0
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
1,1-Dichloroethane	6	230 D	67.1	37.7	21.5	21.2	26.1	45.5	20.9	24.0	7.5	19	19.9	46.1	55.6	23.1	14	33	31	26	21	16	9.5
1,1-Dichloroethene	350	700 D	176	111	40.1	62.2	46.5	116	32	60.5	16.4	36.4	48	38.5	54.6	38.3	22	37	20	29	35	<2	6.6
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
1,2-Dichloroethane	0.4	3.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
1,2-Dichloropropane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
2-Butanone (MEK)	4,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<50	<50	<50	<20	<10	<50	<20	<20	<20	<50
2-Chlorotoluene	140	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	NA	NA	<1.0
4-Methyl-2-pentanone	100	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	< 5.0	<5.0	<5.0	<50	<10	<10	<20	<10	<50	<20	<20	<20	<10
Acetone	6,000	<50	<25	<25	<50	<50	<50	<25	<25	<25	<25	<25	<25	<50	<50	<50	<50	<25	<130	<50	<50	<50	<50
Benzene	1	5.0	2.1	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<2.0	<10	<4	<4	<4	<1.0
Carbon tetrachloride	0.3	3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
Chloroethane	3,000	45.7	18.4	4.7	<1.0	<1.0	<1.0	4.4J	1.4	1.0	<1.0	<1.0	<1.0	1.75	8.89	<1.0	<2.0	10	<5	6.3	<10	<10	<1.0
Chloroform	70	20.3	3.6	3.8	3.9	4.0	4.3	5.1	3.2	3.3	1.4	2.9	2.6	4.41	4.39	3.90	2.5	3.9	<5	3.2	3.7	<2	1.60
Chloromethane	2.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
cis-1,2-Dichloroethene	70	1,250 D	388 D	260 D	187	183	208	246	156	153	82.2	176	120	379	441	230	170	340	300	240	190	140	120
Dichlorodifluoromethane	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	<1.0	1.42	<2.0	<1.0	<5	<2	<2	<2	<1.0
Ethylbenzene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
Isopropylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
Methylene chloride	5	6.8	<2.0	<2.0	<2.0	<5.0	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	15.8	28.4	<5.0	<10	7.4	<25	<10	<10	<10	<5.0
Naphthalene	6	<5.0	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<10	<25	<10	<10	<10	<5.0
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
Tetrachloroethene	0.7	690 D	159	167	84.6	89.8J	94.4	129	52	81.9	47.1	79.8	88	161	189	140	91	170	96	170	170	120	59
Toluene	600	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	2.08	<1.0	<2.0	6.8	<5	<2	<2	<2	<1.0
trans-1,2-Dichloroethene	100	10.2	5.1	1.8	<1.0	<1.0	<1.0	1.8	1.0	1.0	<1.0	1.1	<1.0	1.69	1.61	<1.0	<2.0	1.3	<5	<2	<2	<2	<1.0
Trichloroethene	3	900 D	254 D	264 D	158	179J	183	184	106	159	77.8	130	145	286	378	216	160	230	170	290	260	180	110
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<5	<2	<2	<2	<1.0
Vinyl chloride	0.03	455 D	135	38.5	9.2	11.2	9.7	31	5.7	7.6	4.5	9.7	10	20.5	46.3	7.32	4.6	32	6.6	4.0	3.5	3.1	<1.0
Xylenes (total)	500	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.15	<3.0	<3.0	<4.0	<2.0	<10	<4	<4	<4	<2.0
Total VOCs		4,381	1,215	1,194	506	552	574	764	378	493	238	455	435	974	1,255	660	464	881	646	782	686	459	307

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

D Constituent concentration was quantitated using a secondary dilution.

NE Groundwater standard not established.

135 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from RW-3, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	RW-3 05/02/01	RW-3 09/21/01	RW-3 12/18/01	RW-3 03/19/02	RW-3 06/19/02	RW-3 09/12/02	RW-3 12/18/02	RW-3 03/12/03	RW-3 06/05/03	RW-3 09/24/03	RW-3 12/17/03	RW-3 03/17/04	RW-3 03/29/05	RW-3 04/10/06
Volatile Organic Compounds (USEPA Method 8260) µg/L															
Acetone	6,000	<50	<25	<25	1,000	<50	<50	<250	2,180	49.2	< 25.0	<250.	<25.0	<25.0	<25.0
Benzene	1	6.3	5.8	<1.0	<1.0	5.6	7.2	<10	3.6	3.0	2.7	<1.00	<1.00	1.8	<1.00
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
2-Butanone (MEK)	4,000	<50	<25	<25	<50	<50	<50	<250	<25	<25	< 25.0	<25.0	<25.0	<25.0	<25.0
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
Carbon tetrachloride	0.3	3.0	9.8	<1.0	3.8	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
Chloroethane	3,000	25.2	41.9	15.1	1.0	19.6	19.6	14J	5.1	4.5	< 1.00	<1.00	<1.00	2.2	<1.00
Chloroform	70	108	69.9	4.1	8.5	46.5	39.3	47	28.7	23.8	24.6	<1.00	1.3	11.9	22.5
Chloromethane	2.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
2-Chlorotoluene	100	2.8	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	17	9.0	<1.00	<1.00	14.5	<1.00
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
1,1-Dichloroethane	6	650 D	420 D	97.5	12.7	283 J	355	298	194	231	252	35.6	16.8	133	249.2
1,2-Dichloroethane	0.4	8.0	5.7	<1.0	<1.0	5.2	5.6	<10	3.2	2.7	2.8	<1.00	<1.00	2.0	<1.01
1,1-Dichloroethene	350	1,780 D	1,320 D	702 D	34.1	453 J	935	607	376	701	587	46	54.7	276	497.3
cis-1,2-Dichloroethene	70	4,100 D	2,620 D	344 D	91.6	1,830 J	2,200	3,240	2,940	6,040	2970	101	153	1,840	3527
trans-1,2-Dichloroethene	100	21.6	29.7	2	<1.0	14.7	13.1	<10	9.7	<1.0	15	<1.00	<1.00	6.8	<1.00
1,2-Dichloropropane	0.6	<2.0	<1.0	<1.0	<1.0	4.8	5.3	<10	2.7	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
Ethylbenzene	600	<2.0	<1.0	<1.0	<1.0	<1.0J	<1.0	<10	<1.0	<1.0	< 1.0	<1.00	<1.00	<1.00	<1.00
Isopropylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	1.8	< 1.00	<1.00	<1.00	<1.00	<1.00
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
4-Methyl-2-pentanone	100	<10	<10	<10	30.5	<10	<10	<50	<5.0	<5.0	< 5.00	< 5.00	<5.00	<5.00	<5.00
Methylene chloride	5	154	123	13.6	<2.0	19.7 J	16.9	45	11.1	3.5	5.7	< 2.50	<2.50	<2.50	<2.50
Naphthalene	6	<5.0	<2.5	<2.5	<2.5	<5.0 J	<5.0	<25	<5.0	<5.0	< 5.00	<5.00	<5.00	<5.00	<5.00
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
Tetrachloroethene	0.7	750 D	1,740 D	195	19.5	106 J	615	1,780	19.8	111	913	27.1	40	179	318
Toluene	600	36.7	<1.0	<1.0	<1.0	<1.0J	<1.0	<10	116 J	2.0	1.8	<1.00	<1.00	<1.00	<1.00
1,1,1-Trichloroethane	200	415 D	195	464 D	31.7	115 J	95.2	256	99.6	348	308	54.1	19.4	<1.00	20.4
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
Trichloroethene	3	2,660 D	2,320 D	288 D	59.7	654J	1,210	1,180	61.4	151	3100	93.7	195	1,680	3165
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
1,2,4-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.0	<1.00	<1.00	<1.00	<1.00
1,3,5-Trimethylbenzene	400	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00
Vinyl chloride	0.03	850 D	985 D	360 D	18.2	315 J	565	202	244	303	307	2.6	5.7	328	650.3
Xylenes (total)	500	54.1	10.8	<1.0	<1.0	2 J	5.2	<10	6.3	7.0	3.3	<1.00	<1.0	5.4	<1.1
Total VOCs		11,625	9,897	2,485	1,311	3,874	6,087	7,669	6,301	8,000	8,504	360	486	4,481	8,450

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

D Constituent concentration was quantitated using a secondary dilution.

NE Groundwater standard not established.

415 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

J Constituent concentration detected is between the method detection limit and reporting limit and is qualified as estimated.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from RW-4, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	RW-4 05/02/01	RW-4 09/21/01	RW-4 12/18/01	RW-4 03/19/02	RW-4 06/19/02	RW-4 09/12/02	RW-4 12/18/02	RW-4 03/12/03	RW-4 06/05/03	RW-4 12/17/03	RW-4 03/17/04	RW-4 03/29/05	RW-4 03/23/06	RW-4 03/14/07	RW-4 03/27/08	RW-4 03/24/09	RW-4 04/15/10	RW-4 06/29/11	RW-4 03/22/12	RW-4 10/10/13	RW-4 08/26/14	RW-4 12/15/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																							
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.8	<20	<1	<20	<20	<2	<2
1,1,1-Trichloroethane	200	24.3	960 D	400 D	431	1,050	1,730	280	405	319	164	320	158	84.9	143	217	250	45	11	190	46	<2	110
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.2	<20	<1	<20	<20	<2	<2
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<20	<1	<20	<20	<2	22
1,1-Dichloroethane	6	20.6	1,680 D	110	133	946	1,210	145	280	279	131	236	262	58.8	146	120	79	120	5.4	120	100	17	79
1,1-Dichloroethene	350	7.2	2,700 D	250 D	217	1,540	2,360	190	535	445	108	264	200	43.3	189	163	80	<20	4.9	150	110	32	120
1,2,4-Trimethylbenzene	400	10.2	8.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	<1.0	1.3	<1.0	<1.0	2.67	<1.0	<5.4	<20	<1	<20	<20	<2	<2
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.6	<20	<1	<20	<20	<2	<2
1,2-Dichloroethane	0.4	<2.0	8.0	<1.0	<1.0	10.6	13.8	1.2	2.1	<1.0	<1.0	<1.0	3.2	<1.0	<1.0	<1.0	<6.2	<20	<1	<20	<20	<2	<2
1,2-Dichloropropane	0.6	<2.0	<1.0	<1.0	1.3	12.9	16.5	1.5	<1.0	<1.0	1.7	<1.0	3.8	<1.0	<1.0	<1.0	<7.2	<20	<1	<20	<20	<2	<2
1,3,5-Trimethylbenzene	400	10.9	2.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.6	<20	<1	<20	<20	<2	<2
2-Butanone (MEK)	4,000	170	<25	<25	79.6	<50	<50	<25	<25	509	<25	<25	<25	<50	<50	<50	<12	<200	<10	<200	<200	<20	<20
2-Chlorotoluene	100	<2.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	3.6	1.0	2.4	4.7	<1.0	3.45	<1.0	<6.4	<20	<1	<20	<20	<2	<2
4-Isopropyltoluene	25	3.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.4	<20	<1	<20	NA	NA	NA
4-Methyl-2-pentanone	100	<10	80	<10	<10	<10	<10	<5.0	<5.0	9.3	<5.0	<5.0	<5.0	<50	<10	<10	<12	<200	<10	<200	<200	<20	<20
Acetone	6,000	3,170 D	41.6	<25	2,290	<50	<50	<25	538	227	<25	96.9	<25	<50	<50	119	2,900	<500	<25	<500	<500	<50	30
Benzene	1	<2.0	12.1	<1.0	1.0	9.3	12.7	<1.0	2.2	1.7	1.6	2.3	3.5	<1.0	1.75	1.32	<6.4	<20	<1	<20	<20	<2	<2
Bromochloromethane	NE	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.6	<20	<1	<20	<20	<2	<2
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.8	<20	<1	<20	<20	<2	<2
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<12	<40	<2	<40	40	<4	<4
Carbon tetrachloride	0.3	<2.0	<1.0	<1.0	<1.0	2.1	13.4	1.5	<1.0	<1.0	3.3	2.4	<1.0	<1.0	<1.0	<1.0	<5.4	<20	<1	<20	<20	<2	19
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.8	<20	<1	<20	<20	<2	<2
Chloroethane	3,000	<2.0	<1.0	3.7	4.9	30.4	47.1	2.3J	<1.0	17.3	9.2	14.1	35	6.76	7.96	20.0	23.0	<20	<1	74	<100	<10	<10
Chloroform	70	<2.0	25.5	2.4	10.1	63.5	97.1	2.7	7.7	4.8	6.4	6.5	8.0	1.95	3.02	3.73	6.3	<20	<1	<20	<20	<2	4.2
Chloromethane	2.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.6	<20	<1	<20	<20	<2	<2
cis-1,2-Dichloroethene	70	1,780 D	7,310 D	1,510 D	1,820	5,360	6,370	887	5,750	2,340	621	1,500	1,260	1,450	2,530	1,550	2,000	1,500	66	1,800	1,800	290	1,800
Ethylbenzene	600	8.8	74.1	<1.0	1.4	<1.0	1.1	6.1	1.2	14.7	<1.0	2.3	1.9	4.22	4.43	<1.0	26	130	<1	<20	<20	<2	2.3
Isopropylbenzene	70	<2.0	3.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.4	<20	<1	<20	<20	<2	<2
Methylene chloride	5	<5.0	6.2	6.3	64.0	107	268	88.7	10.4	155	39.9	30.8	4.7	<5.0	<5.0	5.09	<20	<100	<5	<100	<100	<10	<10
Naphthalene	6	13.5	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.4	<100	<5	<100	<100	<10	<10
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.6	<20	<1	<20	<20	<2	<2
n-Propylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.8	<20	<1	<20	<20	<2	<2
sec-Bulylbenzene	70	2.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.8	<20	<1	<20	<20	<2	<2
Styrene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<1.0	1.43	<1.0	<1.0	<7.2	<20	<1	<20	<20	<2	<2
Tetrachloroethene	0.7	470 D	1,730 D	1,530 D	199	1,220	2,880	196	14.6	62.2	188	284	200	136	285	356	23	<20	19	280	710	250	1,200
Toluene	600	21.4	1,380 D	9.2	24.2	1.9	21.9	124	108	185	1.2	6.0	10	13.8	49.0	2.09	170	840	<1	120	<20	<2	<2
trans-1,2-Dichloroethene	100	14.9	65.4	8	7.8	21.6	30.5	2.3	7.6	6.4	9.9	4.9	5.5	8.92	7.08	3.96	6.7	<20	<1	<20	35	<2	4.6
Trichloroethene	3	1,160 D	4,900 D	360 D	226	1,620	3,480	115	73.8	119	154	236	324	76.6	290	270	19	<20	22	1,100	830	160	520
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.8	<20	<1	<20	<20	<2	<2
Vinyl chloride	0.03	10.9	2,230 D	44.2	109	638	1,260	26.3	365	409	190	298	192	132	416	17.8	510	790	4.8	230	72	8.6	120
Xylenes (total)	500	74.9	419	6.7	21.2	<1.0	45.8	29.8	14.8	81.8	<1.0	15.7	11	25.4	27.1	<3.00	120	550	<2	<40	<40	<4	<4
Total VOCs		6,973	23,629	4,241	5,641	12,633	19,861	2,099	8,115	5,198	1,630	3,324	2,687	2,044	4,105	2,849	6,219	3,975	133	4,064	3,743	758	4,031

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

D Constituent concentration was quantitated using a secondary dilution.

NE Groundwater standard not established.

415 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from RW-5, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	RW-5 05/02/01	RW-5 09/21/01	RW-5 12/18/01	RW-5 03/19/02	RW-5 06/19/02	RW-5 09/12/02	RW-5 12/18/02	RW-5 03/12/03	RW-5 06/05/03	RW-5 03/17/04	RW-5 03/29/05	RW-5 03/22/06	RW-5 03/14/07	RW-5 03/27/08	RW-5 03/24/09	RW-5 04/15/10	RW-5 06/29/11	RW-5 03/22/12	RW-5 10/09/13	RW-5 08/26/14	RW-5 12/15/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																						
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<10	<2	<1	<5	<5
1,1,1-Trichloroethane	200	19,900 D	55,800 D	14,600 D	12,700	48,200	42,400	9,660	9,750	496	190	279	281	331	13.6	28	12	42	27	26	<5	<5
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<10	<2	<1	<5	<5
1,1,2-Trichloroethane	0.6	<2.0	10	<1.0	<1.0	<1.0	<1.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<10	<2	<1	<5	<5
1,1-Dichloroethane	6	6,050 D	5,870 D	3,510 D	1,710	4,560	6,640	6,540	6,570	2,470	570	1,500	825	1,060	407	130	65	110	38	26	44	27
1,1-Dichloroethene	350	11,400 D	26,800 D	8,400 D	5,180	12,200	15,300	3,410	4,030	1,290	438	345	301	460	165	28	11	52	11	8.3	20	<5
1,2,4-Trimethylbenzene	400	941	330 D	102	150	300	407	<100	83.6	30.6	17.6	51	7.83	146	85.7	39	48	24	4.0	<1	9.7	50
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	1.1	1.8	2.6	<100	<1.0	<1.0	<1.0	<1.0	<1.0	1.06	<1.0	<10	<10	<10	<2	<1	<5	<5
1,2-Dichloroethane	0.4	64	163	36	31.9	86.7	100	<100	28.2	6.2	2.9	10	<1.0	21.3	8.49	<10	<10	<10	<2	<1	<5	<5
1,2-Dichloropropane	0.6	69	<1.0	59.2	48.4	134	146	<100	38.9	10.9	5.4	<1.0	<1.0	23.7	<1.0	<10	<10	<10	<2	<1	<5	<5
1,3,5-Trimethylbenzene	400	290	108	33.2	49.6	88.4	140	<100	29.4	10.9	7.2	23	4.71	56.4	33.0	13	16	10	2.2	<1	<5	16
2-Butanone (MEK)	4,000	8,150	3,080 D	<25	772	<2,500	5,290	<2,500	<25	<25	<25	401	<50	90.3	<1.0	<100	<100	<100	<20	<10	<50	<50
2-Chlorotoluene	100	<2.0	<1.0	<1.0	14.9	<1.0	<1.0	<100	<1.0	4.4	<1.0	<1.0	17.5	<1.0	<1.0	<10	<10	<10	<2	<1	<5	<5
4-Isopropyltoluene	25	38	4.5	<1.0	2.2 J	3.5	4.9	<100	1.4	<1.0	<1.0	1.3	<1.0	4.26	1.83	<10	<10	<10	<2	NA	NA	NA
4-Methyl-2-pentanone	100	4,630	6,580 D	992	858	2,640	3,370	1,570	890	91.8	10.8	426	57.2	360	55.4	<100	<100	<100	<50	<10	<50	<50
Acetone	6,000	46,100 D	53,900 D	<25	6,880	27,400	34,500	23,000	13,300	<25	102	2,010	113	<2500	<50	<250	<250	270	<50	<25	<130	160
Benzene	1	38	163	48.1	40.4	103	115	<100	31.7	9.3	4.5	12	5.76	31.6	15.3	<10	<10	<10	<2	<1	<5	8.7
Bromochloromethane	NE	<2.0	121	28.5	52.2	54.1	<1.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<50	<10	<10	<10	<2	<1	<5	<5
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<10	<2	<1	<5	<5
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<20	<20	<4	<2	<10	<10
Carbon tetrachloride	0.3	<2.0	7.5	<1.0	<1.0	<1.0	<1.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<10	4.0	<1	<5	<5
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	1.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<10	<2	<1	<5	<5
Chloroethane	3,000	573	660 D	166	87.6	325	285	<100	103	<1.0	95.9	1,020	389	2,100	1,330	210	320	220	200	16	88	260
Chloroform	70	<2.0	52	18.4	25.4	56.5	40.3	<100	5.2	<1.0	<1.0	<1.0	2.95	<1.0	<1.0	<10	<10	<10	<2	<1	<5	<5
Chloromethane	2.6	<2.0	16.2	2.8	<1.0	1.8J	4.8	<100	2.0	<1.0	<1.0	5.6	<1.0	<1.0	<1.0	<10	<10	<10	<2	<1	<5	<5
cis-1,2-Dichloroethene	70	46,400 D	37,100 D	18,600 D	17,200	39,000	46,300	32,400	18,000	7,880	2040	1,940	3,030	2,120	470	740	270	700	130	13	57	36
Ethylbenzene	600	6,200 D	3,300 D	860 D	844	2,680	3,290	620	703	192	64.6	383	29.7	813	557	170	260	150	12	<1	53	280
Isopropylbenzene	70	83	36.8	12.4	16.1	29.2	45.2	<100	7.7	3.0	1.5	4.4	3.72	16.4	9.18	<10	<10	<10	<2	<1	<5	6.7
Methylene chloride	5	21,000 D	86,400 D	12,900 D	7,910	23,700	30,800	15,500	10,100	963	50.1	1,160	555	1,100	288	<50	<50	51	<10	<5	<25	<25
Naphthalene	6	313	156	40.5	70.1	78.0	162	<250	22.5	11.5	10.9	20	9.02	55.5	23.5	<50	<50	<50	<10	<5	<25	36
n-Butylbenzene	70	<2.0	<1.0	<1.0	1.8	5.7	<1.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	7.22	3.74	<10	<10	<10	<2	<1	<5	<5
n-Propylbenzene	70	97	39	11.7	14.9	26.5	46.9	<100	6.9	<1.0	<1.0	4.1	<1.0	14.3	9.93	<10	<10	<10	<2	<1	<5	5.5
sec-Butylbenzene	70	<2.0	<1.0	<1.0	1.6	2.5	4.2	<100	<1.0	<1.0	<1.0	<1.0	<1.0	3.36	2.52	<10	<10	<10	<2	<1	<5	<5
Styrene	70	276	8.2	<1.0	<1.0	<1.0	<1.0	<100	<1.0	16	<1.0	<1.0	6.5	<1.0	<1.0	<10	<10	<10	<2	<1	<5	<5
tert-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	1.4	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<10	<2	<1	<5	<5
Tetrachloroethene	0.7	5,650 D	11,500 D	1,950 D	1,410	1,340	310	<100	11	3.2	30.5	3.9	119	28.6	7.18	<10	<10	<10	16	1.2	<5	<5
Toluene	600	50,500 D	<1.0	12,900 D	11,800	31,500	37,600	10,500	8,900	2,410	556	3,120	920	8,750	5,790	1,200	1,700	1,700	160	<1	420	1,900
trans-1,2-Dichloroethene	100	149	<1.0	48.2	63.2	165	129	<100	<1.0	<1.0	4.7	<1.0	35.3	12.9	5.99	14	14	<10	2.4	<1	<5	7.5
Trichloroethene	3	1,590	17,400 D	1,420 D	596	675	458	<100	12.1	2.3	11.8	4.7	804	20.4	9.18	<10	<10	11	24	6.4	<5	<5
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<10	<2	<1	<5	<5
Vinyl chloride	0.03	3,300 D	<1.0	4,240 D	2,300	7,950	9,030	1,610	2,960	2,190	1160	1,770	879	2,570	890	810	350	280	24	<1	85	38
Xylenes (total)	500	33,200 D	18,000 D	5,050 D	5,280	15,100	18,500	3,870	3,850	1,090	422	2,470	448	5,610	3,440	1,100	1,500	970	160	<2	320	1,300
Total VOCs		267,001	327,605	86,029	76,111	218,407	255,423	108,680	79,437	19,181	5,796	16,999	8,844	25,807	13,622	4,482	4,566	4,590	815	96.9	1,097	4,131

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

D Constituent concentration was quantitated using a secondary dilution.

NE Groundwater standard not established.

415 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from RW-6, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	RW-6 05/02/01	RW-6 09/21/01	RW-6 12/20/01	RW-6 03/19/02	RW-6 06/19/02	RW-6 09/12/02	RW-6 12/18/02	RW-6 03/12/03	RW-6 06/05/03	RW-6 09/24/03	RW-6 12/17/03	RW-6 04/01/05	RW-6 03/22/06	RW-6 03/14/07	RW-6 03/27/08	RW-6 03/24/09	RW-6 04/15/10	RW-6 06/28/11	RW-6 03/22/12	RW-6 10/10/13	RW-6 NS	RW-6 12/15/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																							
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<100	<1.0	<1.0	<1.0	<100	<1.0	<1.0	1.3	<1.00	<1.00	<1.00	<1.00	<1.00	<29	<250	<5	<50	<250	NS	<250
1,1,1-Trichloroethane	200	7,000 D	39,400 D	89,500 D	91,500	84,800	87,800	59,600	54,000	43,300	37400	<1.00	8,300	9,610	204	26.4	1,500	3,000	<5	76	<250	NS	<250
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<100	<1.0	<1.0	<1.0	<100	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<26	<250	<5	<50	<250	NS	<250
1,1,2-Trichloroethane	0.6	<2.0	6.6	<100	9.0	10.0	10.3	<100	<1.0	5.2	6.6	<1.00	<1.00	<1.00	<1.00	<1.00	<51	<250	<5	<50	<250	NS	<250
1,1-Dichloroethane	6	16,900 D	6,260 D	12,300	3,820	5,030	7,850	9,290	14,000	11,200	14,400	17,200	11,700	3,870	2,560	282	4,000	7,400	13	1,500	720	NS	<250
1,1-Dichloroethene	350	9,050 D	17,900 D	30,200 D	29,400	20,300	31,800	19,600	<1.0	12,900	15,700	<1.00	4,460	1,360	2,020	319	2,400	4,700	<5	710	1,300	NS	<250
1,2,4-Trimethylbenzene	400	96	169	670	466	381	450	160	235	157	236	160	78	13.6	181	26.6	130	<250	<5	<50	440	NS	<250
1,2-Dichlorobenzene	20	<2.0	<1.0	<100	2.3	2.1	2.3	<100	<1.0	<1.0	1.4	<1.00	<1.00	<1.00	<1.00	<1.00	<33	<250	<5	<50	<250	NS	<250
1,2-Dichloroethane	0.4	98	106	390	143	158	198	140	118	<1.0	139	67.4	26	<1.00	70.1	7.24	39	<250	<5	<50	<250	NS	<250
1,2-Dichloropropane	0.6	94	<1.0	420	172	203	245	140	137	102	150	<1.00	36	26.2	60.4	<1.00	42	<250	<5	<50	<250	NS	<250
1,3,5-Trimethylbenzene	400	27	52.4	<100	127	120	143	<100	68.4	43.8	83.8	61.2	29	6.63	59.5	9.44	49	<250	<5	<50	<250	NS	<250
2-Butanone (MEK)	4,000	4,780	488 D	17,200	830	12,700	9,060	<2,500	<25	<25	11,300	<25.0	<25.0	<50.0	190	<50.0	1,800	5,700	56	1,400	9,300	NS	<250
2-Chlorotoluene	100	<2.0	<1.0	<100	<1.0	<1.0	<1.0	<100	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<32	<250	<5	<50	<250	NS	<250
4-Chlorotoluene	24	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.2	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<33	<250	<5	<50	<250	NS	<250
4-Isopropyltoluene	25	<2.0	2.1	<100	4.4 J	4.5	4.7	<100	2.3	1.9	2.4	<1.00	1.0	<1.00	3.59	<1.00	<32	<250	<5	<50	NA	NS	NA
4-Methyl-2-pentanone	100	2,290	3,610 D	13,000	5,460	6,060	6,790	3,050	3,180	493	5080	< 5.00	851	1,680	3,570	174	1,300	4,600	77	760	4,700	NS	<250
Acetone	6,000	18,000 D	21,100 D	50,600 D	49,900	47,300	49,700	<2500	28,800	<25	49,300	<250	6,680	19,900	36,900	<50	12,000	32,000	740	8,500	44,000	NS	44,000
Benzene	1	118	115	400	145	194	197	130	124	97.9	134	91.1	45	22.5	86.8	7.72	52	<250	<5	<50	<250	NS	<250
Bromochloromethane	NE	<2.0	<1.0	880	978	93.9	<1.0	<100	<1.0	<1.0	169	<1.00	38	<1.00	<1.00	<1.00	<33	<250	<5	<50	<250	NS	<250
Bromodichloromethane	0.6	<2.0	<1.0	<100	<1.0	<1.0	<1.0	<100	<1.0	<1.0	1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<34	<250	<5	<50	<250	NS	<250
Carbon disulfide	700	<2.0	<1.0	<100	<1.0	<1.0	1.2	<100	<1.0	<1.0	1.8	<1.00	<1.00	<1.00	<1.00	<1.00	<60	<500	<10	<100	<250	NS	<250
Carbon tetrachloride	0.3	<2.0	<1.0	<100	<1.0	<1.0	<1.0	<100	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<27	<250	<5	<50	<250	NS	<250
Chlorobenzene	50	<2.0	<1.0	<100	<1.0	<1.0	2.9	<100	<1.0	<1.0	1.9	<1.00	<1.00	<1.00	<1.00	<1.00	<34	<250	<5	<50	<250	NS	<250
Chloroethane	3,000	5,400 D	450 D	1,000	296	388	353	320J	275	505	410	370	964	343	4,600	99.7	3,000	3,200	24	6,400	11,000	NS	<1300
Chloroform	70	<2.0	22.8	<100	38.2	51.7	60.5	<100	34.9	23.4	25.3	5.8	1.2	2.73	<1.00	<1.00	<29	<250	<5	<50	<250	NS	<250
Chloromethane	2.6	20	16.6	<100	9.5	13.0J	15.1	<100	6.8	6.9	18.4	23	9.3	2.01	<1.00	<1.00	<28	<250	<5	<50	<250	NS	<250
cis-1,2-Dichloroethene	70	14,600 D	25,800 D	59,000 D	70,500	68,800	78,900	54,100	60,000	38,900	32,300	<1.00	13,500	8,900	2,820	2,310	9,500	15,000	22	3,800	2,600	NS	<250
Ethylbenzene	600	1,230	1,940 D	8,540	4,450	4,450	4,630	2,080	2,300	1,580	2,300	965	938	120	1,490	223	1,000	1,600	7.8	400	<250	NS	<250
Isopropylbenzene	70	<2.0	18.6	260	43.1	40.2	45.3	<100	21.1	15.7	25.2	16.5	7.4	3.87	19.3	2.65	<27	<250	<5	<50	<250	NS	<250
Methylene chloride	5	30,200 D	70,300 D	90,300 D	78,500	78,400	109,000	64,200	59,500	38,800	66,800	33700	12,300	8,070	13,800	29.0	8,200	20,000	25	4,300	<2500	NS	<2500
Naphthalene	6	58	97.9	530	169	113	157	<250	74.2	53.1	86.5	46.2	26	9.02	47.3	11.1	29	<1,300	<25	<250	<1300	NS	<1300
n-Butylbenzene	70	<2.0	<1.0	<100	<1.0	7.2	<1.0	<100	<1.0	2.6	< 1.00	<1.00	1.4	<1.00	<1.00	1.73	<33	<250	<5	<50	<250	NS	<250
n-Propylbenzene	70	<2.0	19.5	<100	42.3	40.9	46.2	<100	21.3	11.7	24.3	12.8	5.5	<1.00	17.5	2.89	<34	<250	<5	<50	<250	NS	<250
sec-Butylbenzene	70	<2.0	<1.0	<100	<1.0	3.3	3.9	<100	<1.0	<1.0	1.8	<1.00	<1.00	13.6	2.93	<1.00	<29	<250	<5	<50	<250	NS	<250
Styrene	70	39	9.4	590	22.8	108	<1.0	<100	<1.0	<1.0	199	<1.00	<1.00	11.5	<1.00	<1.00	<36	<250	<5	<50	<250	NS	<250
tert-Butylbenzene	70	<2.0	<1.0	<100	<1.0	<1.0	1.3	<100	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<30	<250	<5	<50	<250	NS	<250
Tetrachloroethene	0.7	617	7,840 D	10,200 D	10,700	1,970	7,080	2,230	645	390	5280	130	508	480	951	4.46	48	<250	<5	<50	<250	NS	<250
Toluene	600	30,800 D	35,300 D	68,300 D	70,000	54,100	71,800	35,500	33,800	28,800	38,800	17,600	14,900	4,540	29,600	4,790	12,000	23,000	110	6,900	34,000	NS	<250
trans-1,2-Dichloroethene	100	27	<1.0	<100	<20	945	39.0	<100	<1.0	39.3	192	123	41	54.2	17.9	5.33	<30	<250	<5	<50	<250	NS	<250
Trichloroethene	3	1,560	14,300 D	4,700 D	1,660	1,230	6,600	1,300	570	320	13600	210	318	510	2,000	5.37	<40	<250	<5	<50	<250	NS	<250
Trichlorofluoromethane	2,100	<2.0	<1.0	<100	2.5	2.0	2.5	<100	1.3	2.2	1.1	<1.00	<1.00	<1.00	<1.00	<1.00	<29	<250	<5	<50	<250	NS	<250
Vinyl chloride	0.03	13,600 D	7,840 D	8,000 D	8,450	7,640	8,230	4,830	4,520	4,910	6,630	4,050	6,660	1,930	8,530	2,040	4,800	5,700	<5	2,400	<500	NS	<500
Xylenes (total)	500	5,950 D	10,700 D	45,400	24,400	24,100	25,300	11,800	13,300	8,080	13,800	5,980	5,690	1,310	8,990	1,300	6,000	8,200	84	2,300	16,000	NS	<250
Total VOCs		162,554	263,864	512,380	452,240	419,759	506,518	268,470	275,734	190,746	314,602	80,812	88,114	62,789	118,791	11,678	67,889	134,100	1,159	39,446	124,060	NS	44,000

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

ug/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

D Constituent concentration was quantitated using a secondary dilution.

NE Groundwater standard not established.

5,950 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

J Constituent concentration detected is between the method detection limit and reporting limit and is qualified as estimated.

NS Not sampled due to access restriction.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from RW-7, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	RW-7 5/2/01	RW-7 9/21/01	RW-7 12/18/01	RW-7 3/19/02	RW-7 6/19/02	RW-7 9/12/02	RW-7 12/18/02	RW-7 3/12/03	RW-7 9/24/03	RW-7 12/17/03	RW-7 3/17/04	RW-7 3/29/05	RW-7 3/22/06	RW-7 03/14/07	RW-7 03/27/08	RW-7 03/24/09	RW-7 04/15/10	RW-7 06/29/11	RW-7 03/22/12	RW-7 10/10/13	RW-7 8/25/2014	RW-7 12/15/15
Volatile Organic Compounds (USEPA Method 8260) µg/L													No Access										
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0J	<100	<1.0	< 1.00	2.2	<1.00		<1.00	<1.00	<1.00	<58	<500	<500	<500	<200	<200	<20
1,1,1-Trichloroethane	200	92,200 D	1,860 D	6,890 D	14,900	28,000	40,700J	19,700	7,700	4,400	97,000	23,800		886	19,000	2,830	24,000	27,000	32,000	19,000	530	23,000	20,000
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0J	<100	<1.0	< 1.00	1.0	<1.00		<1.00	<1.00	<1.00	<52	<500	<500	<500	<200	<200	<20
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<1.0	2.9	4.2	7.7J	<100	<1.0	1.3	10.4	<1.00		<1.00	<1.00	<1.00	<100	<500	<500	<500	<200	<200	<20
1,1-Dichloroethane	6	17,100 D	370 D	1,930 D	2,560	8,090	15,600J	1,460	2,280	1,230	8,400	11,600		702	7,230	2,050	8,900	9,000	4,700	6,800	450	4,500	5,800
1,1-Dichloroethene	350	29,300 D	570 D	3,740 D	5,020	8,730	15,900J	8,250	3,940	1,750	4,820	4,740		176	6,010	1,710	4,000	5,000	2,000	4,100	910	2,400	2,000
1,2,4-Trimethylbenzene	400	217	2.0	3.4	53.8	86.9	185J	<100	68.5	19	63	74.4		48.6	<1.00	97.0	180	<250	<500	<500	<200	<200	340
1,2-Dichlorobenzene	20	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0J	<100	<1.0	< 1.00	<1.00	<1.00		<1.00	<1.00	<1.00	<66	<500	<500	<500	<200	<200	<20
1,2-Dichloroethane	0.4	211	4.7	<1.0	42.6	75.4	130J	<100	23.5	17.2	112	58.3		10.7	78.6	26.0	74	<500	<500	<500	<200	<200	34
1,2-Dichloropropane	0.6	203	<1.0	<1.0	51.8	103	146J	<100	32.6	22.4	140	68.5		<1.00	82.6	<1.00	83	<500	<500	<500	<200	<200	43
1,3,5-Trimethylbenzene	400	55	3.4	2	19.8	29.0	54.5J	<100	21.9	9.8	15	29		10.7	49.8	27.9	<56	<250	<500	<500	<200	<200	100
2-Butanone (MEK)	4,000	27,600 D	66.6	<25	3,340	7,460	11,800J	<2,500	<25	2,240	3,230	2,360		3,180	298	<50.0	8,800	11,000	5,000	21,000	4,400	7,000	13,000
2-Chlorotoluene	100	<2.0	<1.0	<1.0	3.1	<1.0	<1.0J	<100	<1.0	< 1.00	<1.00	<1.00		<1.00	<1.00	<1.00	<64	<500	<500	<500	<200	<200	<20
4-Isopropyltoluene	25	<2.0	<1.0	<1.0	<1.0	1.6	1.6J	<100	1.3	< 1.00	<1.00	<1.00		<1.00	3.47	<1.00	<64	<500	<500	<500	NA	NA	NA
4-Methyl-2-pentanone	100	6,890	285	655	1,470	3,230	4,460J	2,130	1,000	592	2,940	1,140		914	3,150	2,400	2,500	<5,000	<5,000	<5,000	<2000	<2000	3,300
Acetone	6,000	62,200 D	57,400 D	<25	30,500	41,100	50,700J	<2500	23,200	10,000	10,000	11,000		16,900	54,400	<50.0	44,000	46,000	26,000	90,000	33,000	32,000	64,000
Benzene	1	141	3.3	4.8	45.6	82.2	123J	<100	18.9	12.5	129	64.7		12.2	94.6	28.2	120	<500	<500	<500	<200	<200	68
Bromochloromethane	NE	164	<1.0	<1.0	54.6	5.5	<1.0J	<100	<1.0	7.4	<1.00	<1.00		<1.00	<1.00	<1.00	<66	<500	<500	<500	<200	<200	<20
Bromodichloromethane	0.6	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0J	<100	<1.0	< 1.00	<1.00	<1.00		<1.00	<1.00	<1.00	<68	<500	<500	<500	<200	<200	<20
Bromomethane	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		<1.00	<1.00	<1.00	<100	<500	1,600	<500	<1000	<1000	<100
Carbon disulfide	700	<2.0	<1.0	<1.0	<1.0	<1.0	1.3J	<100	<1.0	3.0	1.9	<1.00		<1.00	<1.00	<1.00	<120	<1,000	<1,000	<1,000	<400	<400	<40
Carbon tetrachloride	0.3	11 J	<1.0	<1.0	<1.0	<1.0	<1.0J	<100	<1.0	< 1.00	<1.00	<1.00		<1.00	<1.00	<1.00	<54	<500	<500	<500	<200	<200	<20
Chlorobenzene	50	<2.0	<1.0	<1.0	<1.0	<1.0	1.6J	<100	<1.0	< 1.00	1.1	<1.00		<1.00	<1.00	<1.00	<68	<500	<500	<500	<200	<200	<20
Chloroethane	3,000	625	138	520	86.1	255	575J	110J	95.4	106	975	940		105	942	309	2,300	3,400	1,300	3,400	<1000	<1000	2,000
Chloroform	70	98	<1.0	2.0	9.8	18.8	29.8J	<100	12.2	6.6	19.9	5.6		1.5	<1.00	2.57	<58	<500	<500	<500	<200	<200	<20
Chloromethane	2.6	58	<1.0	<1.0	2.6	5.4J	17.7J	<100	<1.0	8.0	11.3	3.8		23.1	<1.00	12.1	<56	<500	<500	<500	<200	<200	<200
cis-1,2-Dichloroethene	70	49,400 D	2,780 D	9,530 D	13,600	25,400	43,100J	6,850	10,800	6,180	20,800	15,000		1,740	21,600	9,400	29,000	29,000	18,000	38,000	6,700	23,000	21,000
Ethylbenzene	600	2,800 D	19.6	260 D	484	1,120	1,850J	670	520	174	1,120	690		173	1,610	628	1,600	2,200	1,200	1,400	580	1,300	2,200
Isopropylbenzene	70	17 J	<1.0	<1.0	6.6	9.3	17.0J	<100	4.5	1.4	5.0	7.6		4.49	16.3	5.66	<54	<500	<500	<500	<200	<200	28
Methylene chloride	5	124,000 D	3,030 D	1,410 D	20,800	41,400	60,900J	33,600	11,400	8,920	51,000	18,700		3,690	49,200	12,400	33,000	46,000	9,900	50,000	7,900	13,000	8,500
Naphthalene	6	43.4 J	17.7	<2.5	33.4	31.9	57.9J	<250	31.5	11.1	22.4	23		16.3	44.6	25.3	<54	<2500	<2,500	<2,500	<1000	<1000	230
n-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0J	<100	<1.0	< 1.00	<1.00	1.4		<1.00	<1.00	1.95	<66	<500	<500	<500	<200	<200	<20
n-Propylbenzene	70	17 J	<1.0	<1.0	5.6	7.3	15.0J	<100	4.6	1.4	3.0	6.6		<1.00	13.5	6.1	<68	<500	<500	<500	<200	<200	30
sec-Butylbenzene	70	<2.0	<1.0	<1.0	<1.0	1.2	1.5J	<100	<1.0	< 1.00	<1.00	<1.00		<1.00	2.99	<1.00	<58	<500	<500	<500	<200	<200	<20
Styrene	70	<2.0	<1.0	<1.0	3.9	48.8	<1.0J	<100	<1.0	< 1.00	<1.00	<1.00		13.6	<1.00	<1.00	<72	<500	<500	<500	<200	<200	<20
Tetrachloroethene	0.7	18,100 D	<1.0	1,820 D	1,210	1,320	135J	3,920	205	258	6,250	1,440		369	3,430	648	2,300	2,700	2,400	1,400	390	<200	630
Toluene	600	88,600 D	1,520 D	7,580 D	12,900	24,100	37,100J	21,200	8,950	5,830	24,200	<1.0		5,350	49,600	15,200	32,000	39,000	16,000	32,000	7,400	16,000	22,000
trans-1,2-Dichloroethene	100	117	7.8	60.6	22.1	39.7	48.8J	<100	<1.0	12.7	112	<1.00		4.76	<1.00	9.96	<60	<500	<500	<500	<200	<200	<20
Trichloroethene	3	44,300 D	1,770 D	3,180 D	3,300	6,990	6,090J	14,400	745	2,090	23,000	4,180		538	8,470	1,620	5,700	6,800	3,900	4,700	800	420	520
Trichlorofluoromethane	2,100	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0J	<100	<1.0	< 1.00	1.0	<1.00		<1.00	<1.00	<1.00	<58	<250	<500	<500	<200	<200	<20
Vinyl chloride	0.03	8,100 D	109	1,410 D	1,460	3,700	7,870J	450	400	1,020	5,150	8,790		507	5,220	2,430	4,000	5,400	1,500	3,200	410	1,900	2,400
Xylenes (total)	500	15,000 D	250 D	1,340 D	2,840	5,740	9,740J	3,780	2,960	1,280	5,520	4,120		1,470	9,820	3,990	9,000	11,000	6,100	7,400	3,200	7,500	11,000
Total VOCs		587,567	70,207	40,338	114,828	207,185	307,358	116,520	74,415	46,204	265,055	108,843	NA	36,846	240,366	55,858	211,557	243,500	131,600	282,400	66,670	132,020	179,223

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

µg/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

D Constituent concentration was quantitated using a secondary dilution.

NA Constituent was not analyzed.

NE Groundwater standard not established.

15,000 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from RW-8, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	RW-8 05/02/01	RW-8 09/22/01	RW-8 12/20/01	RW-8 03/19/02	RW-8 06/19/02	RW-8 06/05/03	RW-8 09/24/03	RW-8 12/17/03	RW-8 03/17/04	RW-8 03/29/05	RW-8 03/22/06	RW-8 03/14/07	RW-8 03/27/08	RW-8 03/24/09	RW-8 04/15/10	RW-8 06/28/11	RW-8 03/22/12	RW-8 10/10/13	RW-8 08/26/14	RW-8 12/15/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																					
1,1,1,2-Tetrachloroethane	1	<2.0	11.5	<100	11.2	6.1	3.4	5.4	2.3	2.4	<1.00	<1.00	<1.00	<1.00	<140	<25	<2	<500	<50	<50	<50
1,1,1-Trichloroethane	200	8,150 D	65,000 D	108,000 D	76,100	50,500	17,000	59,400	35,200	39,200	28,600	20,000	30,200	2,080	16,000	760	5.8	3,500	680	<50	200
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<100	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<130	<25	<2	<500	<50	<50	<50
1,1,2-Trichloroethane	0.6	<2.0	<1.0	<100	5.6	5.9	7.4	9.0	5.6	<1.00	6.6	4.52	<1.00	<1.00	<260	<25	<2	<500	<50	<50	<50
1,1-Dichloroethane	6	1,830	1,820 D	5,060	1,370	2,680	1,490	2,690	2,280	4570	13,200	11,400	21,100	8,570	8,700	4,300	79	6,600	510	160	520
1,1-Dichloroethene	350	8,300 D	14,500 D	23,100 D	15,600	9,550	6,240	15,100	9,850	9,560	6,960	6,250	11,600	2,610	5,400	1,300	37	2,400	670	54	230
1,2,3-Trichloropropane	0.005	<2.0	<1.0	<100	<1.0	1.3	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<140	<25	<2	<500	<50	<50	<50
1,2,4-Trimethylbenzene	400	<2.0	33	270	84.7	45.5	31.1	110	56.8	70.6	100	70.5	<1.00	<1.00	<140	<25	<2	<500	<50	<50	<50
1,2-Dichlorobenzene	20	<2.0	<1.0	<100	1.0	<1.0	<1.0	1.5	<1.00	1.1	4.1	4.5	4.31	<1.00	<160	<25	<2	<500	<50	<50	<50
1,2-Dichloroethane	0.4	35	117	270	70.8	52.4	<1.0	72.1	35.3	79.2	79	76.5	65.4	29.1	<160	<25	2.2	<500	<50	<50	<50
1,2-Dichloropropane	0.6	<2.0	<1.0	260	82.8	48.0	15.1	78.6	39.6	86.8	<1.00	97.8	112	35.1	<180	25	2.6	<500	<50	<50	<50
1,3,5-Trimethylbenzene	400	<2.0	9.5	<100	28.3	15.2	10.9	35.9	17.5	22.7	46	37.9	<1.00	<1.00	<140	<25	<2	<500	<50	<50	<50
2-Butanone (MEK)	4,000	<50	6,400 D	15,000	649	5,900	<25	13,500	8,600	<25.0	13,300	16,200	106	<50.0	4,300	690	<20	<5,000	<500	<500	<500
2-Chlorotoluene	100	<2.0	<1.0	<100	<1.0	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<160	<25	<2	<500	<50	<50	<50
4-Chlorotoluene	24	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<160	<25	<2	<500	<50	<50	<50
4-Isopropyltoluene	25	<2.0	<1.0	<100	1.5 J	1.9	<1.0	1.8	1.2	<1.00	1.6	2.88	3.72	<1.00	<160	<25	<2	<500	NA	NA	NA
4-Methyl-2-pentanone	100	1,600	2,680 D	5,830	2,280	1,040	351	1,700	999	1,670	2,640	3,540	1,470	80.9	1,300	<250	<20	<5,000	<500	<500	<500
Acetone	6,000	18,900 DJ	34,100 D	80,900	17,800	66,000	11,800	31,700	26,200	35,300	52,200	68,500	<25,000	<50.0	26,000	1,100	<50	<13,000	<1300	<1300	1,600
Benzene	1	15 DJ	45.7	130	45.6	31.4	11.2	43.3	28.2	43.8	43	40.9	66.6	12.7	<160	<25	<2	<500	<50	<50	<50
Bromochloromethane	NE	89	<1.0	600	28.8	<1.0	<1.0	18.5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<160	<25	<2	<500	<50	<50	<50
Bromodichloromethane	0.6	<2.0	<1.0	<100	6.5	3.5	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<170	<25	<2	<500	<50	<50	<50
Carbon disulfide	700	<2.0	<1.0	<100	<1.0	<1.0	<1.0	2.3	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<300	<50	<4	<1,000	<100	<100	<100
Carbon tetrachloride	0.3	<2.0	25.9	81 J	<1.0	7.9	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	3,940	<1.00	<140	<25	<2	<500	<50	<50	<50
Chlorobenzene	50	<2.0	10	<100	<1.0	6.1	5.6	8.1	7.1	6.9	6.2	<1.00	<1.00	<1.00	<170	<25	<2	<500	<50	<50	<50
Chloroethane	3,000	106	175 D	500	111	183	72.0	197	180	389	316	961	2,100	2,600	9,100	<25	130	8,300	610	<250	550
Chloroform	70	68	135	150	141	127	149	142	81.1	83.4	33	24.7	<1.00	1.68	<140	<25	<2	<500	<50	<50	<50
Chloromethane	2.6	<2.0	<1.0	<100	2.8	<1.0	<1.0	5.4	<1.00	3.7	13	9.22	<1.00	1.29	<140	<25	<2	<500	<50	<50	<50
cis-1,2-Dichloroethene	70	31,000 D	8,350 D	10,500 D	9,370	19,800	50,500	85,000	82,000	99,300	83,000	71,400	63,100	26,700	59,000	19,000	930	27,000	7,000	3,900	10,000
Ethylbenzene	600	184	1,380 D	3,380	1,390	935	510	1,800	1,150	780	768	918	1,570	20.2	360	430	11	<500	350	89	130
Isopropylbenzene	70	<2.0	4.8	<100	11.5	7.0	5.9	13.2	6.3	6.1	5.3	7.51	12.8	<1.00	<140	<25	<2	<500	<50	<50	<50
Methylene chloride	5	6,100 D	44,000 D	66,300	60,100	24,300	6,820	36,600	18,400	27,900	25,600	25,700	24,400	4,020	18,000	<250	49	<2,500	770	<250	<250
Naphthalene	6	<5.0	25	<250	49.8	25.9	22.1	43.9	37.2	36.7	54	49.9	39.4	<5.00	<140	<250	<10	<2,500	<250	<1000	<250
n-Butylbenzene	70	<2.0	<1.0	<100	1.7	<1.0	2.2	< 1.00	<1.00	1.5	<1.00	<1.00	<1.00	<1.00	<160	<25	<2	<500	<50	<50	<50
n-Propylbenzene	70	<2.0	4.0	<100	10.3	6.0	4.4	13.8	3.8	4.3	2.7	<1.00	8.79	<1.00	<170	<25	<2	<500	<50	<50	<50
sec-Butylbenzene	70	<2.0	<1.0	<100	1.4	1.4	<1.0	1.8	<1.00	<1.00	<1.00	<1.00	3.06	<1.00	<140	<25	<2	<500	<50	<50	<50
Styrene	70	<2.0	86.4	500	105	<1.0	<1.0	156	<1.00	<1.00	<1.00	72.8	<1.00	<1.00	<180	<25	<2	<500	<50	<50	<50
Tetrachloroethene	0.7	10,000 D	44,700 D	28,700 D	59,400	36,400	26,600	19,000	4350	500	594	2,420	2,440	119	300	170	4.7	<500	4,200	2,800	<50
Toluene	600	12,100 D	37,600 D	37,900 D	38,700	30,800	15,100	39,500	28,600	29,400	22,000	28,200	39,900	886	17,000	7,800	72	4,700	4,200	1,200	880
trans-1,2-Dichloroethene	100	<2.0	<1.0	<100	24.7	62.6	<1.0	216	116	328	468	965	<1.00	90.0	<150	35	<2	<500	<50	<50	<50
Trichloroethene	3	18,000 D	83,500	99,300 D	88,300	39,700	17,500	19,800	5,900	930	1,340	5,780	3,800	299	1,100	87	2.0	<500	4,800	3,500	72
Trichlorofluoromethane	2,100	<2.0	5.0	<100	5.8	5.7	<1.0	6.0	3.3	2.3	<1.00	<1.00	<1.00	<1.00	<140	<25	<2	<500	<50	<50	<50
Vinyl chloride	0.03	160	930 D	3,980	1,260	1,150	1,550	3,470	2,860	2,910	4,520	7,050	14,700	1,770	6,100	8,000	150	5,300	2,100	490	4,500
Xylenes (total)	500	901	6,270 D	13,300	7,080	4,380	2,880	7,890	5,120	4,780	7,680	5,390	8,960	129	3,000	1,800	49	1,100	1,700	490	570
Total VOCs		117,538	348,910	504,011	380,231	293,779	158,683	338,332	232,130	257,969	263,581	275,174	229,702	50,054	175,660	45,497	1,524	58,900	27,590	12,683	19,252

Notes

[1] 15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.

µg/L Micrograms per liter.

< Constituent was not detected above the laboratory reporting limit.

D Constituent concentration was quantitated using a secondary dilution.

NE Groundwater standard not established.

15,000 Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from RW-9, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

Constituent	NCAC 2L Groundwater Standard[1]	RW-9 05/02/01	RW-9 09/21/01	RW-9 12/20/01	RW-9 03/19/02	RW-9 09/12/02	RW-9 12/18/02	RW-9 03/12/03	RW-9 06/05/03	RW-9 09/24/03	RW-9 03/17/04	RW-9 03/29/05	RW-9 03/22/06	RW-9 03/14/07	RW-9 03/27/08	RW-9 03/24/09	RW-9 04/15/10	RW-9 06/29/11	RW-9 03/22/12	RW-9 10/09/13	RW-9 08/26/14	RW-9 12/16/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																						
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	<100	<1.0	<1.0	<100	<1.0	3.2	1.4	<1.00	<1.00	<1.00	<1.00	<1.00	<14	<50	<50	<50	<50	<50	<5
1,1,1-Trichloroethane	200	236,000 D	36,800 D	148,000 D	86,000	117,000	100,000	97,000	94,500	59,700	39,300	9,150	5,880	3,510	1,340	1,500	1,100	400	940	270	<50	460
1,1,2,2-Tetrachloroethane	0.2	<2.0	<1.0	<100	5.4	6.4	<100	5.8	5.3	4.9	2.8	<1.00	<1.00	<1.00	<1.00	<13	<50	<50	<50	<50	<50	<5
1,1,2-Trichloroethane	0.6	<2.0	10.4	<100	10.5	21.2	<100	15.1	11.6	7.3	<1.00	<1.00	<1.00	<1.00	<1.00	<26	<50	<50	<50	<50	<50	15
1,1-Dichloroethane	6	762	1,850 D	6,490	1,290	2,150	2,520	3,140	3,440	4,190	2,840	10,300	11,300	3,810	9,260	5,700	2,800	1,700	2,000	1,100	2,800	760
1,1-Dichloroethene	350	10,300 D	6,990 D	32,400 D	16,800	19,700	11,100	11,000	12,600	7,440	5,950	2,600	2,180	1,550	2,130	1,400	820	450	1,000	720	1,700	630
1,2,4-Trimethylbenzene	400	223	26.1	350	182	273	130	182	161	161	141	88	66.7	31.4	84.3	29	<50	<50	<50	<50	<50	<5
1,2-Dichlorobenzene	20	<2.0	<1.0	<100	6.4	7.1	<100	<1.0	4.6	5.9	4.8	<1.00	<1.00	20.1	2.93	<16	<50	<50	<50	<50	<50	<5
1,2-Dichloroethane	0.4	438	110	230	91.4	156	<100	87.4	<1.0	63.7	46.5	27.5	<1.00	9.00	13.7	<16	<50	<50	<50	<50	<50	<5
1,2-Dichloropropane	0.6	492	<1.0	390	182	294	200	182	180	155	93	55	47.2	30.4	<1.00	27	<50	<50	<50	<50	<50	9.6
1,3,5-Trimethylbenzene	400	67	7.9	<100	75.1	94.2	<100	64.4	52.7	69.5	53	30	21	13.9	30.8	<14	<50	<50	<50	<50	<50	<5
2-Butanone (MEK)	4,000	2,380	<25	4,310	376	2,050	<2,500	<25	<25	6,130	<25.0	648	<50.0	<50.0	<50.0	<30	<500	<500	<500	<500	<500	<50
2-Chlorotoluene	100	<2.0	<1.0	<100	<1.0	<1.0	<100	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<16	<50	<50	<50	<50	<50	<5
4-Chlorotoluene	24	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<1.0	5.9	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<16	<50	<50	<50	<50	<50	<5
4-Isopropyltoluene	25	<2.0	<1.0	<100	3.7 J	4.5	<100	3.0	2.8	3.5	3	1.5	2.48	2.69	1.73	<16	<50	<50	<50	NA	NA	NA
4-Methyl-2-pentanone	100	2,280 D	3,070 D	3,620	2,540	3,870	2,130	1,920	525	1,040	869	339	<50.0	70.2	16.5	96	<50	<500	<500	<500	<500	<50
Acetone	6,000	3,460	4,290 D	11,800	3,860	5,350	<2,500	15,600	<25	4,030	4,250	185	<50.0	179	<50.0	<250	<1,300	<1,300	<1,300	<1300	<1300	<50
Benzene	1	494	120	300	146	213	140	138	152	109	67.4	49	38.6	20.2	35.5	25	<50	<50	<50	<50	<50	6.0
Bromochloromethane	NE	758	6.3	540	<1.0	<1.0	<100	<1.0	<1.0	< 1.00	27.5	<1.00	<1.00	<1.00	<1.00	<16	<50	<50	<50	<50	<50	<5
Bromodichloromethane	0.6	<2.0	<1.0	<100	<1.0	2.0	<100	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<17	<50	<50	<50	<50	<50	<5
Carbon disulfide	700	<2.0	<1.0	<100	<1.0	2.0	<100	<1.0	<1.0	8.5	<1.00	<1.00	<1.00	<1.00	<1.00	<30	<100	<100	<100	<100	<100	<10
Carbon tetrachloride	0.3	58	<1.0	<100	<1.0	<1.0	<100	<1.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<14	<50	<50	<50	<50	<50	<5
Chlorobenzene	50	<2.0	<1.0	<100	<1.0	4.2	<100	<1.0	<1.0	2.2	1.7	<1.00	<1.00	<1.00	<1.00	<17	<50	<50	<50	<50	<50	<5
Chloroethane	3,000	<2.0	<1.0	<100	13.9	50.1	<100	103	95.1	21.2	53.4	177	206	118	339	1,100	52	330	490	<250	340	360
Chloroform	70	76	36.6	<100	51.6	75.2	<100	52.6	70.1	34.2	26.3	2.2	<1.00	2.83	<1.00	<14	<50	<50	<50	<50	<50	<5
Chloromethane	2.6	<2.0	6.8	<100	<1.0	2.3	<100	<1.0	1.4	2.3	<1.00	12.4	5.21	<1.00	1.14	<14	<50	<50	<50	<50	<50	<5
cis-1,2-Dichloroethene	70	3,560 D	14,900 D	49,700 D	30,800	40,500	40,200	44,400	49,200	51,900	38,600	14,400	<1.00	7,790	12,000	8,400	5,100	3,300	5,200	2,500	4,800	2,900
Dichlorodifluoromethane	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	3.21	<16	<50	<50	<50	<50	<50	<5
Ethylbenzene	600	850 D	620 D	3,990	2,000	3,090	1,820	2,230	1,890	1,890	1,320	516	364	318	728	320	220	<50	<50	58	64	37
Isopropylbenzene	70	26	3.6	230	27.2	33.3	<100	22.2	21.1	22.3	<1.00	10	7.31	4.95	10.8	<14	<50	<50	<50	<50	<50	<5
Methylene chloride	5	325,000 D	81,400 D	114,000 D	61,000	73,600	47,600	33,600	39,200	26,400	19,000	7,950	2,150	1,440	119	850	<250	390	<250	<250	800	65
Naphthalene	6	56	17.8	<250	113	109	<250	62.6	55.4	62.1	41.8	20	14	8.01	14.2	<14	<250	<250	<250	<250	<250	<25
n-Butylbenzene	70	<2.0	<1.0	<100	3.8	<1.0	<100	6.1	5.5	< 1.00	5.5	<1.00	<1.00	3.62	3.90	<16	<50	<50	<50	<50	<50	<5
n-Propylbenzene	70	26	2.6	<100	28.3	37.8	<100	25.6	19	25.9	19.2	11	<1.00	4.85	13.2	<17	<50	<50	<50	<50	<50	<5
sec-Butlybenzene	70	<2.0	<1.0	<100	3.0	3.9	<100	<1.0	<1.0	2.8	<1.00	<1.00	<1.00	2.43	1.90	<14	<50	<50	<50	<50	<50	<5
Styrene	70	219	14	<100	67.4	<1.0	<100	<1.0	92.2	147	<1.00	<1.00	22.1	<1.00	<1.00	<18	<50	<50	<50	<50	<50	<5
tert-Butlybenzene	70	<2.0	<1.0	<100	<1.0	1.0	<100	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<16	<50	<50	<50	<50	<50	<5
Tetrachloroethene	0.7	8,900 D	4,230 D	35,200 D	20,000	26,600	12,100	13,200	9,500	6240	4,820	209	50.9	2,860	197	550	750	<50	290	370	250	650
Toluene	600	17,300 D	15,900 D	70,300 D	37,800	47,800	30,800	26,800	28,400	22,300	<1.0	5,770	5,870	3,420	5,680	3,500	2,000	180	350	350	780	190
trans-1,2-Dichloroethene	100	64	<1.0	<100	56.9	49.8	<100	<1.0	85.8	128	190	<1.00	186	24.3	14.3	16	<50	<50	<50	<50	<50	10
Trichloroethene	3	102,000 D	19,200 D	82,600 D	45,400	51,100	30,800	26,400	24,100	6,070	3,010	454	65.8	1,120	143	380	490	72	320	210	89	200
Trichlorofluoromethane	2,100	<2.0	<1.0	<100	1.8	3.5	<100	3.4	5.3	2.1	1.3	<1.00	<1.00	<1.00	<1.00	<14	<50	<50	<50	<50	<50	<5
Vinyl chloride	0.03	1,330	2,400 D	8,400 D	2,600	4,970	2,480	3,870	4,100	5,030	3,140	3,530	3,130	2,340	3,950	1,900	1,000	390	510	380	1,100	720
Xylenes (total)	500	4,280 D	3,190 D	20,000	10,700	16,200	9,990	11,900	8,580	8,420	6,900	2,740	1,700	1,600	3,260	1,400	900	<100	140	190	350	160
Total VOCs		721,399	195,202	592,850	311,535	415,424	292,010	292,013	277,065	211,821	130,777	59,280	33,307	30,304	39,394	27,193	15,232	7,212	11,240	6,148	13,073	7,173

Notes

1	15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.
ug/L	Micrograms per liter.
<	Constituent was not detected above the laboratory reporting limit.
D	Constituent concentration was quantitated using a secondary dilution.
NE	Groundwater standard not established.
219	Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.
J	Constituent concentration detected is between the method detection limit and reporting limit and is qualified as estimated.

Table 4-5. Summary of Historical Analytical Results for Groundwater Samples Collected from RW-10, Brenntag Mid-South Facility (Former Southchem Facility), Durham, North Carolina.

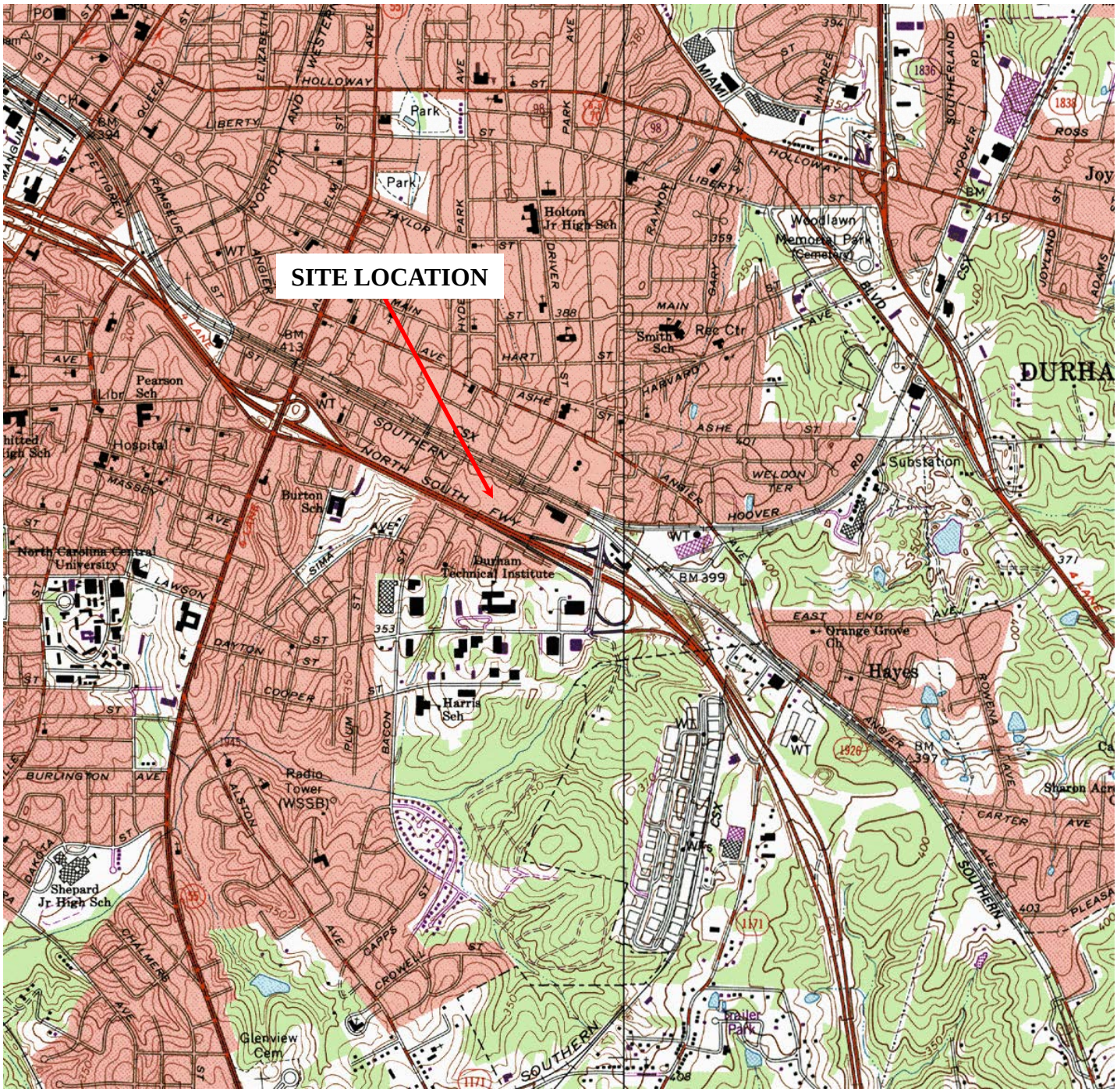
Constituent	NCAC 2L Groundwater Standard[1]	RW-10 05/02/01	RW-10 09/22/01	RW-10 09/24/03	RW-10 03/17/04	RW-10 03/29/05	RW-10 03/22/06	RW-10 03/14/07	RW-10 03/27/08	RW-10 03/24/09	RW-10 04/15/10	RW-10 06/29/11	RW-10 03/22/12	RW-10 10/10/13	RW-10 08/26/14	RW-10 12/15/15
Volatile Organic Compounds (USEPA Method 8260) µg/L																
1,1,1,2-Tetrachloroethane	1	<2.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<14	<200	<10	<200	<1	<25	<25
1,1,1-Trichloroethane	200	160	10,300 D	21.5	135	154	1,800	16.0	6.95	85	<200	<10	<200	<1	<25	49
1,1,2-Trichloroethane	0.6	<2.0	4.0	4.2	<1.00	1.7	<1.00	<1.00	2.82	<26	<200	<10	<200	<1	<25	<25
1,1-Dichloroethane	6	<2.0	340 D	5.5	26.6	298	3,480	7.25	17.9	1,300	<200	33	<200	<1	220	230
1,1-Dichloroethene	350	63	3,500 D	15.5	104	58	1,610	23.6	23.4	350	<200	16	<200	<1	110	210
1,2,4-Trimethylbenzene	400	<2.0	8.2	< 1.0	1.3	1.2	16.2	<1.00	<1.00	<14	<200	<10	<200	<1	<25	<25
1,2-Dichlorobenzene	20	<2.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<16	<200	<10	<200	<1	<25	<25
1,2-Dichloroethane	0.4	<2.0	13.5	< 1.00	<1.00	2.8	21.2	<1.00	<1.00	<16	<200	<10	<200	<1	<25	<25
1,2-Dichloropropane	0.6	<2.0	<1.0	< 1.00	<1.00	<1.00	24.4	<1.00	<1.00	<18	<200	<50	<200	<1	<25	<25
1,3,5-Trimethylbenzene	400	<2.0	2.7	< 1.00	<1.00	<1.00	5.6	<1.00	<1.00	<14	<200	<10	<200	<1	<25	58
2-Butanone (MEK)	4,000	<50	243	< 25.0	<25.0	322	2,870	<50.0	<50.0	<30	<2,000	<100	<2,000	<10	<250	<250
2-Chlorotoluene	100	<2.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<16	<200	<10	<200	<1	<25	<25
4-Isopropyltoluene	25	<2.0	<1.0	< 1.00	<1.00	<1.00	1.94	<1.00	<1.00	<16	<200	<10	<200	NA	NA	NA
4-Methyl-2-pentanone	100	13.4 J	87.4	< 5.00	<5.00	56	<50.0	<10.0	<10.0	96	<2,000	<100	<2,000	<10	<250	<250
Acetone	6,000	<50	<2500	< 25	28.4	864	4,710	<50.0	<50.0	730	<5,000	<250	<5,000	<25	<630	<630
Benzene	1	<2.0	7.1	1.7	2.0	1.5	14.7	1.21	1.08	<16	<200	<10	<200	<1	<25	<25
Bromochloromethane	NE	<2.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<16	<200	<10	<200	<1	<25	<25
Bromodichloromethane	0.6	<2.0	<1.0	1.4	1.0	<1.00	<1.00	<1.00	<1.00	<17	<200	<10	<200	<1	<25	<25
Carbon disulfide	700	<2.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<30	<200	<20	<200	<2	<50	<50
Carbon tetrachloride	0.3	<2.0	<1.0	5.3	5.3	<1.00	<1.00	4.88	3.46	<14	<400	<10	<400	<1	<25	<25
Chlorobenzene	50	<2.0	4.5	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<17	<200	<10	<200	<1	<25	<25
Chloroethane	3,000	<2.0	16.8	< 1.00	<1.00	8.5	921	<1.00	5.03	550	<200	22	<200	<5	240	1,300
Chloroform	70	40	73.9	180	168	27.4	7.59	117	108	<14	<200	43	<200	<1	<25	<25
Chloromethane	2.6	<2.0	<1.0	< 1.00	<1.00	<1.00	20.1	<1.00	<1.00	<14	<200	<10	<200	<1	<25	<25
cis-1,2-Dichloroethene	70	716	1,700 D	1,280	1,920	2,760	10,500	960	848	6,500	1,200	1,100	3,000	23	3,300	4,600
Ethylbenzene	600	<2.0	183	< 1.0	9.3	<5.0	182	<1.00	<1.00	74	<200	<10	<200	<1	160	620
Isopropylbenzene	70	<2.0	1.1	< 1.00	<1.00	<1.00	4.41	<1.00	<1.00	<14	<200	<10	<200	<1	<25	<25
Methylene chloride	5	139	5,850 D	< 2.50	86.8	366	4,500	<5.00	7.81	980	<1,000	<50	<1,000	<5	<130	190
Naphthalene	6	11.1 J	6.7	< 5.00	<5.00	<25.0	9.26	<5.00	<5.00	<14	<1,000	<50	<1,000	<5	<130	200
n-Propylbenzene	70	<2.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<17	<200	<10	<200	<1	<25	<25
sec-Butlylbenzene	70	<2.0	<1.0	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<16	<200	<10	<200	<1	<25	<25
Styrene	70	<2.0	3.4	< 1.00	<1.00	<1.00	14	<1.00	<1.00	<18	<200	<10	<200	<1	<25	<25
Tetrachloroethene	0.7	9,350 D	41,500 D	13,800	15,600	156	45.5	19,700	14,500	1,200	14,000	500	17,000	61	1,400	130
Toluene	600	96	5,100 D	5.0	138	106	2,260	1.72	7.16	2,200	<200	35	<200	<1	2,000	8,200
trans-1,2-Dichloroethene	100	<2.0	6.8	16.6	16.2	4.9	117	12.5	11.8	16	<200	<10	<200	<1	<25	<25
Trichloroethene	3	25,500 D	35,000 D	38,200	41,700	730	158	32,000	23,700	2,000	24,000	2,900	21,000	79	2,200	220
Trichlorofluoromethane	2,100	<2.0	1.4	< 1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<14	<200	<10	<200	<1	<25	<25
Vinyl chloride	0.03	12.6	163	17.4	39.8	159	2,820	37.2	3.19	4,000	<200	27	<200	<1	1,700	3,200
Xylenes (total)	500	50	1,080	< 1.0	47.4	9.5	1,130	<3.00	3.85	320	<400	<20	<400	<2	820	2,900
Total VOCs		36,151	105,197	53,554	60,029	6,086	37,243	52,881	39,250	20,401	39,200	4,676	41,000	163	12,150	22,107

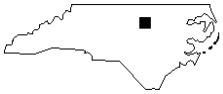
Notes

1	15A NCAC 2L .0202 Groundwater Quality Standard, effective April 1, 2013. Interim Maximum Allowable Concentrations (IMACs) are presented if a 15A NCAC 2L .0202 is unavailable.
ug/L	Micrograms per liter.
<	Constituent was not detected above the laboratory reporting limit.
D	Constituent concentration was quantitated using a secondary dilution.
NE	Groundwater standard not established.
12.6	Indicates concentration of constituent in sample was above the NCAC 2L Groundwater Standard.
J	Constituent concentration detected is between the method detection limit and reporting limit and is qualified as estimated.

Annual Report on Groundwater Remediation System O&M and Monitor Well Sampling—January through December 2015

Figures





QUADRANGLE LOCATION

SCALE

0 2000 4000

N

SOURCE: TOPOGRAPHY TAKEN FROM USGS 7.5 MINUTE QUADRANGLE SOUTHEAST DURHAM AND SOUTHWEST DURHAM

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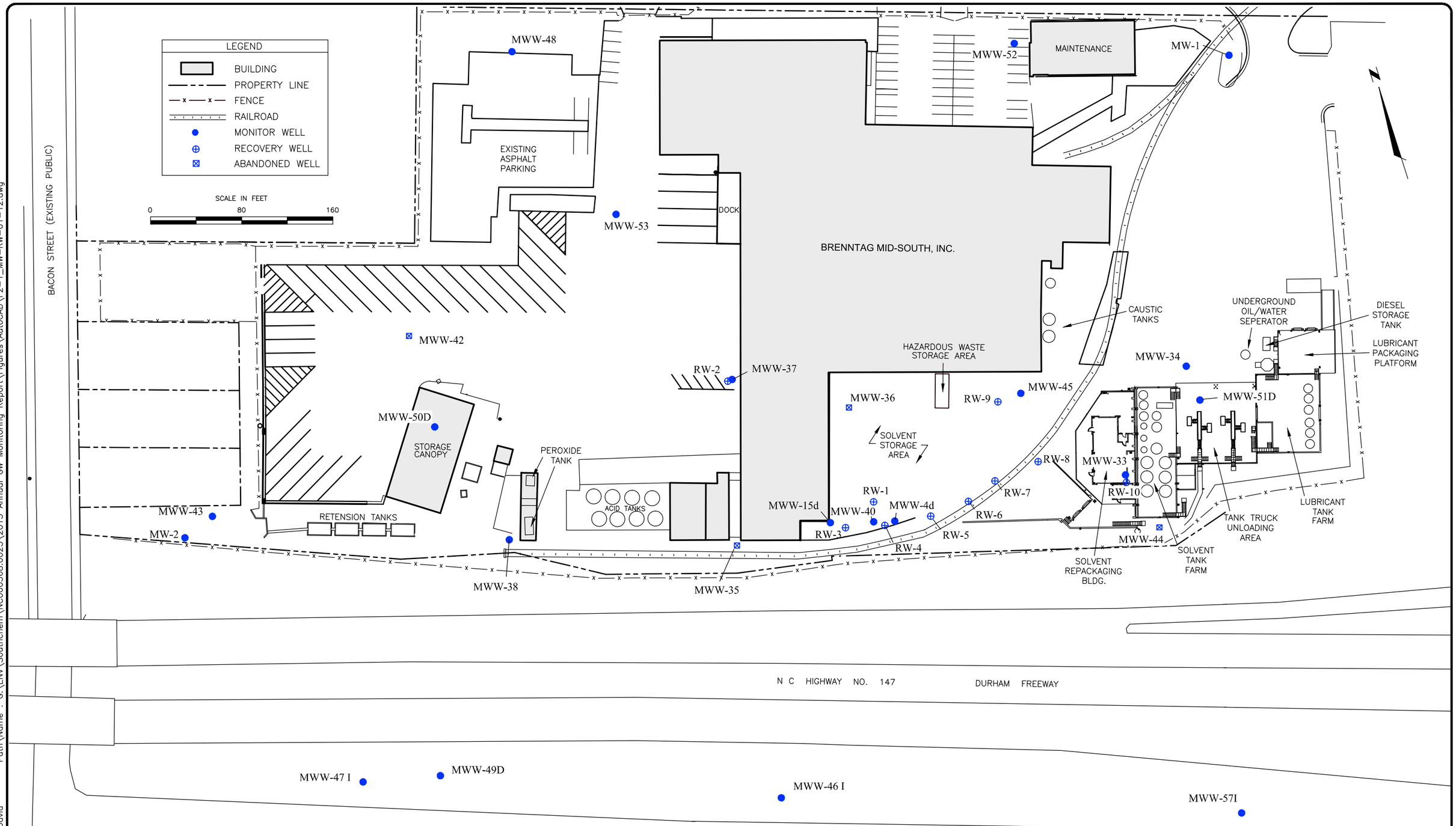
	4/19/05	

SITE LOCATION

CLIENT:	BRENNTAG MID-SOUTH, INC.		PM: JS
LOCATION:	FORMER SOUTHCHEM FACILITY DURHAM, NORTH CAROLINA		PE/RG:
DESIGNED: PJB	DETAILED:	PROJECT NO: NC000368.0025	FIGURE: 1-1



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PRJT MANAGER: J. SHILLIDAY	CHECKED BY:	DRAFTER: D. TWAMLEY	PROJECT NUMBER: NC000368.0025.00004

NOTES:

BRENNTAG MID-SOUTH FACILITY
(FORMER SOUTHCHEM FACILITY)
DURHAM, NORTH CAROLINA

MONITOR WELL AND RECOVERY WELL LOCATION MAP

FIGURE: 2-1

Acad Version : R18.1s (LMS Tech) Date\Time : Mon, 09 May 2016 - 2:40pm
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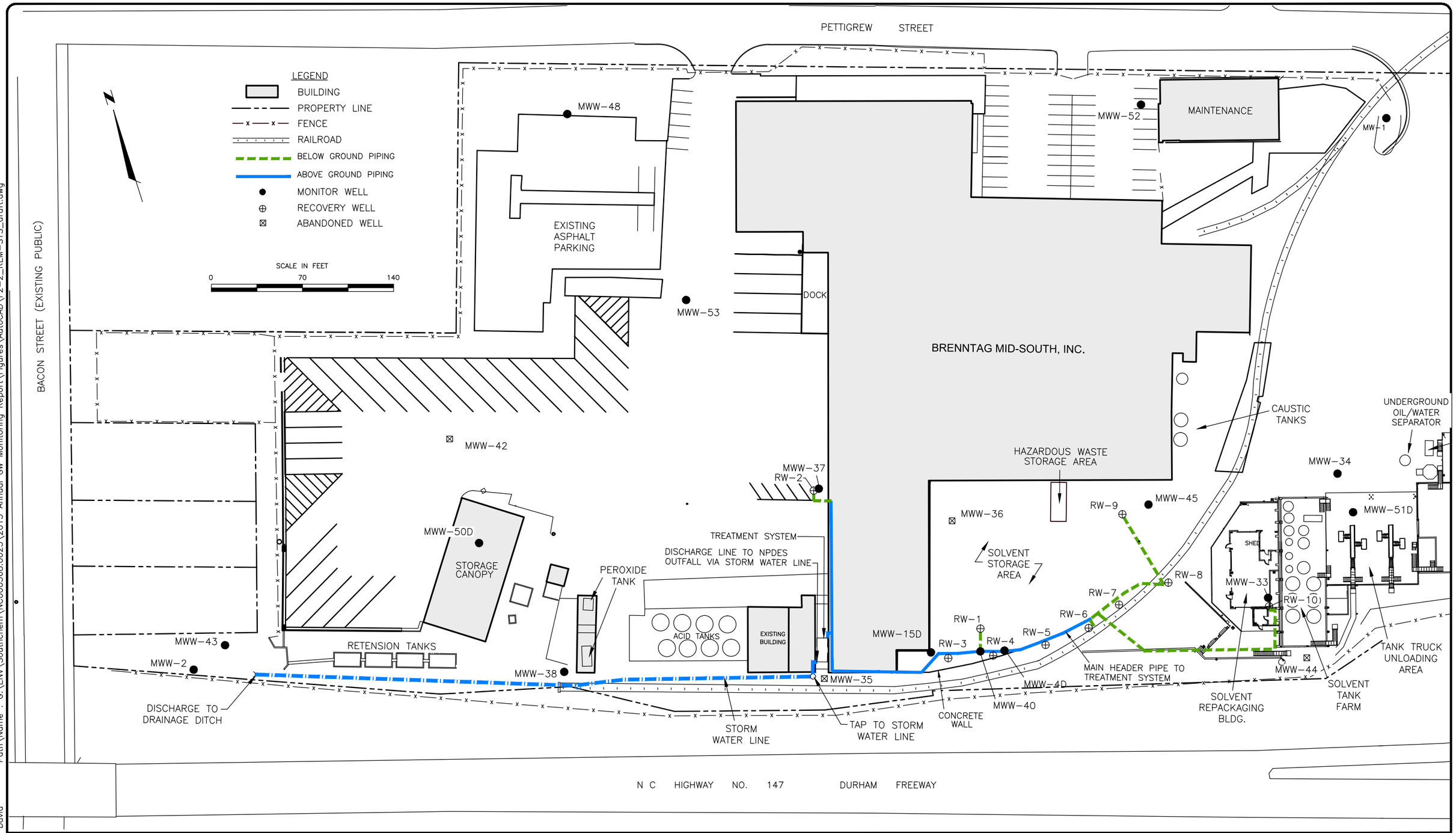

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NOTES:

BRENNTAG MID-SOUTH FACILITY
(FORMER SOUTHCHEM FACILITY)
DURHAM, NORTH CAROLINA

REMEDIATION SYSTEM PIPING LAYOUT

FIGURE: 2-2

Acad Version : R18.1s (LMS Tech) Date\Time : Mon, 09 May 2016 - 2:43pm
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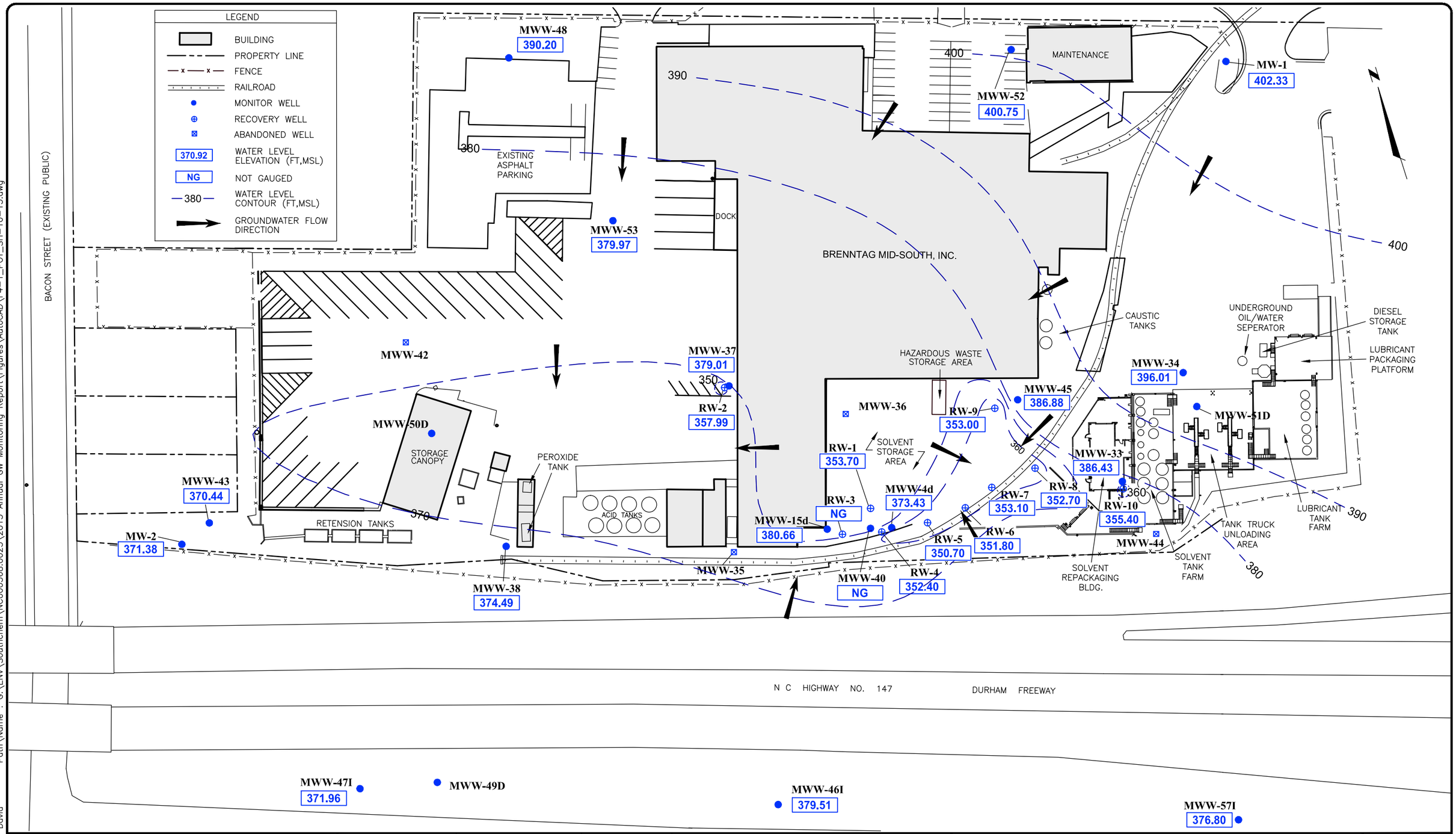

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SCALE:

SCALE IN FEET
0 80 160

BRENNTAG MID-SOUTH FACILITY
(FORMER SOUTHCHEM FACILITY)
DURHAM, NORTH CAROLINA

GROUNDWATER CONTOUR MAP
OF THE SURFICIAL AQUIFER
DECEMBER 1, 2015

FIGURE:
4-1

Acad Version : R18.1s (LMS Tech) Date\Time : Mon, 09 May 2016 - 3:11pm
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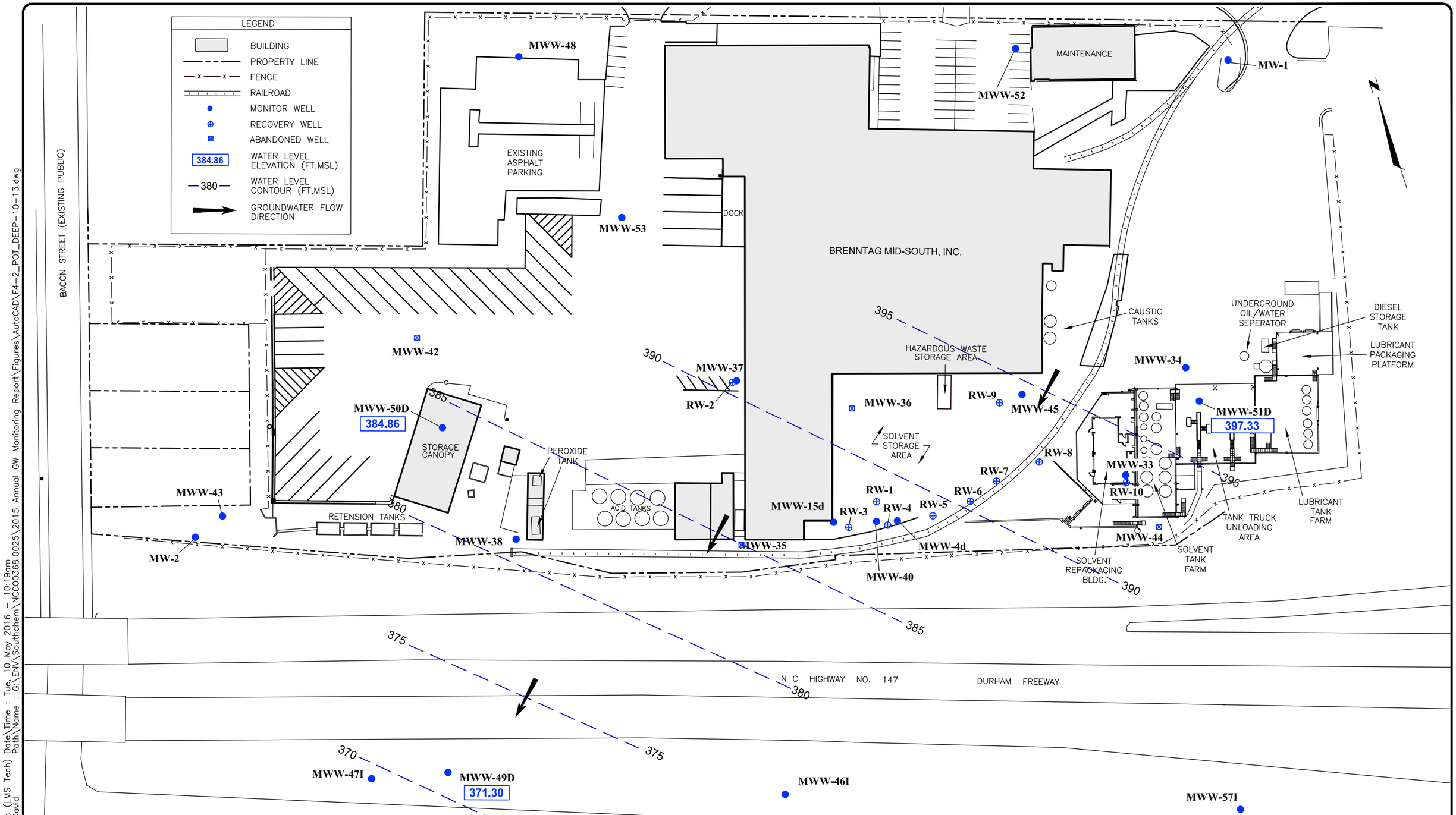

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NOTES:

SCALE IN FEET
0 80 160

BRENNTAG MID-SOUTH FACILITY
(FORMER SOUTHCHEM FACILITY)
DURHAM, NORTH CAROLINA

GROUNDWATER CONTOUR MAP OF THE BEDROCK AQUIFER DECEMBER 1, 2015

FIGURE:
4-2

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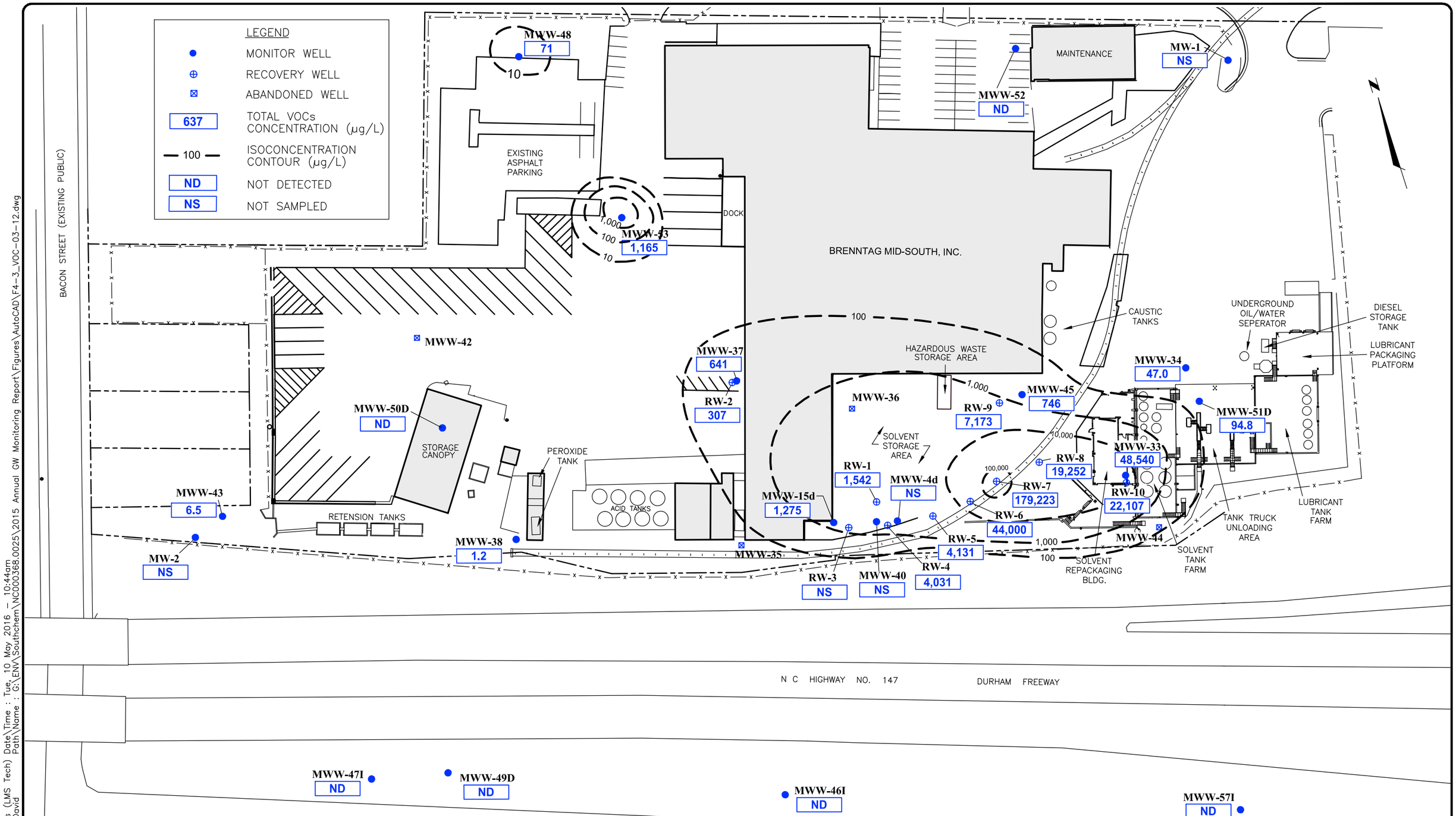

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NOTES:

SCALE IN FEET
0 80 160

BRENNTAG MID-SOUTH FACILITY
(FORMER SOUTHCHEM FACILITY)
DURHAM, NORTH CAROLINA

TOTAL VOCs ISOCONCENTRATION CONTOUR MAP DECEMBER 2015

FIGURE:
4-3

Acad Version : R18.1s (LMS Tech) Date\Time : Tue, 10 May 2016 - 10:44am
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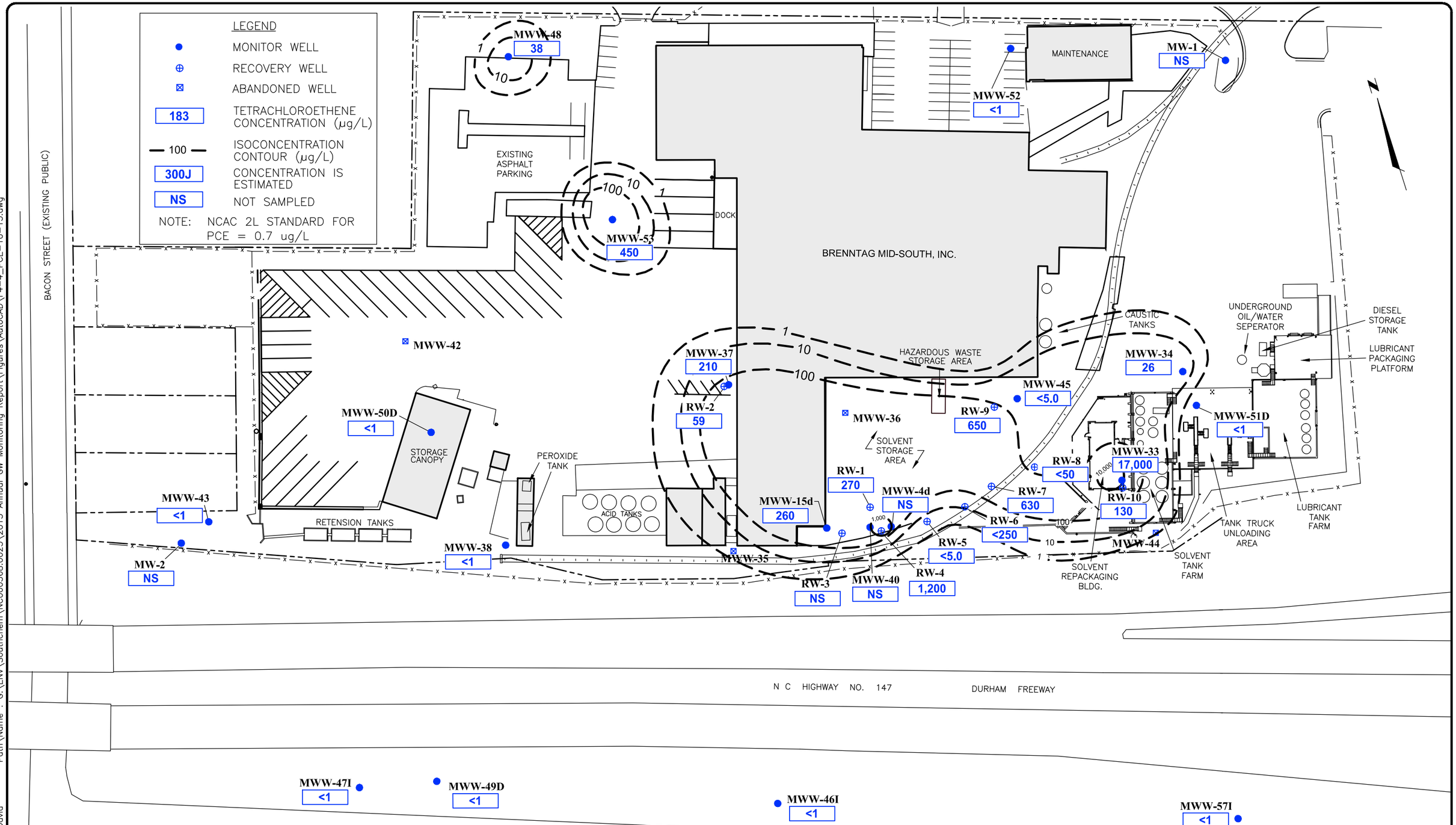

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NOTES:

SCALE IN FEET
0 80 160

BRENNTAG MID-SOUTH FACILITY
(FORMER SOUTHCHEM FACILITY)
DURHAM, NORTH CAROLINA

TETRACHLOROETHENE
ISOCONCENTRATION CONTOUR MAP
DECEMBER 2015

FIGURE:
4-4

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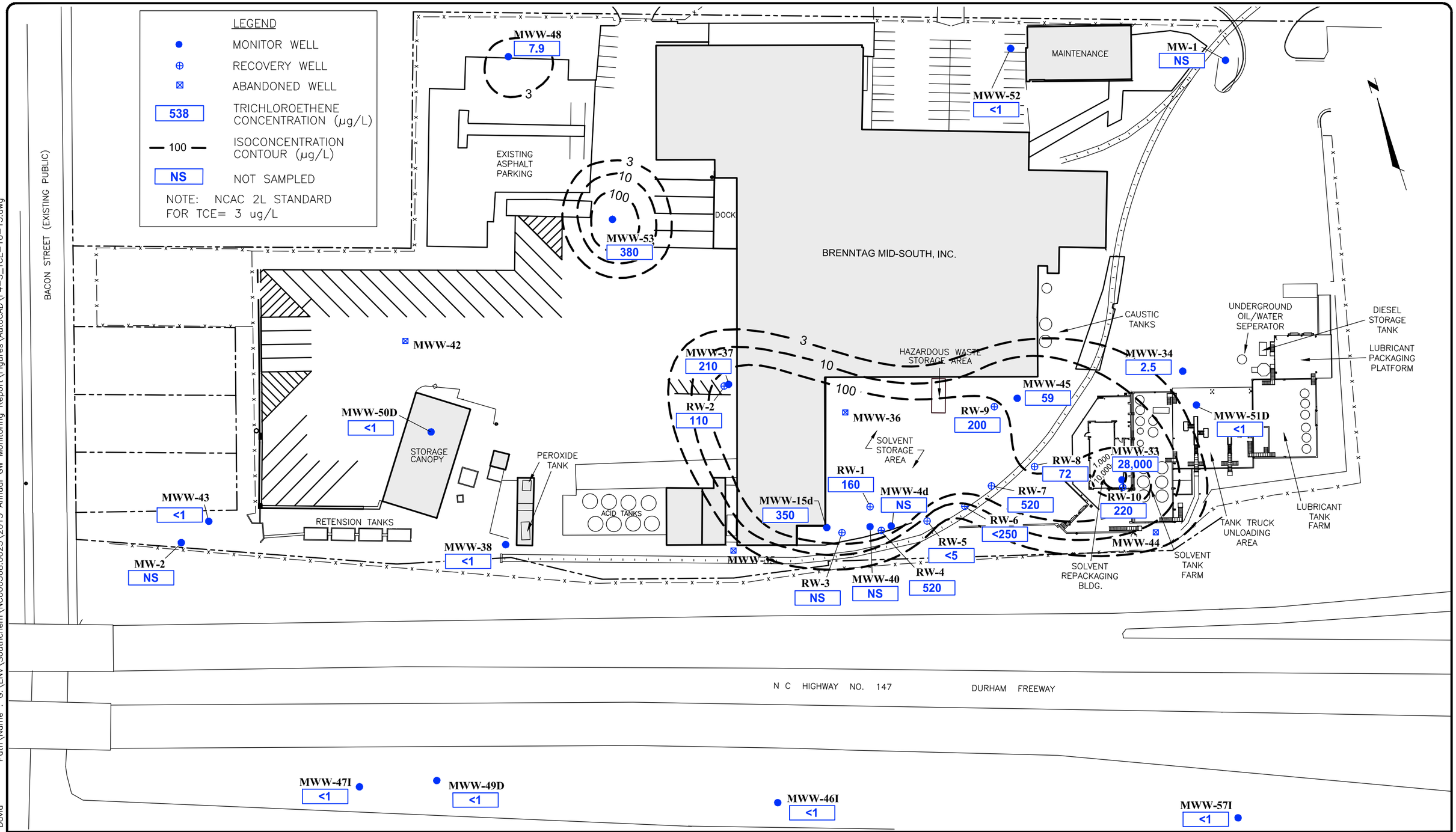

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NOTES:

SCALE IN FEET
0 80 160

BRENNTAG MID-SOUTH FACILITY
(FORMER SOUTHCHEM FACILITY)
DURHAM, NORTH CAROLINA

TRICHLOROETHENE
ISOCONCENTRATION CONTOUR MAP
DECEMBER 2015

FIGURE:
4-5

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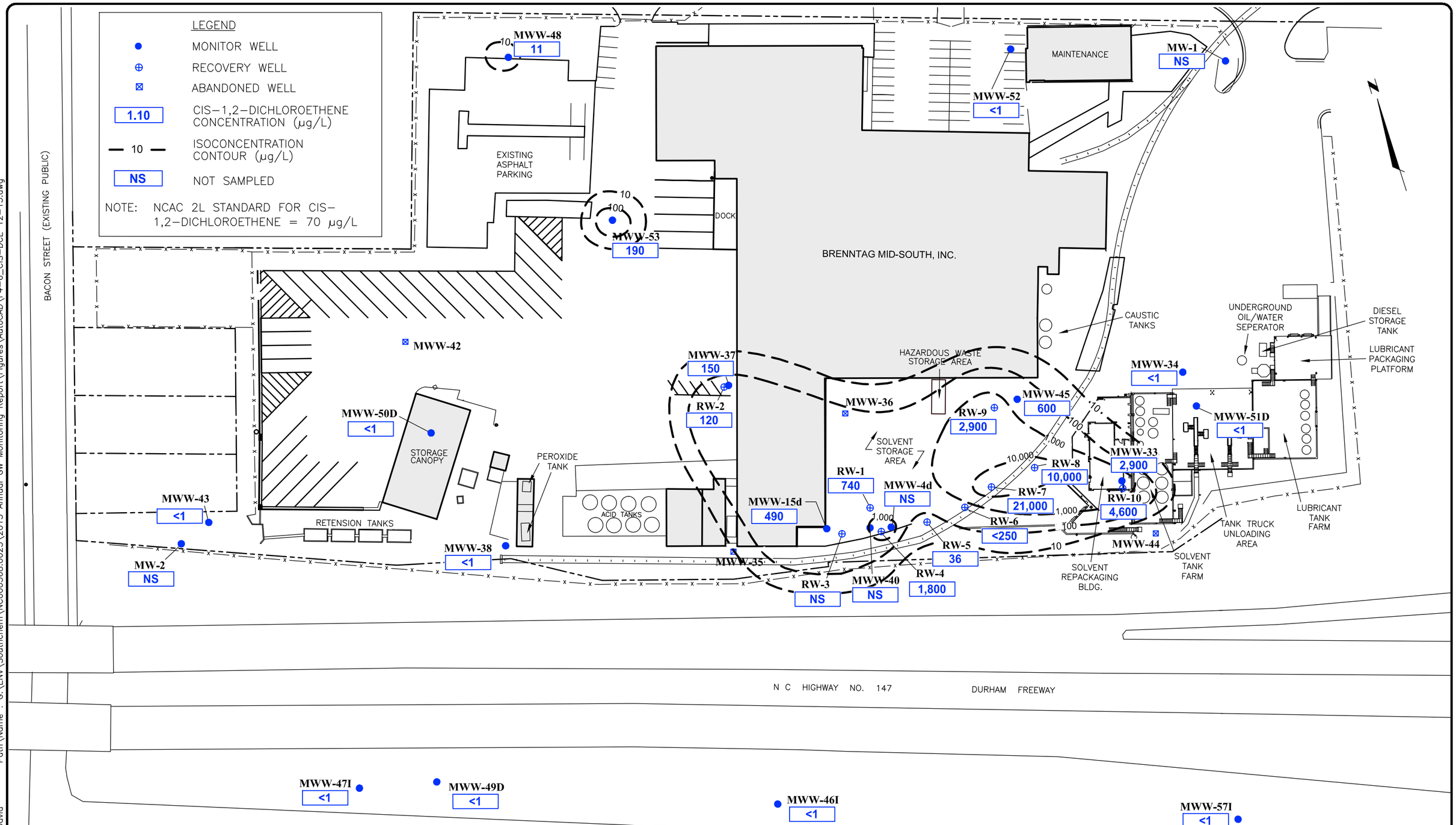

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PRJT MANAGER: J. SHILLIDAY	CHECKED BY: D. RHODES	DRAFTER: D. TWAMLEY	PROJECT NUMBER: NC000368.0025.00004

NOTES:

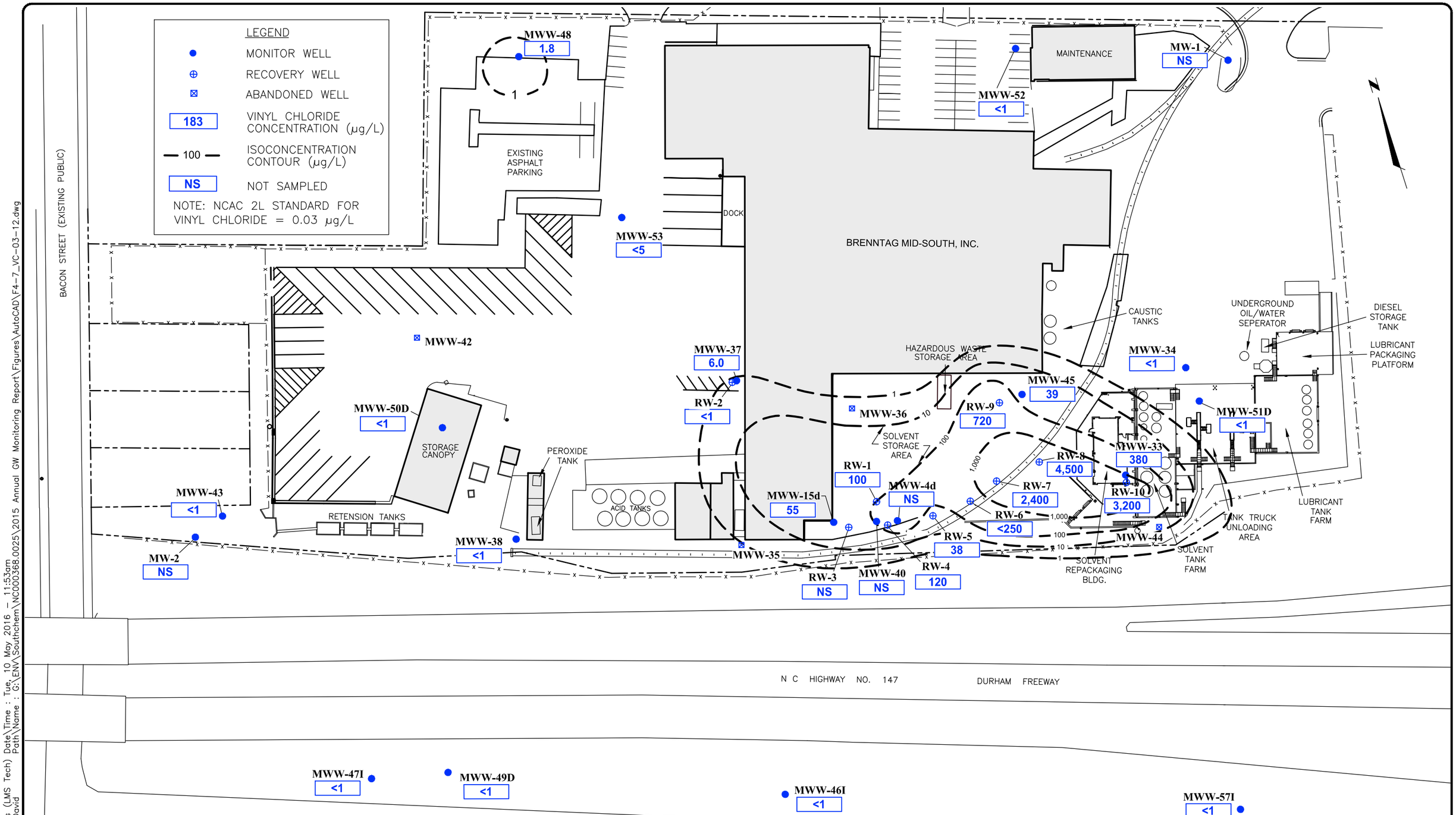
SCALE IN FEET
0 80 160

BRENNTAG MID-SOUTH FACILITY
(FORMER SOUTHCHEM FACILITY)
DURHAM, NORTH CAROLINA

CIS-1,2-DICHLOROETHENE
ISOCONCENTRATION CONTOUR MAP
DECEMBER 2015

FIGURE:
4-6

Acad Version : R18.1s (LMS Tech) Date\Time : Tue, 10 May 2016 - 11:42am
User Name: Twamley, David Path\Name : G:\ENV\Southchem\NC000368.0025\2015 Annual GW Monitoring Report\Figures\AutoCAD\F4-6_CIS-DCE 12-15.dwg



Acad Version : R18.1s (LMS Tech) Date\Time : Tue, 10 May 2016 – 11:53am
User Name: Twamley, David Path\Name : G:\ENV\Southchem\NC000368.0025\2015 Annual GW Monitoring Report\Figures\AutoCAD\F4-7_VC-03-12.dwg

ARCADIS

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive, Suite 300
Raleigh, NC 27607
Tel: 919-854-1282 Fax: 919-854-5448
www.arcadis-us.com

PRJT MANAGER: J. SHILLIDAY	CHECKED BY:	DRAFTER: D. TWAMLEY	PROJECT NUMBER: NC000368.0025.00004

NOTES:

SCALE IN FEET
0 80 160

BRENNTAG MID-SOUTH FACILITY
(FORMER SOUTHCHEM FACILITY)
DURHAM, NORTH CAROLINA

VINYL CHLORIDE
ISOCONCENTRATION CONTOUR MAP
DECEMBER 2015

FIGURE:
4-7

Appendix A

Discharge Monitoring Reports:
January through December 2015

Chronic Toxicity Testing Reports:
February, April, July, and October 2015

ARCADIS
Infrastructure, environment, facilities

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

ATTN: Central Files
Division of Water Quality
North Carolina Department of Environment and Natural Resources
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Subject:
Discharge Monitoring Report for January 2015, Brenntag Mid-South Facility
2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827

Date:
February 25, 2015

Contact:
James E. Shilliday, III

Phone:
Ext. 2302

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0024

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Discharge Monitoring Report (DMR) for the month of January 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina.

During January 2015, the groundwater remediation system was non-operational for the entire month due to persistent subfreezing conditions and weather related maintenance activities. The system was deactivated on December 31, 2014, to prevent freezing inside the conveyance lines, air stripper tower and filter vessels due to inclement weather, and remained deactivated through the end of the month.

An NPDES sampling event was not performed in January 2015 because the groundwater remediation system was shut down for the entire month. In order to meet the requirements of the NPDES permit, sampling will be performed in February 2015. The sampling event that will be conducted in February 2015 will include the quarterly sampling parameters and chronic toxicity testing.

If you have any questions regarding the information in this letter or presented on the DMR, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Vincent Price (Brenntag Mid-South, Inc.)

EFFLUENT

NPDES PERMIT NO. NC0086827 DISCHARGE NO. 001 MONTH January YEAR 2015
FACILITY NAME Brenntag Mid-South, Inc CLASS PC-1 COUNTY Durham
CERTIFIED LABORATORY (1) _____ CERTIFICATION NO. _____
(list additional laboratories on the backside/page 2 of this form)
OPERATOR IN RESPONSIBLE CHARGE (ORC) Vincent Price GRADE PC-1 CERTIFICATION NO. 1001051
PERSON(S) COLLECTING SAMPLES _____ ORC PHONE (919) 596-0681

CHECK BOX IF ORC HAS CHANGED * ☐ **NO FLOW / DISCHARGE FROM SITE *** [X]

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER QUALITY
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

x _____ 2-24-15
(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	Operator Arrival Time 2400 Clock	Operator Time On Site	ORC On Site? **	50050 FLOW EFF ■ INF □ DAILY RATE	00530 Total Suspended Solids (mg/L)	00556 Oil and Grease (mg/L)	01045 Iron (mg/L)	01055 Manganese (mg/L)	01092 Zinc (mg/L)	00400 pH (SU)	81552 Acetone (µg/L)	34030 Benzene (µg/L)	81686 cis-1,2-Dichloroethene (µg/L)	34501 1,1-Dichloroethene (µg/L)	78389 Tetrachloroethene (µg/L)	39180 Trichloroethene (µg/L)	34010 Toluene (µg/L)	39175 Vinyl Chloride (µg/L)	81551 Total Xylenes (µg/L)	39100 Bis(2-ethylhexyl)phthalate (µg/L)	TGP3B Chronic Toxicity (pass/fail)
	HRS	HRS	Y/B/N	MGD																	
1				0.0000								NO FLOW									
2				0.0000																	
3				0.0000																	
4				0.0000																	
5	800	1	Y	0.0000																	
6				0.0000																	
7				0.0000																	
8				0.0000																	
9				0.0000																	
10				0.0000																	
11				0.0000																	
12	900	1	Y	0.0000																	
13				0.0000																	
14				0.0000																	
15				0.0000																	
16				0.0000																	
17				0.0000																	
18				0.0000																	
19				0.0000																	
20	1100	1	Y	0.0000																	
21	800	1	Y	0.0000																	
22				0.0000																	
23				0.0000																	
24				0.0000																	
25				0.0000																	
26				0.0000																	
27				0.0000																	
28				0.0000																	
29				0.0000																	
30	1500	1	Y	0.0000																	
31				0.0000																	
AVERAGE				0.0000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAXIMUM				0.0000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MINIMUM				0.0000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Comp (C) / Grab (G)					G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Monthly Limit				0.0144	30	NE	NE	0.200	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	pass

Note: The groundwater remediation system remained deactivated throughout the month of January 2015 due to inclement weather and maintenance related issues.

Facility Status: (Please check one of the following)

All monitoring data and sampling frequencies meet permit requirements (including weekly averages, if applicable) [X] Compliant

All monitoring data and sampling frequencies do NOT meet permit requirements [ ] Noncompliant

The permittee shall report to the Director or the appropriate Regional Office any noncompliance that potentially threatens public health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

If the facility is noncompliant, please attach a list of corrective actions being taken and a time-table for improvements to be made as required by Part II.E.6 of the NPDES permit.

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Vincent Price
Permittee **(Please print or type)**

2-24-15
Signature of Permittee*** Date
(Required unless submitted electronically)

Permittee Address	Phone Number	e-mail address	Permit Expiration Date
Brenntag Mid-South, Inc. 2000 East Pettigrew Street, Durham, NC 27703	(919) 596-0681		April 30, 2016

ADDITIONAL CERTIFIED LABORATORIES

Certified Laboratory (2) _____ Certification No. _____
Certified Laboratory (3) _____ Certification No. _____
Certified Laboratory (4) _____ Certification No. _____
Certified Laboratory (5) _____ Certification No. _____

PARAMETER CODES

Parameter Code assistance may be obtained by calling the NPDES Unit at (919) 733-5083 or by visiting the Surface Water Protection Section's web site at h2o.enr.state.nc.us/wqs and linking to the unit's information pages.

Use only units of measurement designated in the reporting facility's NPDES permit for reporting data.

* **No Flow/Discharge From Site:** Check this box if no discharge occurs and, as a result, there are no data to be entered for all of the parameters on the DMR for the entire monitoring period.

** **ORC On Site?:** ORC must visit facility and document visitation of facility as required per 15A NCAC 8G .0204.

*** **Signature of Permittee:** If signed by other than the permittee, then the delegation of the signatory authority must be on file with the state per 15A NCAC 2B .0506(b)(2)(D).

Effluent Toxicity Report Form- Chronic Pass/Fail and Acute LC50

Date 1/30/2015

Facility Brenntag Mid-South NPDES#NC 0086827 Pipe # 001 County Durham

Laboratory Performing Test

x

Signature of Operator in Responsible Charge

x

Signature of Laboratory Supervisor

Comments No flow during January 2015

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Water Quality
N.C. DENR
1621 Mail Service Center
Raleigh, North Carolina 27699-1621

North Carolina *Ceriodaphnia* Chronic Pass/Fail Reproduction Toxicity Test

CONTROL ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced												
Adult (L)ive (D)ead												

Effluent%

TREATMENT 2 ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced												
Adult (L)ive (D)ead												

Chronic Test Results

Calculated t

Tabular t

% Reduction

%Mortality	Avg.Reprod.
Control	Control
Treatment 2	Treatment 2

Control CV

% control organisms producing 3rd brood

PASS FAIL

Check One

pH	1st sample		1st sample		2nd sample	
	start	end	start	end	start	end
Control						
Treatment 2						

D.O.	1st sample		1st sample		2nd sample	
Control						
Treatment 2						

Complete This For Either Test

Test Start Date / /

Collection (Start) Date

Sample 1 / / Sample 2 / /

Sample Type/Duration

	Grab	Comp.	Duration
Sample 1			
Sample 2			

	Dilution	1st Tox Sample	2nd Tox Sample (Pass/Fail Only)
Hardness(mg/l)			
Spec.Cond.(µmhos)			
Chlorine(mg/l)			
Sample temp. at receipt			

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

%	%	%	%	%	%	%	%	%	%	Concentration
%	%	%	%	%	%	%	%	%	%	Mortality

Note: Please Complete This Section Also

LC50=_____%

95% Confidence Limits

_____%-_____%

Method of Determination

Moving Average ☐ Probit ☐

Spearman Karber ☐ Other_____

	start/end		start/end
Control			
High Conc.			
	pH		D.O.

Organism Tested _____ Duration (hrs)_____

DWQ form AT-1 (3/87) rev. 11/95

ARCADIS
Infrastructure, environment, facilities

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

North Carolina Department of Environment and Natural Resources
Division of Water Quality
Environmental Sciences Branch
1621 Mail Service Center
Raleigh, North Carolina 27699-1621

Subject:
Chronic Toxicity Testing Report for January 2015, Brenntag Mid-South Facility, 2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827
Durham County

Date:
February 25, 2015

Contact:
Jim Shilliday

Phone:
Ext. 2302

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0024

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Division of Environmental Management (DEM) form AT-1 for the month of January 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina.

During January 2015, the groundwater remediation system was non-operational for the entire month due to persistent subfreezing conditions and weather related maintenance/repair activities. The system was deactivated on December 31, 2014, to prevent freezing inside the conveyance lines, air stripper tower and filter vessels due to inclement weather, and remained deactivated through the end of the month.

An NPDES sampling event was not performed in January 2015 because the groundwater remediation system was shut down for the entire month. In order to meet the requirements of the NPDES permit, sampling will be performed in February 2015. The sampling event that will be conducted in February 2015 will include the quarterly NPDES sampling parameters and chronic toxicity testing.

If you have any questions regarding the information in this letter or presented on the chronic toxicity test report, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

For
James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Vincent Price (Brenntag Mid-South, Inc.)

Part of a bigger picture

Effluent Toxicity Report Form- Chronic Pass/Fail and Acute LC50

Date 1/30/2015

Facility Brenntag Mid-South NPDES#NC 0086827 Pipe # 001 County Durham

Laboratory Performing Test

x

Signature of Operator in Responsible Charge

x

Signature of Laboratory Supervisor

Comments No flow during January 2015

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Water Quality
N.C. DENR
1621 Mail Service Center
Raleigh, North Carolina 27699-1621

North Carolina *Ceriodaphnia* Chronic Pass/Fail Reproduction Toxicity Test

CONTROL ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced												
Adult (L)ive (D)ead												

Effluent%

TREATMENT 2 ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced												
Adult (L)ive (D)ead												

Chronic Test Results

Calculated t

Tabular t

% Reduction

%Mortality	Avg.Reprod.
Control	Control
Treatment 2	Treatment 2

Control CV

% control organisms producing 3rd brood

PASS	FAIL

Check One

pH	1st sample		1st sample		2nd sample	
Control						
Treatment 2						
	start	end	start	end	start	end

D.O.	1st sample		1st sample		2nd sample	
Control						
Treatment 2						

Complete This For Either Test

Test Start Date / /

Collection (Start) Date

Sample 1 / / Sample 2 / /

Sample Type/Duration

	Grab	Comp.	Duration
Sample 1			
Sample 2			

	Dilution	1st Tox Sample	2nd Tox Sample (Pass/Fail Only)
Hardness(mg/l)			
Spec.Cond.(µmhos)			
Chlorine(mg/l)			
Sample temp. at receipt			

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

%	%	%	%	%	%	%	%	%	%	Concentration
%	%	%	%	%	%	%	%	%	%	Mortality

Note: Please Complete This Section Also

LC50=_____%

95% Confidence Limits

_____%-_____%

Method of Determination

Moving Average ☐ Probit ☐

Spearman Karber ☐ Other_____

	start/end		start/end
Control			
High Conc.			
	pH		D.O.

Organism Tested _____ **Duration (hrs)**_____

DWQ form AT-1 (3/87) rev. 11/95

ARCADIS
Infrastructure, environment, facilities

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

North Carolina Department of Environment and Natural Resources
Division of Water Quality
Environmental Sciences Branch
1621 Mail Service Center
Raleigh, North Carolina 27699-1621

Subject:
Chronic Toxicity Testing Report for February 2015, Brenntag Mid-South Facility, 2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827
Durham County

Date:
March 31, 2015

Contact:
Jim Shilliday

Phone:
Ext. 246

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0024

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Division of Environmental Management (DEM) Form AT-1 for the month of February 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is a copy of the laboratory analytical data report for the analytical parameters required by the NPDES permit.

During February 2015, the groundwater remediation system was non-operational for a majority of the month due to persistent subfreezing conditions. The system was initially deactivated on December 31, 2014, to prevent freezing inside the conveyance lines, air stripper tower and filter vessels due to inclement weather. The system was operational from February 10, 2015 to February 12, 2015; however, due to forecasted subfreezing temperatures, the system was deactivated again on February 12, 2015 and remained deactivated through the end of the month. As of February 12, 2015, approximately 7,660,764 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on February 10, 2015. The effluent grab sample collected from the groundwater remediation system on February 10, 2015 was submitted to Test America, Inc. in Savannah Georgia, for analysis of select volatile organic compounds by EPA Method 624; bis(2-ethylhexyl) phthalate by EPA Method 8270LL; total suspended solids by Standard Method 2540D; iron, manganese, and zinc by EPA Method 200.7; oil and grease by EPA Method 1664A; and pH by EPA Method 150.1.

In addition to the monthly sampling activities discussed above, the treatment system effluent was sampled for quarterly chronic toxicity testing on February 10 and 12, 2015. The grab samples collected during this event were delivered in person on February 10 and 12, 2015 to Research & Analytical Laboratories, Inc. in

ARCADIS

Kernersville, North Carolina. The samples were analyzed in accordance with the test procedures outlined in the North Carolina *Ceriodaphnia* Chronic Effluent Toxicity Procedure (revised February 1998). The remediation system effluent samples passed the chronic toxicity test.

As required by the NPDES permit, the remediation system effluent will be sampled again in March 2015 for the standard monthly sampling parameters.

If you have any questions regarding the information in this letter or presented on the chronic toxicity test report, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Vincent Price (Brenntag Mid-South, Inc.)
Project File

Effluent Toxicity Report Form - Chronic Pass/Fail and Acute LC50 Date: 02/19/15

Facility: BRENNTAG SOUTHCHEM NPDES#: NC0086827 Pipe#: 001 County: DURHAM

Laboratory Performing Test: R & A LABORATORIES, INC.

X _____
Signature of Operator in Responsible Charge

X _____
Signature of Laboratory Supervisor

Comments: Final Effluent

An Arcadis Project

* PASSED: 2.21% Reduction *

Work Order: 830-01/918-0

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Environmental Management
N.C. Dept. of EHNR
1621 Mail Service Ctr
Raleigh, North Carolina 27699-1621

North Carolina Ceriodaphnia
Chronic Pass/Fail Reproduction Toxicity Test

CONTROL ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	23	22	21	23	21	24	22	22	23	25	22	24
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Effluent %: 90%

TREATMENT 2 ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	23	21	23	22	21	24	25	21	23	21	22	20
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Chronic Test Results
Calculated t = 0.905
Tabular t = 2.508
% Reduction = 2.21

% Mortality	Avg.Reprod.
0.00 Control	22.67 Control
0.00 Treatment 2	22.17 Treatment 2

Control CV 5.431%

% control orgs producing 3rd brood 100%

PASS	FAIL
X	
Check One	

pH	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	6.93	7.01	6.92	7.01	6.95	7.03
Treatment 2	7.37	7.46	7.68	7.77	7.69	7.78

D.O.	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	8.5	8.3	8.5	8.3	8.6	8.4
Treatment 2	8.4	8.2	8.4	8.2	8.4	8.2

Complete This For Either Test
Test Start Date: 02/11/15
Collection (Start) Date
Sample 1: 02/10/15 Sample 2: 02/12/15
Sample Type/Duration

	Grab	Comp.	Duration
Sample 1	X		hrs
Sample 2	X		hrs

	DILUT	1st SAMP	2nd P/F SAMP
Hardness (mg/l)	48		
Spec. Cond. (µmhos)	192	2581	1048
Chlorine (mg/l)		0.02	0.03
Sample temp. at receipt (°C)		3.3	2.3

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

%	%	%	%	%	%	%	%	%	%	Concentration
%	%	%	%	%	%	%	%	%	%	Mortality

Note: Please Complete This Section Also

LC50 = _____%
95% Confidence Limits
_____% -- _____%

Method of Determination
Moving Average __ Probit __
Spearman Karber __ Other ____

	pH start	pH end		D.O. start	D.O. end
			Control		
			High Conc.		

Organism Tested: Ceriodaphnia dubia Duration(hrs): _____

Copied from DEM form AT-1 (3/87) rev. 11/95 (DUBIA ver. 4.32)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Quarterly)

TestAmerica Job ID: 680-109839-1

Client Sample ID: Effluent

Lab Sample ID: 680-109839-4

Date Collected: 02/10/15 11:34
Date Received: 02/11/15 09:39

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			02/12/15 16:41	1
Benzene	1.0	U	1.0		ug/L			02/12/15 16:41	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			02/12/15 16:41	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			02/12/15 16:41	1
Tetrachloroethene	1.0	U	1.0		ug/L			02/12/15 16:41	1
Toluene	1.0	U	1.0		ug/L			02/12/15 16:41	1
Trichloroethene	1.0	U	1.0		ug/L			02/12/15 16:41	1
Vinyl chloride	1.0	U	1.0		ug/L			02/12/15 16:41	1
Xylenes, Total	2.0	U	2.0		ug/L			02/12/15 16:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*79 - 119*		*02/12/15 16:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*		*02/12/15 16:41*	*1*
4-Bromofluorobenzene (Surr)	*90*		*71 - 121*		*02/12/15 16:41*	*1*
Dibromofluoromethane (Surr)	*103*		*77 - 129*		*02/12/15 16:41*	*1*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**0.85**		0.48		ug/L		02/16/15 15:43	02/18/15 22:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5 (Surr)	*61*		*27 - 130*	*02/16/15 15:43*	*02/18/15 22:31*	*1*
Nitrobenzene-d5 (Surr)	*64*		*32 - 130*	*02/16/15 15:43*	*02/18/15 22:31*	*1*
Terphenyl-d14 (Surr)	*83*		*36 - 130*	*02/16/15 15:43*	*02/18/15 22:31*	*1*
2,4,6-Tribromophenol (Surr)	*80*		*30 - 130*	*02/16/15 15:43*	*02/18/15 22:31*	*1*
2-Fluorophenol (Surr)	*57*		*25 - 130*	*02/16/15 15:43*	*02/18/15 22:31*	*1*
2-Fluorobiphenyl	*71*		*34 - 130*	*02/16/15 15:43*	*02/18/15 22:31*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.10	U	0.10		mg/L		02/12/15 09:00	02/12/15 21:07	1
Manganese	**0.37**		0.010		mg/L		02/12/15 09:00	02/12/15 21:07	1
Zinc	**0.026**		0.020		mg/L		02/12/15 09:00	02/12/15 21:07	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.74**	**HF**			SU			02/14/15 09:55	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	4.7	U	4.7		mg/L		02/19/15 10:50	02/19/15 15:06	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	5.0	U	5.0		mg/L			02/12/15 10:51	1

ARCADIS
Infrastructure, environment, facilities

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

ATTN: Central Files
Division of Water Quality
North Carolina Department of Environment and Natural Resources
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Subject:
Discharge Monitoring Report for February 2015, Brenntag Mid-South Facility
2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827

Date:
March 31, 2015

Contact:
James E. Shilliday, III

Phone:
Ext. 2302

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0024

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Discharge Monitoring Report (DMR) for the month of February 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina.

During February 2015, the groundwater remediation system was deactivated for a majority of the month due to persistent subfreezing conditions. The system was operational for a period of approximately 48 hours, between February 10 and February 12, 2015, to allow for performance of the NPDES sampling event. The system remained deactivated throughout the rest of the month due to inclement weather and ongoing maintenance activities. As of February 12, 2015, approximately 7,660,764 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on February 10, 2015. The effluent grab sample collected from the groundwater remediation system on February 10, 2015 was submitted to Test America, Inc. in Savannah Georgia, for analysis of select volatile organic compounds by EPA Method 624; bis(2-ethylhexyl) phthalate by EPA Method 8270LL; total suspended solids by Standard Method 2540D; iron, manganese, and zinc by EPA Method 200.7; oil and grease by EPA Method 1664A; and pH by EPA Method 150.1. The results of the February 10, 2015 sampling activities are summarized on the DMR form included as Attachment 1. The laboratory analytical report is included as Attachment 2.

In addition to the monthly sampling activities discussed above, the treatment system effluent was sampled for quarterly chronic toxicity testing on February 10 and 12, 2015. The grab samples collected during this event were delivered in person on February 10 and 12, 2015 to Research & Analytical Laboratories, Inc. in Kernersville, North Carolina. The samples were analyzed in accordance with the test procedures outlined in the North Carolina Ceriodaphnia Chronic Effluent Toxicity Procedure (revised February 1998). The results of the chronic toxicity testing are reported on Form AT-1 (Attachment 3).

As outlined in the DMR and Form AT-1, the treatment system effluent sampling results complied with the NPDES permit conditions for all parameters, with the exception of manganese. Manganese was detected at a concentration of 0.370 milligrams per liter [mg/L] during the February 10, 2015 sampling event, which exceeds the NPDES permit's monthly concentration limit of 0.200 mg/L.

Prior to collection of the effluent grab sample on February 10, 2015, the groundwater remediation system had been deactivated for a period of 40 days (December 31, 2014 through February 10, 2015), due to an extended period of subfreezing temperatures. Because the groundwater remediation system was deactivated for the entire month of January 2015, an NPDES sampling event that included the quarterly parameter list was not performed in January. In order to meet the time constraints associated with the chronic toxicity testing method and the weather-related downtime, the quarterly NPDES sampling event was scheduled to occur on February 10, 2015. ARCADIS attempted to restart the system on February 2, 2015, prior to the quarterly sampling event; however, freeze-related damage to the effluent totalizer was discovered. As a result, the system could not be restarted and remained deactivated until the totalizer could be replaced. A new totalizer was installed on February 10, 2015, just prior to performing the NPDES sampling event. Based on system flow calculations, a relatively small volume of water had passed through the system between the time of startup and the time of sample collection on February 10, 2015. The system was operational from February 10 to February 12, 2015, at which point it was shut down in anticipation of subfreezing temperatures forecasted. The system remained deactivated through the end of the month of February due to an extended period of subfreezing temperatures.

ARCADIS first learned of the manganese exceedance on February 24, 2015, following receipt of the laboratory analytical report for the February 2015 sampling event. Upon learning that the February 10, 2015 manganese concentration had exceeded the permit's established concentration limit, ARCADIS personnel mobilized to the site and performed a detailed inspection of the groundwater remediation system. During the inspection it was discovered that elevated levels of suspended solids had passed through the air stripper, carbon vessels, and bag filter chambers and had collected in the manganese treatment vessels prior to discharge. The elevated suspended solids content in the manganese treatment vessels significantly reduced the treatment efficiency of the selective resin. ARCADIS immediately took corrective actions, which included backwashing the resin vessels to remove the solids and replacing the bag filters throughout the treatment train.

Based on the results of the system inspection, it appears that fouling likely occurred within the conveyance lines during the extended period of downtime as evidenced by heavy particle loading of the influent stream and backpressure at the bag filter housing unit, which was observed at the time of the system restart on February 10, 2015. Additionally, the cloth bag filter, which is located on the inlet to the groundwater remediation system, had to be replaced multiple times immediately

following system restart as the conveyance piping was flushed of scale and sediment, which is atypical of the system conditions. As a result, the manganese concentration reported for the effluent sample collected on February 10, 2015 was an anomaly that likely resulted from heavy particulate loading in the resin vessels.

To prevent future breakthrough events, ARCADIS will implement a preventative maintenance program that will include periodic backwashing of the activated carbon and manganese treatment vessels to remove any accumulation of solids and replacing the intermediate bag filter on a more frequent basis. ARCADIS will also closely monitor suspended solids levels in the treatment system influent, especially following periods of extended deactivation, to help identify the potential need for additional maintenance activities.

As required by the NPDES permit, the remediation system effluent will be sampled again in March 2015 for the standard monthly sampling parameters.

If you have any questions regarding the information in this letter or presented on the DMR, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Vincent Price (Brenntag Mid-South, Inc.)

Attachment 1

Discharge Monitoring Report,
February 2015

EFFLUENT

NPDES PERMIT NO. NC0086827 DISCHARGE NO. 001 MONTH February YEAR 2015
FACILITY NAME Brenntag Mid-South, Inc CLASS PC-1 COUNTY Durham
CERTIFIED LABORATORY (1) Test America, Inc. CERTIFICATION NO. 269
(list additional laboratories on the backside/page 2 of this form)
OPERATOR IN RESPONSIBLE CHARGE (ORC) Vincent Price GRADE PC-1 CERTIFICATION NO. 1001051
PERSON(S) COLLECTING SAMPLES Dave Twamley (ARCADIS) ORC PHONE (919) 596-0681
CHECK BOX IF ORC HAS CHANGED ☐ **NO FLOW / DISCHARGE FROM SITE *** ☐

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER QUALITY
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

x Vincent Price 3-31-15
(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	Operator Arrival Time 2400 Clock	Operator Time On Site	ORC On Site? **	50050 FLOW EFF ☒ INF ☐ DAILY RATE	00530 Total Suspended Solids (mg/L)	00556 Oil and Grease (mg/L)	01045 Iron (mg/L)	01055 Manganese (mg/L)	01092 Zinc (mg/L)	00400 pH (SU)	81552 Acetone (µg/L)	34030 Benzene (µg/L)	81686 cis-1,2-Dichloroethene (µg/L)	34501 1,1-Dichloroethene (µg/L)	78389 Tetrachloroethene (µg	39180 Trichloroethene (µg/L)	34010 Toluene (µg/L)	39175 Vinyl Chloride (µg/L)	81551 Total Xylenes (µg/L)	39100 Bis(2-ethylhexyl)phthalate (ug/L)	TGP3B Chronic Toxicity (pass/fail)
	HRS	HRS	Y/B/N	MGD																	
1				0.0000																	
2	800	1	Y	0.0000																	
3				0.0000																	
4				0.0000																	
5				0.0000																	
6				0.0000																	
7				0.0000																	
8				0.0000																	
9				0.0000																	
10	1300	1	Y	0.0000	<5.0	<4.7	<0.10	0.37	0.026	7.74	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	0.85	pass
11				0.0015																	
12	1100	1	Y	0.0015																	
13				0.0000																	
14				0.0000																	
15				0.0000																	
16	800	1	Y	0.0000																	
17				0.0000																	
18				0.0000																	
19				0.0000																	
20				0.0000																	
21				0.0000																	
22				0.0000																	
23				0.0000																	
24				0.0000																	
25	800	1	Y	0.0000																	
26				0.0000																	
27				0.0000																	
28				0.0000																	
29																					
30																					
31																					
AVERAGE				0.0001	<5.0	<4.7	<0.10	0.37	0.026	7.74	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	0.85	pass
MAXIMUM				0.0015	<5.0	<4.7	<0.10	0.37	0.026	7.74	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	0.85	pass
MINIMUM				0.0000	<5.0	<4.7	<0.10	0.37	0.026	7.74	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	0.85	pass
Comp (C) / Grab (G)					G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Monthly Limit				0.0144	30	NE	NE	0.200	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	pass

Note: The groundwater remediation system remained deactivated through the majority of the month of February 2015 due to inclement weather and maintenance related issues.

Facility Status: (Please check one of the following)

All monitoring data and sampling frequencies meet permit requirements (including weekly averages, if applicable) [ ] Compliant

All monitoring data and sampling frequencies do NOT meet permit requirements [X] Noncompliant

The permittee shall report to the Director or the appropriate Regional Office any noncompliance that potentially threatens public health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

If the facility is noncompliant, please attach a list of corrective actions being taken and a time-table for improvements to be made as required by Part II.E.6 of the NPDES permit.

The reason for the noncompliance and the corrective actions taken are discussed on page 3 of this DMR.

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Vincent Price
Permittee **(Please print or type)**

Vincent P 3-31-15
Signature of Permittee*** Date
(Required unless submitted electronically)

Permittee Address	Phone Number	e-mail address	Permit Expiration Date
Brenntag Mid-South, Inc. 2000 East Pettigrew Street, Durham, NC 27703	(919) 596-0681		April 30, 2016

ADDITIONAL CERTIFIED LABORATORIES

Certified Laboratory (2)	R&A Laboratories	Certification No.	34
Certified Laboratory (3)		Certification No.	
Certified Laboratory (4)		Certification No.	
Certified Laboratory (5)		Certification No.	

PARAMETER CODES

Parameter Code assistance may be obtained by calling the NPDES Unit at (919) 733-5083 or by visiting the Surface Water Protection Section's web site at h2o.enr.state.nc.us/wqs and linking to the unit's information pages.

Use only units of measurement designated in the reporting facility's NPDES permit for reporting data.

* **No Flow/Discharge From Site:** Check this box if no discharge occurs and, as a result, there are no data to be entered for all of the parameters on the DMR for the entire monitoring period.

** **ORC On Site?:** ORC must visit facility and document visitation of facility as required per 15A NCAC 8G .0204.

*** **Signature of Permittee:** If signed by other than the permittee, then the delegation of the signatory authority must be on file with the state per 15A NCAC 2B .0506(b)(2)(D).

As outlined in the DMR and Form AT-1, the treatment system effluent sampling results complied with the NPDES permit conditions for all parameters, with the exception of manganese. Manganese was detected at a concentration of 0.370 milligrams per liter [mg/L] during the February 10, 2015 sampling event, which exceeds the NPDES permit's monthly concentration limit of 0.200 mg/L.

Prior to collection of the effluent grab sample on February 10, 2015, the groundwater remediation system had been deactivated for a period of 40 days (December 31, 2014 through February 10, 2015), due to an extended period of subfreezing temperatures. Because the groundwater remediation system was deactivated for the entire month of January 2015, an NPDES sampling event that included the quarterly parameter list was not performed in January. In order to meet the time constraints associated with the chronic toxicity testing method and the weather-related downtime, the quarterly NPDES sampling event was scheduled to occur on February 10, 2015. ARCADIS attempted to restart the system on February 2, 2015, prior to the quarterly sampling event; however, freeze-related damage to the effluent totalizer was discovered. As a result, the system could not be restarted and remained deactivated until the totalizer could be replaced. A new totalizer was installed on February 10, 2015, just prior to performing the NPDES sampling event. Based on system flow calculations, a relatively small volume of water had passed through the system between the time of startup and the time of sample collection on February 10, 2015. The system was operational from February 10 to February 12, 2015, at which point it was shut down in anticipation of subfreezing temperatures forecasted. The system remained deactivated through the end of the month of February due to an extended period of subfreezing temperatures.

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To prevent future breakthrough events, ARCADIS will implement a preventative maintenance program that will include periodic backwashing of the activated carbon and manganese treatment vessels to remove any accumulation of solids and replacing the intermediate bag filter on a more frequent basis. ARCADIS will also closely monitor suspended solids levels in the treatment system influent, especially following periods of extended deactivation, to help identify the potential need for additional maintenance activities.

Attachment 2

Laboratory Analytical Report,
February 10, 2015

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Quarterly)

TestAmerica Job ID: 680-109839-1

Client Sample ID: Effluent

Lab Sample ID: 680-109839-4

Date Collected: 02/10/15 11:34
Date Received: 02/11/15 09:39

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			02/12/15 16:41	1
Benzene	1.0	U	1.0		ug/L			02/12/15 16:41	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			02/12/15 16:41	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			02/12/15 16:41	1
Tetrachloroethene	1.0	U	1.0		ug/L			02/12/15 16:41	1
Toluene	1.0	U	1.0		ug/L			02/12/15 16:41	1
Trichloroethene	1.0	U	1.0		ug/L			02/12/15 16:41	1
Vinyl chloride	1.0	U	1.0		ug/L			02/12/15 16:41	1
Xylenes, Total	2.0	U	2.0		ug/L			02/12/15 16:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*79 - 119*		*02/12/15 16:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*		*02/12/15 16:41*	*1*
4-Bromofluorobenzene (Surr)	*90*		*71 - 121*		*02/12/15 16:41*	*1*
Dibromofluoromethane (Surr)	*103*		*77 - 129*		*02/12/15 16:41*	*1*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**0.85**		0.48		ug/L		02/16/15 15:43	02/18/15 22:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5 (Surr)	*61*		*27 - 130*	*02/16/15 15:43*	*02/18/15 22:31*	*1*
Nitrobenzene-d5 (Surr)	*64*		*32 - 130*	*02/16/15 15:43*	*02/18/15 22:31*	*1*
Terphenyl-d14 (Surr)	*83*		*36 - 130*	*02/16/15 15:43*	*02/18/15 22:31*	*1*
2,4,6-Tribromophenol (Surr)	*80*		*30 - 130*	*02/16/15 15:43*	*02/18/15 22:31*	*1*
2-Fluorophenol (Surr)	*57*		*25 - 130*	*02/16/15 15:43*	*02/18/15 22:31*	*1*
2-Fluorobiphenyl	*71*		*34 - 130*	*02/16/15 15:43*	*02/18/15 22:31*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.10	U	0.10		mg/L		02/12/15 09:00	02/12/15 21:07	1
Manganese	**0.37**		0.010		mg/L		02/12/15 09:00	02/12/15 21:07	1
Zinc	**0.026**		0.020		mg/L		02/12/15 09:00	02/12/15 21:07	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.74**	**HF**			SU			02/14/15 09:55	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	4.7	U	4.7		mg/L		02/19/15 10:50	02/19/15 15:06	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	5.0	U	5.0		mg/L			02/12/15 10:51	1

Attachment 3

Effluent Aquatic Toxicity Report Form (Form AT-1)

Effluent Toxicity Report Form - Chronic Pass/Fail and Acute LC50 Date: 02/19/15

Facility: BRENNTAG SOUTHCHEM NPDES#: NC0086827 Pipe#: 001 County: DURHAM

Laboratory Performing Test: R & A LABORATORIES, INC.

x _____
Signature of Operator in Responsible Charge

x _____
Signature of Laboratory Supervisor

Comments: Final Effluent

An Arcadis Project

* PASSED: 2.21% Reduction *

Work Order: 830-01/918-0

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Environmental Management
N.C. Dept. of EHNR
1621 Mail Service Ctr
Raleigh, North Carolina 27699-1621

North Carolina Ceriodaphnia
Chronic Pass/Fail Reproduction Toxicity Test

CONTROL ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	23	22	21	23	21	24	22	22	23	25	22	24
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Effluent %: 90%

TREATMENT 2 ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	23	21	23	22	21	24	25	21	23	21	22	20
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Chronic Test Results
Calculated t = 0.905
Tabular t = 2.508
% Reduction = 2.21

% Mortality	Avg.Reprod.
0.00 Control	22.67 Control
0.00 Treatment 2	22.17 Treatment 2

Control CV 5.431%

% control orgs producing 3rd brood 100%

PASS	FAIL
X	
Check One	

pH	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	6.93	7.01	6.92	7.01	6.95	7.03
Treatment 2	7.37	7.46	7.68	7.77	7.69	7.78

D.O.	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	8.5	8.3	8.5	8.3	8.6	8.4
Treatment 2	8.4	8.2	8.4	8.2	8.4	8.2

Complete This For Either Test
Test Start Date: 02/11/15
Collection (Start) Date
Sample 1: 02/10/15 Sample 2: 02/12/15
Sample Type/Duration

	Grab	Comp.	Duration
Sample 1	X		hrs
Sample 2	X		hrs

	DILUT	1st SAMP	2nd P/F SAMP
Hardness (mg/l)	48		
Spec. Cond. (µmhos)	192	2581	1048
Chlorine (mg/l)		0.02	0.03
Sample temp. at receipt (°C)		3.3	2.3

Note: Please Complete This Section Also

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

%	%	%	%	%	%	%	%	%	%	Concentration
%	%	%	%	%	%	%	%	%	%	Mortality

LC50 = _____ %
95% Confidence Limits
_____ % -- _____ %

Method of Determination
Moving Average __ Probit __
Spearman Karber __ Other ____

	pH start	pH end		D.O. start	D.O. end
			Control		
			High Conc.		

Organism Tested: Ceriodaphnia dubia Duration(hrs): _____

Copied from DEM form AT-1 (3/87) rev. 11/95 (DUBIA ver. 4.32)

ARCADIS
Infrastructure, environment, facilities

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

ATTN: Central Files
Division of Water Quality
North Carolina Department of Environment and Natural Resources
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Subject:
Discharge Monitoring Report for March 2015, Brenntag Mid-South Facility
2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827

Date:
April 29, 2015

Contact:
James E. Shilliday, III

Phone:
Ext. 2302

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0024

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Discharge Monitoring Report (DMR) for the month of March 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina.

During March 2015, the groundwater remediation system was non-operational for the entire month due to ongoing maintenance and pipeline replacement activities. An NPDES sampling event was not performed in March 2015 because the groundwater remediation system was shut down for the entire month. As required by the NPDES permit, the remediation system effluent will be sampled again in April 2015 for the quarterly sampling parameters.

If you have any questions regarding the information in this letter or presented on the DMR, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

FOR

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Vincent Price (Brenntag Mid-South, Inc.)
Bruce Biehl (Brenntag Mid-South, Inc.)

Part of a bigger picture

EFFLUENT

NPDES PERMIT NO. NC0086827 DISCHARGE NO. 001 MONTH March YEAR 2015
FACILITY NAME Brenntag Mid-South, Inc CLASS PC-1 COUNTY Durham
CERTIFIED LABORATORY (1) Test America, Inc CERTIFICATION NO. 387
(list additional laboratories on the backside/page 2 of this form)
OPERATOR IN RESPONSIBLE CHARGE (ORC) Vincent Price GRADE PC-1 CERTIFICATION NO. 1001051
PERSON(S) COLLECTING SAMPLES Dave Twamley (ARCADIS) ORC PHONE (919) 596-0681
CHECK BOX IF ORC HAS CHANGED * ☐ **NO FLOW / DISCHARGE FROM SITE *** ■

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER QUALITY
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

x Vincent R 4-27-15
(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	Operator Arrival Time 2400 Clock	Operator Time Onsite	ORC On Site? **	50050 FLOW EFF ■ INF ☐ DAILY RATE	00530 Total Suspended Solids (mg/L)	00556 Oil and Grease (mg/L)	01055 Manganese (mg/L)
	HRS	HRS	Y/B/N	MGD			
1				0.0000			
2				0.0000			
3				0.0000			
4				0.0000			
5	800	1	Y	0.0000			
6				0.0000			
7				0.0000			
8				0.0000			
9				0.0000			
10				0.0000			
11	900	1	Y	0.0000			
12				0.0000			
13				0.0000			
14				0.0000			
15				0.0000			
16	1700	1	Y	0.0000			
17				0.0000			
18				0.0000			
19				0.0000			
20				0.0000			
21				0.0000			
22				0.0000			
23				0.0000			
24				0.0000			
25	800	1	Y	0.0000			
26	800	1	Y	0.0000			
27				0.0000			
28				0.0000			
29				0.0000			
30				0.0000			
31	830	1	Y	0.0000			
AVERAGE				0.0000	NA	NA	NA
MAXIMUM				0.0000	NA	NA	NA
MINIMUM				0.0000	NA	NA	NA
Comp. (C) / Grab (G)				■	G	G	G
Monthly Limit				0.0144	30	NA	0.200

NO FLOW

Note: The groundwater remediation system remained deactivated throughout the month of March 2015 due to maintenance related issues.

DWQ Form MR-1.1 (11/04)

Facility Status: (Please check one of the following)

All monitoring data and sampling frequencies meet permit requirements (including weekly averages, if applicable) [X] Compliant

All monitoring data and sampling frequencies do NOT meet permit requirements [ ] Noncompliant

The permittee shall report to the Director or the appropriate Regional Office any noncompliance that potentially threatens public health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

If the facility is noncompliant, please attach a list of corrective actions being taken and a time-table for improvements to be made as required by Part II.E.6 of the NPDES permit.

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Vincent Price
Permittee **(Please print or type)**

Vincent P 4-27-15
Signature of Permittee*** Date
(Required unless submitted electronically)

Permittee Address	Phone Number	e-mail address	Permit Expiration Date
Brenntag Mid-South, Inc. 2000 East Pettigrew Street, Durham, NC 27703	(919) 596-0681		April 30, 2016

ADDITIONAL CERTIFIED LABORATORIES

Certified Laboratory (2) _____ Certification No. _____
Certified Laboratory (3) _____ Certification No. _____
Certified Laboratory (4) _____ Certification No. _____
Certified Laboratory (5) _____ Certification No. _____

PARAMETER CODES

Parameter Code assistance may be obtained by calling the NPDES Unit at (919) 733-5083 or by visiting the Surface Water Protection Section's web site at h2o.enr.state.nc.us/wqs and linking to the unit's information pages.

Use only units of measurement designated in the reporting facility's NPDES permit for reporting data.

* **No Flow/Discharge From Site:** Check this box if no discharge occurs and, as a result, there are no data to be entered for all of the parameters on the DMR for the entire monitoring period.

** **ORC On Site?:** ORC must visit facility and document visitation of facility as required per 15A NCAC 8G .0204.

*** **Signature of Permittee:** If signed by other than the permittee, then the delegation of the signatory authority must be on file with the state per 15A NCAC 2B .0506(b)(2)(D).

ARCADIS
Infrastructure, water, environment, buildings

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

North Carolina Department of Environment and Natural Resources
Division of Water Quality
Environmental Sciences Branch
1621 Mail Service Center
Raleigh, North Carolina 27699-1621

Subject:
Chronic Toxicity Testing Report for April 2015, Brenntag Mid-South Facility, 2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827
Durham County

Date:
May 26, 2015

Contact:
Jim Shilliday

Phone:
Ext. 246

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0025

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Division of Environmental Management (DEM) form AT-1 for the month of April 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is a copy of the laboratory analytical data report for the analytical parameters required by the NPDES permit.

During April 2015, the groundwater remediation system was deactivated for the first half of the month due to ongoing maintenance associated with the system's conveyance piping. The system was restarted on April 15, 2015, following completion of the pipeline repairs. The monthly system cleaning activities were performed on April 22, 2015, which included air stripper cleaning, changing the carbon in the GAC units, and backwashing the resin units. As of April 30, 2015, approximately 7,681,005 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on April 28, 2015. The effluent grab sample collected from the groundwater remediation system on April 28, 2015, was submitted for analysis of select volatile organic compounds by EPA Method 624, bis(2-ethylhexyl)phthalate by EPA Method 8270LL, total suspended solids (TSS) by Standard Method 2540D, iron, manganese, and zinc by EPA Method 200.7, oil and grease by EPA Method 1664A, and pH by EPA Method 150.1. All parameters were in compliance with permit requirements.

The remediation system effluent was sampled for the chronic toxicity test on April 28 and 30, 2015. The grab samples were delivered in person on April 28 and 30, 2015, to Research & Analytical Laboratories, Inc. in Kernersville, North Carolina. The samples were analyzed in accordance with the test procedures outlined in the North Carolina Ceriodaphnia Chronic Effluent Toxicity Procedure (revised February 1998). The remediation system effluent samples passed the chronic toxicity test.

ARCADIS

As required by the NPDES permit, the remediation system effluent will be sampled again in May 2015 for the standard monthly sampling parameters.

If you have any questions regarding the information in this letter or presented on the chronic toxicity test report, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Bruce Biehl (Brenntag Mid-South, Inc.)
Project File

Effluent Toxicity Report Form - Chronic Pass/Fail and Acute LC50 Date: 05/07/15

Facility: BRENNTAG SOUTHCHEM NPDES#: NC0086827 Pipe#: 001 County: DURHAM

Laboratory Performing Test: R & A LABORATORIES, INC.

X _____
Signature of Operator in Responsible Charge

X _____
Signature of Laboratory Supervisor

Comments: Final Effluent

An Arcadis Project

* PASSED: 0.36% Reduction *

Work Order: 3531-01/3596

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Environmental Management
N.C. Dept. of EHNR
1621 Mail Service Ctr
Raleigh, North Carolina 27699-1621

North Carolina Ceriodaphnia
Chronic Pass/Fail Reproduction Toxicity Test

CONTROL ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	22	23	25	21	23	22	24	25	21	23	24	21
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Effluent %: 90%

TREATMENT 2 ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	23	21	24	24	25	21	24	21	23	22	23	22
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Chronic Test Results
Calculated t = 0.144
Tabular t = 2.508
% Reduction = 0.36

% Mortality	Avg.Reprod.
0.00 Control	22.83 Control
0.00 Treatment 2	22.75 Treatment 2

Control CV 6.424%

% control orgs producing 3rd brood 100%

PASS	FAIL
X	

Check One

pH	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	6.97	7.05	6.96	7.04	6.95	7.04
Treatment 2	7.60	7.68	7.36	7.44	7.35	7.43

D.O.	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	8.6	8.4	8.6	8.3	8.6	8.4
Treatment 2	8.4	8.2	8.4	8.2	8.5	8.3

Complete This For Either Test
Test Start Date: 04/29/15
Collection (Start) Date
Sample 1: 04/28/15 Sample 2: 04/30/15
Sample Type/Duration

	Grab	Comp.	Duration	DILUT	1st SAMP	2nd P/F SAMP
Sample 1	X		hrs			
Sample 2	X		hrs			
Hardness (mg/l)					48	
Spec. Cond. (µmhos)					189	919	900
Chlorine (mg/l)						0.03	0.04
Sample temp. at receipt (°C)						2.3	2.0

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

%	%	%	%	%	%	%	%	%	%	Concentration
%	%	%	%	%	%	%	%	%	%	Mortality

Note: Please Complete This Section Also

LC50 = _____%
95% Confidence Limits
_____% -- _____%

Method of Determination
Moving Average __ Probit __
Spearman Karber __ Other ____

	pH start	pH end		D.O. start	D.O. end
			Control		
			High Conc.		

Organism Tested: Ceriodaphnia dubia Duration(hrs): _____

Copied from DEM form AT-1 (3/87) rev. 11/95 (DUBIA ver. 4.32)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Quarterly)

TestAmerica Job ID: 680-111998-1

Client Sample ID: Effuent

Date Collected: 04/28/15 09:44
Date Received: 04/29/15 09:54

Lab Sample ID: 680-111998-5

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**1700**		130		ug/L			05/06/15 19:19	5
Benzene	5.0	U	5.0		ug/L			05/06/15 19:19	5
cis-1,2-Dichloroethene	5.0	U	5.0		ug/L			05/06/15 19:19	5
1,1-Dichloroethene	5.0	U	5.0		ug/L			05/06/15 19:19	5
Tetrachloroethene	5.0	U	5.0		ug/L			05/06/15 19:19	5
Toluene	5.0	U	5.0		ug/L			05/06/15 19:19	5
Trichloroethene	5.0	U	5.0		ug/L			05/06/15 19:19	5
Vinyl chloride	5.0	U	5.0		ug/L			05/06/15 19:19	5
Xylenes, Total	10	U	10		ug/L			05/06/15 19:19	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*79 - 119*		*05/06/15 19:19*	*5*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*05/06/15 19:19*	*5*
4-Bromofluorobenzene (Surr)	*87*		*71 - 121*		*05/06/15 19:19*	*5*
Dibromofluoromethane (Surr)	*117*		*77 - 129*		*05/06/15 19:19*	*5*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	0.48	U	0.48		ug/L		05/01/15 15:07	05/08/15 14:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5 (Surr)	*62*		*27 - 130*	*05/01/15 15:07*	*05/08/15 14:44*	*1*
Nitrobenzene-d5 (Surr)	*63*		*32 - 130*	*05/01/15 15:07*	*05/08/15 14:44*	*1*
Terphenyl-d14 (Surr)	*92*		*36 - 130*	*05/01/15 15:07*	*05/08/15 14:44*	*1*
2,4,6-Tribromophenol (Surr)	*69*		*30 - 130*	*05/01/15 15:07*	*05/08/15 14:44*	*1*
2-Fluorophenol (Surr)	*58*		*25 - 130*	*05/01/15 15:07*	*05/08/15 14:44*	*1*
2-Fluorobiphenyl	*61*		*34 - 130*	*05/01/15 15:07*	*05/08/15 14:44*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.11**		0.010		mg/L		05/02/15 14:14	05/04/15 20:35	1
Iron	0.10	U	0.10		mg/L		05/02/15 14:14	05/04/15 20:35	1
Zinc	0.020	U	0.020		mg/L		05/02/15 14:14	05/04/15 20:35	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.73**	**HF**			SU			04/29/15 13:33	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	5.3	U	5.3		mg/L		04/30/15 10:36	04/30/15 15:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.9	U	1.9		mg/L			04/30/15 08:27	1

ARCADIS
Infrastructure, water, environment, buildings

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

ATTN: Central Files
Division of Water Quality
North Carolina Department of Environment and Natural Resources
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Subject:
Discharge Monitoring Report for April 2015, Brenntag Mid-South Facility, 2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827
Durham County

Date:
May 26, 2015

Contact:
Jim Shilliday

Phone:
Ext. 2302

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0025

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Discharge Monitoring Report (DMR) for the month of April 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is the laboratory analytical data report for the parameters shown on the DMR and a copy of the Effluent Aquatic Toxicity Report Form (Form AT-1).

During April 2015, the groundwater remediation system was deactivated for the first half of the month due to ongoing maintenance associated with the system's conveyance piping. The system was restarted on April 15, 2015, following completion of the pipeline repairs. The monthly system cleaning activities were performed on April 22, 2015, which included air stripper cleaning, changing the carbon in the GAC units, and backwashing the resin units. As of April 30, 2015, approximately 7,681,005 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

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ARCADIS

As required by the NPDES permit, the remediation system effluent will be sampled again in May 2015 for the standard monthly sampling parameters.

If you have any questions regarding the information in this letter or presented on the DMR, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Bruce Biehl (Brenntag Mid-South, Inc.)
Project File

EFFLUENT

NPDES PERMIT NO. NC0086827 DISCHARGE NO. 001 MONTH April YEAR 2015
FACILITY NAME Brenntag Mid-South, Inc CLASS PC-1 COUNTY Durham
CERTIFIED LABORATORY (1) Test America CERTIFICATION NO. 387
(list additional laboratories on the backside/page 2 of this form)
OPERATOR IN RESPONSIBLE CHARGE (ORC) Bruce Biehl GRADE PC-1 CERTIFICATION NO. 28152
PERSON(S) COLLECTING SAMPLES Dave Twamley (ARCADIS) ORC PHONE (919) 596-0681
CHECK BOX IF ORC HAS CHANGED * ☐ **NO FLOW / DISCHARGE FROM SITE *** ☐

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER QUALITY
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

x (SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) 5/20/17 DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	Operator Arrival Time 2400 Clock	Operator Time On Site	ORC On Site? **	50050 FLOW EFF ☒ INF ☐ DAILY RATE	00530 Total Suspended Solids (mg/L)	00556 Oil and Grease (mg/L)	01045 Iron (mg/L)	01055 Manganese (mg/L)	01092 Zinc (mg/L)	00400 pH (SU)	81552 Acetone (µg/L)	34030 Benzene (µg/L)	81686 cis-1,2-Dichloroethene (µg/L)	34501 1,1-Dichloroethene (µg/L)	78389 Tetrachloroethene (µg/L)	39180 Trichloroethene (µg/L)	34010 Toluene (µg/L)	39175 Vinyl Chloride (µg/L)	81551 Total Xylenes (µg/L)	39100 Bis(2-ethylhexyl) phthalate (ug/L)	TGP3B Chronic Toxicity
	HRS	HRS	Y/B/N	MGD																	
1				0.0000																	
2				0.0000																	
3				0.0000																	
4				0.0000																	
5				0.0000																	
6	1650	1	Y	0.0000																	
7				0.0000																	
8				0.0000																	
9				0.0000																	
10				0.0000																	
11				0.0000																	
12				0.0000																	
13				0.0000																	
14				0.0000																	
15	1340	1	Y	0.0000																	
16				0.0003																	
17				0.0003																	
18				0.0003																	
19				0.0003																	
20				0.0003																	
21				0.0003																	
22	1630	1	Y	0.0003																	
23				0.0023																	
24				0.0023																	
25				0.0023																	
26				0.0023																	
27				0.0023																	
28	1000	1	Y	0.0023	<1.9	<5.3	<0.10	0.11	<0.020	7.73	1,700	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<0.48	pass
29				0.0022																	
30	830	1	Y	0.0022																	
31																					
AVERAGE				0.0007	<1.9	<5.3	<0.10	0.11	<0.020	7.73	1,700	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<0.48	pass
MAXIMUM				0.0023	<1.9	<5.3	<0.10	0.11	<0.020	7.73	1,700	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<0.48	pass
MINIMUM				0.0000	<1.9	<5.3	<0.10	0.11	<0.020	7.73	1,700	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<0.48	pass
Comp (C) / Grab (G)					G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Monthly Limit				0.0144	30			0.200													

DWQ Form MR-1.1 (11/04)

Facility Status: (Please check one of the following)

All monitoring data and sampling frequencies meet permit requirements (including weekly averages, if applicable) [X] Compliant

All monitoring data and sampling frequencies do NOT meet permit requirements [ ] Noncompliant

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"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Bruce Biehl
Permittee **(Please print or type)**

5/20/15
Signature of Permittee*** Date
(Required unless submitted electronically)

Brenntag Mid-South, Inc. 2000 East Pettigrew Street, Durham, NC 27703 | (919) 596-0681 | | April 30, 2016
Permittee Address | Phone Number | e-mail address | Permit Expiration Date

ADDITIONAL CERTIFIED LABORATORIES

Certified Laboratory (2)	R&A Labs	Certification No.	34
Certified Laboratory (3)		Certification No.	
Certified Laboratory (4)		Certification No.	
Certified Laboratory (5)		Certification No.	

PARAMETER CODES

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Use only units of measurement designated in the reporting facility's NPDES permit for reporting data.

* **No Flow/Discharge From Site:** Check this box if no discharge occurs and, as a result, there are no data to be entered for all of the parameters on the DMR for the entire monitoring period.

** **ORC On Site?:** ORC must visit facility and document visitation of facility as required per 15A NCAC 8G .0204.

*** **Signature of Permittee:** If signed by other than the permittee, then the delegation of the signatory authority must be on file with the state per 15A NCAC 2B .0506(b)(2)(D).

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Quarterly)

TestAmerica Job ID: 680-111998-1

Client Sample ID: Effuent

Date Collected: 04/28/15 09:44
Date Received: 04/29/15 09:54

Lab Sample ID: 680-111998-5

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**1700**		130		ug/L			05/06/15 19:19	5
Benzene	5.0	U	5.0		ug/L			05/06/15 19:19	5
cis-1,2-Dichloroethene	5.0	U	5.0		ug/L			05/06/15 19:19	5
1,1-Dichloroethene	5.0	U	5.0		ug/L			05/06/15 19:19	5
Tetrachloroethene	5.0	U	5.0		ug/L			05/06/15 19:19	5
Toluene	5.0	U	5.0		ug/L			05/06/15 19:19	5
Trichloroethene	5.0	U	5.0		ug/L			05/06/15 19:19	5
Vinyl chloride	5.0	U	5.0		ug/L			05/06/15 19:19	5
Xylenes, Total	10	U	10		ug/L			05/06/15 19:19	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*79 - 119*		*05/06/15 19:19*	*5*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*05/06/15 19:19*	*5*
4-Bromofluorobenzene (Surr)	*87*		*71 - 121*		*05/06/15 19:19*	*5*
Dibromofluoromethane (Surr)	*117*		*77 - 129*		*05/06/15 19:19*	*5*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	0.48	U	0.48		ug/L		05/01/15 15:07	05/08/15 14:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5 (Surr)	*62*		*27 - 130*	*05/01/15 15:07*	*05/08/15 14:44*	*1*
Nitrobenzene-d5 (Surr)	*63*		*32 - 130*	*05/01/15 15:07*	*05/08/15 14:44*	*1*
Terphenyl-d14 (Surr)	*92*		*36 - 130*	*05/01/15 15:07*	*05/08/15 14:44*	*1*
2,4,6-Tribromophenol (Surr)	*69*		*30 - 130*	*05/01/15 15:07*	*05/08/15 14:44*	*1*
2-Fluorophenol (Surr)	*58*		*25 - 130*	*05/01/15 15:07*	*05/08/15 14:44*	*1*
2-Fluorobiphenyl	*61*		*34 - 130*	*05/01/15 15:07*	*05/08/15 14:44*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.11**		0.010		mg/L		05/02/15 14:14	05/04/15 20:35	1
Iron	0.10	U	0.10		mg/L		05/02/15 14:14	05/04/15 20:35	1
Zinc	0.020	U	0.020		mg/L		05/02/15 14:14	05/04/15 20:35	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.73**	**HF**			SU			04/29/15 13:33	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	5.3	U	5.3		mg/L		04/30/15 10:36	04/30/15 15:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.9	U	1.9		mg/L			04/30/15 08:27	1

Effluent Toxicity Report Form - Chronic Pass/Fail and Acute LC50 Date: 05/07/15

Facility: BRENNTAG SOUTHCHEM NPDES#: NC0086827 Pipe#: 001 County: DURHAM

Laboratory Performing Test: R & A LABORATORIES, INC.

X _____
Signature of Operator in Responsible Charge

X _____
Signature of Laboratory Supervisor

Comments: Final Effluent
An Arcadis Project

* PASSED: 0.36% Reduction *

Work Order: 3531-01/3596

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Environmental Management
N.C. Dept. of EHNR
1621 Mail Service Ctr
Raleigh, North Carolina 27699-1621

North Carolina Ceriodaphnia
Chronic Pass/Fail Reproduction Toxicity Test

CONTROL ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	22	23	25	21	23	22	24	25	21	23	24	21
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Effluent %: 90%

TREATMENT 2 ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	23	21	24	24	25	21	24	21	23	22	23	22
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Chronic Test Results
Calculated t = 0.144
Tabular t = 2.508
% Reduction = 0.36

% Mortality	Avg.Reprod.
0.00 Control	22.83 Control
0.00 Treatment 2	22.75 Treatment 2

Control CV 6.424%

% control orgs producing 3rd brood 100%

PASS	FAIL
X	
Check One	

pH	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	6.97	7.05	6.96	7.04	6.95	7.04
Treatment 2	7.60	7.68	7.36	7.44	7.35	7.43

D.O.	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	8.6	8.4	8.6	8.3	8.6	8.4
Treatment 2	8.4	8.2	8.4	8.2	8.5	8.3

Complete This For Either Test
Test Start Date: 04/29/15
Collection (Start) Date
Sample 1: 04/28/15 Sample 2: 04/30/15
Sample Type/Duration

	Grab	Comp.	Duration
Sample 1	X		hrs
Sample 2	X		hrs

	DILUT	1st SAMP	2nd P/F SAMP
Hardness (mg/l)	48		
Spec. Cond. (µmhos)	189	919	900
Chlorine (mg/l)		0.03	0.04
Sample temp. at receipt (°C)		2.3	2.0

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

%	%	%	%	%	%	%	%	%	%	Concentration
%	%	%	%	%	%	%	%	%	%	Mortality

Note: Please Complete This Section Also

LC50 = _____ %
95% Confidence Limits
_____ % -- _____ %

Method of Determination
Moving Average __ Probit __
Spearman Karber __ Other ____

	pH start/end		D.O. start/end	
Control				
High Conc.				

Organism Tested: Ceriodaphnia dubia Duration(hrs): _____

Copied from DEM form AT-1 (3/87) rev. 11/95 (DUBIA ver. 4.32)

ARCADIS
Infrastructure, water, environment, buildings

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801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

ATTN: Central Files
Division of Water Quality
North Carolina Department of Environment and Natural Resources
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Subject:
Discharge Monitoring Report for May 2015, Brenntag Mid-South Facility
2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827

Date:
June 30, 2015

Contact:
James E. Shilliday, III

Phone:
Ext. 52302

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0025

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Discharge Monitoring Report (DMR) for the month of May 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is the laboratory analytical data report for the system effluent sampling event conducted in May 2015. The effluent sample was analyzed for parameters stipulated under the NPDES Permit No. NC0086827.

During May 2015, the groundwater remediation system operated throughout the month with no downtime. Monthly system cleaning activities were conducted on May 18, 2015. The system cleaning activities included disassembling the air stripper unit in order to clean the trays and sump, changing the carbon in the GAC units, backwashing the resin units, and bag filter replacement. As of May 26, 2015, approximately 7,733,249 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on May 26, 2015. The effluent grab sample that was collected from the groundwater remediation system was analyzed for total suspended solids by Standard Method 2540D, total manganese by EPA Method 200.7, and oil and grease by EPA Method 1664A as required by the NPDES permit. All of the parameters listed on the DMR were in compliance with NPDES permit requirements.

As required by the NPDES permit, the remediation system effluent will be sampled again in June 2015 for the standard monthly sampling parameters.

ARCADIS

If you have any questions regarding the information in this letter or presented on the DMR, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Bruce Biehl (Brenntag Mid-South, Inc.)
Project File

EFFLUENT

NPDES PERMIT NO. NC0086827 DISCHARGE NO. 001 MONTH May YEAR 2015
FACILITY NAME Brenntag Mid-South, Inc CLASS PC-1 COUNTY Durham
CERTIFIED LABORATORY (1) Test America, Inc CERTIFICATION NO. 387
(list additional laboratories on the backside/page 2 of this form)
OPERATOR IN RESPONSIBLE CHARGE (ORC) Bruce Biehl GRADE PC-1 CERTIFICATION NO. 28152
PERSON(S) COLLECTING SAMPLES Dave Twamley (ARCADIS) ORC PHONE (919) 596-0681
CHECK BOX IF ORC HAS CHANGED * ☐ **NO FLOW / DISCHARGE FROM SITE *** ☑

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER QUALITY
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

x (SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) 6/29/15 DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	Operator Arrival Time 2400 Clock	Operator Time Onsite	ORC On Site? **	50050 FLOW EFF ■ INF □ DAILY RATE	00530 Total Suspended Solids (mg/L)	00556 Oil and Grease (mg/L)	01055 Manganese (mg/L)
	HRS	HRS	Y/B/N	MGD			
1				0.0019			
2				0.0019			
3				0.0019			
4				0.0019			
5				0.0019			
6				0.0019			
7	1250	1	Y	0.0019			
8				0.0021			
9				0.0021			
10				0.0021			
11				0.0021			
12	1600	1	Y	0.0021			
13				0.0021			
14				0.0021			
15				0.0021			
16				0.0021			
17				0.0021			
18	1650	1	Y	0.0021			
19	1640	1	Y	0.0021			
20				0.0020			
21	1700	1	Y	0.0020			
22				0.0020			
23				0.0020			
24				0.0020			
25				0.0020			
26	1130	1	Y	0.0020	<1.0	<4.7	<0.010
27				0.0020			
28				0.0020			
29				0.0020			
30				0.0020			
31				0.0020			
AVERAGE				0.0020	< 1.0	< 4.7	<0.010
MAXIMUM				0.0021	< 1.0	< 4.7	<0.010
MINIMUM				0.0019	< 1.0	< 4.7	<0.010
Comp. (C) / Grab (G)					G	G	G
Monthly Limit				0.0144	30	NA	0.200

DWQ Form MR-1.1 (11/04)

Facility Status: (Please check one of the following)

All monitoring data and sampling frequencies meet permit requirements (including weekly averages, if applicable) [X] Compliant

All monitoring data and sampling frequencies do NOT meet permit requirements [ ] Noncompliant

The permittee shall report to the Director or the appropriate Regional Office any noncompliance that potentially threatens public health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

If the facility is noncompliant, please attach a list of corrective actions being taken and a time-table for improvements to be made as required by Part II.E.6 of the NPDES permit.

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Bruce Biehl
Permittee **(Please print or type)**

Signature of Permittee*** Date
(Required unless submitted electronically)

Permittee Address	Phone Number	e-mail address	Permit Expiration Date
Brenntag Mid-South, Inc. 2000 East Pettigrew Street, Durham, NC 27703	(919) 596-0681		April 30, 2016

ADDITIONAL CERTIFIED LABORATORIES

Certified Laboratory (2) _____ Certification No. _____
Certified Laboratory (3) _____ Certification No. _____
Certified Laboratory (4) _____ Certification No. _____
Certified Laboratory (5) _____ Certification No. _____

PARAMETER CODES

Parameter Code assistance may be obtained by calling the NPDES Unit at (919) 733-5083 or by visiting the Surface Water Protection Section's web site at h2o.enr.state.nc.us/wqs and linking to the unit's information pages.

Use only units of measurement designated in the reporting facility's NPDES permit for reporting data.

* **No Flow/Discharge From Site:** Check this box if no discharge occurs and, as a result, there are no data to be entered for all of the parameters on the DMR for the entire monitoring period.

** **ORC On Site?:** ORC must visit facility and document visitation of facility as required per 15A NCAC 8G .0204.

*** **Signature of Permittee:** If signed by other than the permittee, then the delegation of the signatory authority must be on file with the state per 15A NCAC 2B .0506(b)(2)(D).

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Monthly)

TestAmerica Job ID: 680-112907-1

Client Sample ID: Effluent

Lab Sample ID: 680-112907-5

Date Collected: 05/26/15 11:04
Date Received: 05/27/15 09:50

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	4.7	U	4.7		mg/L		06/01/15 10:03	06/01/15 17:08	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.0	U	1.0		mg/L			05/31/15 11:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Monthly)

TestAmerica Job ID: 680-112907-2

Client Sample ID: Effluent

Lab Sample ID: 680-112907-5

Date Collected: 05/26/15 11:04
Matrix: Water
Date Received: 05/27/15 09:50

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.010	U	0.010		mg/L		06/11/15 14:30	06/12/15 14:00	1

ARCADIS
Infrastructure, water, environment, buildings

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

ATTN: Central Files
Division of Water Quality
North Carolina Department of Environment and Natural Resources
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Subject:
Discharge Monitoring Report for June 2015, Brenntag Mid-South Facility
2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827

Date:
July 28, 2015

Contact:
James E. Shilliday, III

Phone:
Ext. 52302

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0025

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Discharge Monitoring Report (DMR) for the month of June 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is the laboratory analytical data report for the system effluent sampling event conducted in June 2015. The effluent sample was analyzed for parameters stipulated under the NPDES Permit No. NC0086827.

During June 2015, the groundwater remediation system operated throughout the month with no downtime. Monthly system cleaning activities were conducted on June 23, 2015. The system cleaning activities included disassembling the air stripper unit in order to clean the trays and sump, changing the carbon in the GAC units, and bag filter replacement. In addition, the ion exchange media used to treat the extracted groundwater for metals was replaced in both of the ion exchange vessels on June 23, 2015. As of June 29, 2015, approximately 7,790,887 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on June 29, 2015. The effluent grab sample that was collected from the groundwater remediation system was analyzed for total suspended solids by Standard Method 2540D, total manganese by EPA Method 200.7, and oil and grease by EPA Method 1664A as required by the NPDES permit. All of the parameters listed on the DMR were in compliance with NPDES permit requirements.

As required by the NPDES permit, the remediation system effluent will be sampled again in July 2015 for the quarterly sampling parameters.

ARCADIS

If you have any questions regarding the information in this letter or presented on the DMR, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Bruce Biehl (Brenntag Mid-South, Inc.)
Project File

EFFLUENT

NPDES PERMIT NO. NC0086827 DISCHARGE NO. 001 MONTH June YEAR 2015
FACILITY NAME Brenntag Mid-South, Inc CLASS PC-1 COUNTY Durham
CERTIFIED LABORATORY (1) Test America, Inc CERTIFICATION NO. 387
(list additional laboratories on the backside/page 2 of this form)
OPERATOR IN RESPONSIBLE CHARGE (ORC) Bruce Biehl GRADE PC-1 CERTIFICATION NO. 28152
PERSON(S) COLLECTING SAMPLES Dave Twamley (ARCADIS) ORC PHONE (919) 596-0681
CHECK BOX IF ORC HAS CHANGED * ☐ **NO FLOW / DISCHARGE FROM SITE *** ☐

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER QUALITY
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

x (SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) 7/20/15 DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	Operator Arrival Time 2400 Clock	Operator Time Onsite	ORC On Site? **	50050 FLOW EFF ■ INF □ DAILY RATE	00530 Total Suspended Solids (mg/L)	00556 Oil and Grease (mg/L)	01055 Manganese (mg/L)
	HRS	HRS	Y/B/N	MGD			
1				0.0020			
2				0.0020			
3	1700	1	Y	0.0020			
4				0.0019			
5				0.0019			
6				0.0019			
7				0.0019			
8				0.0019			
9				0.0019			
10				0.0019			
11	1700	1	Y	0.0019			
12				0.0018			
13				0.0018			
14				0.0018			
15				0.0018			
16				0.0018			
17				0.0018			
18	800	1	Y	0.0018			
19				0.0018			
20				0.0018			
21				0.0018			
22				0.0018			
23	945	1	Y	0.0018			
24				0.0008			
25				0.0008			
26	1700	1	Y	0.0008			
27				0.0008			
28				0.0008			
29	1700	1	Y	0.0008	<1.0	<4.6	<0.010
30				0.0008			
31							
AVERAGE				0.0016	<1.0	<4.6	<0.010
MAXIMUM				0.0020	<1.0	<4.6	<0.010
MINIMUM				0.0008	<1.0	<4.6	<0.010
Comp. (C) / Grab (G)					G	G	G
Monthly Limit				0.0144	30	NA	0.200

DWQ Form MR-1.1 (11/04)

Facility Status: (Please check one of the following)

All monitoring data and sampling frequencies meet permit requirements (including weekly averages, if applicable) [X] Compliant

All monitoring data and sampling frequencies do NOT meet permit requirements [ ] Noncompliant

The permittee shall report to the Director or the appropriate Regional Office any noncompliance that potentially threatens public health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

If the facility is noncompliant, please attach a list of corrective actions being taken and a time-table for improvements to be made as required by Part II.E.6 of the NPDES permit.

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Bruce Biehl
Permittee **(Please print or type)**

7/20/15
Signature of Permittee*** Date
(Required unless submitted electronically)

Brenntag Mid-South, Inc. 2000 East Pettigrew Street, Durham, NC 27703	(919) 596-0681		April 30, 2016
Permittee Address	Phone Number	e-mail address	Permit Expiration Date

ADDITIONAL CERTIFIED LABORATORIES

Certified Laboratory (2) _____ Certification No. _____
Certified Laboratory (3) _____ Certification No. _____
Certified Laboratory (4) _____ Certification No. _____
Certified Laboratory (5) _____ Certification No. _____

PARAMETER CODES

Parameter Code assistance may be obtained by calling the NPDES Unit at (919) 733-5083 or by visiting the Surface Water Protection Section's web site at h2o.enr.state.nc.us/wqs and linking to the unit's information pages.

Use only units of measurement designated in the reporting facility's NPDES permit for reporting data.

* **No Flow/Discharge From Site:** Check this box if no discharge occurs and, as a result, there are no data to be entered for all of the parameters on the DMR for the entire monitoring period.

** **ORC On Site?:** ORC must visit facility and document visitation of facility as required per 15A NCAC 8G .0204.

*** **Signature of Permittee:** If signed by other than the permittee, then the delegation of the signatory authority must be on file with the state per 15A NCAC 2B .0506(b)(2)(D).

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Monthly)

TestAmerica Job ID: 680-114043-1

Client Sample ID: Effluent

Lab Sample ID: 680-114043-5

Date Collected: 06/29/15 16:44
Date Received: 06/30/15 10:09

Matrix: Water

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.010	U	0.010		mg/L		07/01/15 15:45	07/02/15 16:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	4.6	U	4.6		mg/L		07/06/15 08:07	07/06/15 11:03	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.0	U	1.0		mg/L			07/01/15 11:44	1

ARCADIS
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www.arcadis-us.com

ENVIRONMENTAL

North Carolina Department of Environment and Natural Resources
Division of Water Quality
Environmental Sciences Branch
1621 Mail Service Center
Raleigh, North Carolina 27699-1621

Subject:
Chronic Toxicity Testing Report for July 2015, Brenntag Mid-South Facility, 2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827
Durham County

Date:
August 26, 2015

Contact:
Jim Shilliday

Phone:
Ext. 246

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0025

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Division of Environmental Management (DEM) form AT-1 for the month of July 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is a copy of the laboratory analytical data report for the analytical parameters required by the NPDES permit.

During July 2015, the groundwater remediation system was deactivated for approximately two days due to a malfunction with the in-line totalizing flow meter. A new totalizer was installed and the system was restarted on July 31, 2015. The monthly system cleaning activities were performed on July 27, 2015, which included air stripper cleaning, changing the carbon in the GAC units, and backwashing the resin units. As of July 31, 2015, approximately 7,806,466 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on July 28, 2015. The effluent grab sample collected from the groundwater remediation system on July 28, 2015, was submitted for analysis of select volatile organic compounds by EPA Method 624, bis(2-ethylhexyl)phthalate by EPA Method 8270LL, total suspended solids (TSS) by Standard Method 2540D, iron, manganese, and zinc by EPA Method 200.7, oil and grease by EPA Method 1664A, and pH by EPA Method 150.1. All parameters were in compliance with permit requirements.

The remediation system effluent was sampled for the chronic toxicity test on July 28 and 30, 2015. The grab samples were delivered in person on July 28 and 30, 2015, to Research & Analytical Laboratories, Inc. in Kernersville, North Carolina. The samples were analyzed in accordance with the test procedures outlined in the North Carolina Ceriodaphnia Chronic Effluent Toxicity Procedure (revised February 1998). The remediation system effluent samples passed the chronic toxicity test.

ARCADIS

As required by the NPDES permit, the remediation system effluent will be sampled again in August 2015 for the standard monthly sampling parameters.

If you have any questions regarding the information in this letter or presented on the chronic toxicity test report, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Bruce Biehl (Brenntag Mid-South, Inc.)
Project File

Effluent Toxicity Report Form - Chronic Pass/Fail and Acute LC50 Date: 08/06/15

Facility: BRENNTAG SOUTHCHEM NPDES#: NC0086827 Pipe#: 001 County: DURHAM

Laboratory Performing Test: R & A LABORATORIES, INC.

X _____
Signature of Operator in Responsible Charge

X _____
Signature of Laboratory Supervisor

Comments: Final Effluent

An Arcadis Project

* PASSED: 8.30% Reduction *

Work Order: 7122-01/7188

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Environmental Management
N.C. Dept. of EHNR
1621 Mail Service Ctr
Raleigh, North Carolina 27699-1621

North Carolina Ceriodaphnia
Chronic Pass/Fail Reproduction Toxicity Test

CONTROL ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	23	25	22	22	24	23	21	25	23	25	22	22
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Effluent %: 90%

TREATMENT 2 ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	22	23	21	22	21	19	22	22	20	21	19	22
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Chronic Test Results
Calculated t = 3.545
Tabular t = 2.508
% Reduction = 8.30

% Mortality	Avg.Reprod.
0.00 Control	23.08 Control
0.00 Treatment 2	21.17 Treatment 2

Control CV 5.974%

% control orgs producing 3rd brood 100%

PASS	FAIL
X	
Check One	

pH	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	6.92	7.00	6.93	7.01	6.92	7.00
Treatment 2	7.56	7.64	7.12	7.21	7.13	7.21

D.O.	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	8.6	8.4	8.6	8.4	8.6	8.4
Treatment 2	8.5	8.3	8.5	8.3	8.5	8.3

Complete This For Either Test
Test Start Date: 07/29/15
Collection (Start) Date
Sample 1: 07/28/15 Sample 2: 07/30/15
Sample Type/Duration

	Grab	Comp.	Duration	DILUT	1st SAMP	2nd P/F SAMP
Sample 1	X		hrs			
Sample 2	X		hrs			
Hardness (mg/l)					47	
Spec. Cond. (µmhos)					193	1110	901
Chlorine (mg/l)						0.04	0.03
Sample temp. at receipt (°C)						2.0	2.0

Note: Please Complete This Section Also

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

%	%	%	%	%	%	%	%	%	%	Concentration
%	%	%	%	%	%	%	%	%	%	Mortality

LC50 = _____%
95% Confidence Limits
_____% -- _____%

Method of Determination
Moving Average __ Probit __
Spearman Karber __ Other ____

	pH start	pH end		D.O. start	D.O. end
			Control		
			High Conc.		

Organism Tested: Ceriodaphnia dubia Duration(hrs): _____

Copied from DEM form AT-1 (3/87) rev. 11/95 (DUBIA ver. 4.32)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Quarterly)

TestAmerica Job ID: 680-115012-1

Client Sample ID: Effluent

Lab Sample ID: 680-115012-5

Date Collected: 07/28/15 10:15
Date Received: 07/29/15 09:30

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	130	U	130		ug/L			07/31/15 00:26	5
Benzene	5.0	U	5.0		ug/L			07/31/15 00:26	5
cis-1,2-Dichloroethene	5.0	U	5.0		ug/L			07/31/15 00:26	5
1,1-Dichloroethene	5.0	U	5.0		ug/L			07/31/15 00:26	5
Tetrachloroethene	5.0	U	5.0		ug/L			07/31/15 00:26	5
Toluene	5.0	U	5.0		ug/L			07/31/15 00:26	5
Trichloroethene	5.0	U	5.0		ug/L			07/31/15 00:26	5
Vinyl chloride	5.0	U	5.0		ug/L			07/31/15 00:26	5
Xylenes, Total	10	U	10		ug/L			07/31/15 00:26	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*79 - 119*		*07/31/15 00:26*	*5*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*07/31/15 00:26*	*5*
4-Bromofluorobenzene (Surr)	*100*		*71 - 121*		*07/31/15 00:26*	*5*
Dibromofluoromethane (Surr)	*114*		*77 - 129*		*07/31/15 00:26*	*5*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**0.68**		0.48		ug/L		07/31/15 14:58	08/03/15 01:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5 (Surr)	*51*		*27 - 130*	*07/31/15 14:58*	*08/03/15 01:52*	*1*
Nitrobenzene-d5 (Surr)	*60*		*32 - 130*	*07/31/15 14:58*	*08/03/15 01:52*	*1*
Terphenyl-d14 (Surr)	*48*		*36 - 130*	*07/31/15 14:58*	*08/03/15 01:52*	*1*
2,4,6-Tribromophenol (Surr)	*66*		*30 - 130*	*07/31/15 14:58*	*08/03/15 01:52*	*1*
2-Fluorophenol (Surr)	*49*		*25 - 130*	*07/31/15 14:58*	*08/03/15 01:52*	*1*
2-Fluorobiphenyl	*49*		*34 - 130*	*07/31/15 14:58*	*08/03/15 01:52*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		07/30/15 10:43	07/30/15 19:12	1
Manganese	0.010	U	0.010		mg/L		07/30/15 10:43	07/30/15 19:12	1
Zinc	0.020	U	0.020		mg/L		07/30/15 10:43	07/30/15 19:12	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.76**	**HF**			SU			07/30/15 17:26	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	4.7	U	4.7		mg/L		07/30/15 05:41	07/30/15 08:58	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.0	U	1.0		mg/L			07/30/15 15:26	1

ARCADIS
Infrastructure, water, environment, buildings

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

ATTN: Central Files
Division of Water Quality
North Carolina Department of Environment and Natural Resources
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Subject:
Discharge Monitoring Report for July 2015, Brenntag Mid-South Facility, 2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827
Durham County

Date:
August 26, 2015

Contact:
Jim Shilliday

Phone:
Ext. 2302

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0025

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Discharge Monitoring Report (DMR) for the month of July 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is the laboratory analytical data report for the parameters shown on the DMR and a copy of the Effluent Aquatic Toxicity Report Form (Form AT-1).

During July 2015, the groundwater remediation system was deactivated for approximately two days due to a malfunction with the in-line totalizing flow meter. A new totalizer was installed and the system was restarted on July 31, 2015. The monthly system cleaning activities were performed on July 27, 2015, which included air stripper cleaning, changing the carbon in the GAC units, and backwashing the resin units. As of July 31, 2015, approximately 7,806,466 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on July 28, 2015. The effluent grab sample collected from the groundwater remediation system on July 28, 2015, was submitted for analysis of select volatile organic compounds by EPA Method 624, bis(2-ethylhexyl)phthalate by EPA Method 8270LL, total suspended solids (TSS) by Standard Method 2540D, iron, manganese, and zinc by EPA Method 200.7, oil and grease by EPA Method 1664A, and pH by EPA Method 150.1. All parameters were in compliance with permit requirements.

The remediation system effluent was sampled for the chronic toxicity test on July 28 and 30, 2015. The grab samples were delivered in person on July 28 and 30, 2015, to Research & Analytical Laboratories, Inc. in Kernersville, North Carolina. The samples were analyzed in accordance with the test procedures outlined in the North Carolina *Ceriodaphnia* Chronic Effluent Toxicity Procedure (revised February 1998). The remediation system effluent samples passed the chronic toxicity test.

ARCADIS

As required by the NPDES permit, the remediation system effluent will be sampled again in August 2015 for the standard monthly sampling parameters.

If you have any questions regarding the information in this letter or presented on the DMR, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Bruce Biehl (Brenntag Mid-South, Inc.)
Project File

EFFLUENT

NPDES PERMIT NO. NC0086827 DISCHARGE NO. 001 MONTH July YEAR 2015
FACILITY NAME Brenntag Mid-South, Inc CLASS PC-1 COUNTY Durham
CERTIFIED LABORATORY (1) Test America CERTIFICATION NO. 387
(list additional laboratories on the backside/page 2 of this form)
OPERATOR IN RESPONSIBLE CHARGE (ORC) Bruce Biehl GRADE PC-1 CERTIFICATION NO. 28152
PERSON(S) COLLECTING SAMPLES Dave Twamley (ARCADIS) ORC PHONE (919) 596-0681
CHECK BOX IF ORC HAS CHANGED * ☐ **NO FLOW / DISCHARGE FROM SITE *** ☐

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER QUALITY
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

x (SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) 8/17/15 DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	Operator Arrival Time 2400 Clock	Operator Time On Site	ORC On Site? **	50050 FLOW EFF ■ INF □ DAILY RATE	00530 Total Suspended Solids (mg/L)	00556 Oil and Grease (mg/L)	01045 Iron (mg/L)	01055 Manganese (mg/L)	01092 Zinc (mg/L)	00400 pH (SU)	81552 Acetone (µg/L)	34030 Benzene (µg/L)	81686 cis-1,2-Dichloroethene (µg/L)	34501 1,1-Dichloroethene (µg/L)	78389 Tetrachloroethene (µg/L)	39180 Trichloroethene (µg/L)	34010 Toluene (µg/L)	39175 Vinyl Chloride (µg/L)	81551 Total Xylenes (µg/L)	39100 Bis(2-ethylhexyl) phthalate (ug/L)	TGP3B Chronic Toxicity
	HRS	HRS	Y/B/N	MGD																	
1	830	1	Y	0.0007																	
2				0.0007																	
3				0.0007																	
4				0.0007																	
5				0.0007																	
6				0.0007																	
7				0.0007																	
8	1100	1	Y	0.0007																	
9				0.0007																	
10				0.0007																	
11				0.0007																	
12				0.0007																	
13				0.0007																	
14				0.0007																	
15	1500	1	Y	0.0007																	
16				0.0007																	
17				0.0007																	
18				0.0007																	
19				0.0007																	
20	1615	1	Y	0.0007																	
21				0.0002																	
22				0.0002																	
23				0.0002																	
24				0.0002																	
25				0.0002																	
26				0.0002																	
27	900	1	Y	0.0002																	
28	830	1	Y	0.0000	<1.0	<4.7	<0.050	<0.010	<0.020	7.76	<130	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	0.68	pass
29				0.0000																	
30	800	1	Y	0.0000																	
31	1600	1	Y	0.0000																	
AVERAGE				0.0005	<1.0	<4.7	<0.050	<0.010	<0.020	7.76	<130	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	0.68	pass
MAXIMUM				0.0007	<1.0	<4.7	<0.050	<0.010	<0.020	7.76	<130	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	0.68	pass
MINIMUM				0.0000	<1.0	<4.7	<0.050	<0.010	<0.020	7.76	<130	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	0.68	pass
Comp (C) / Grab (G)					G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Monthly Limit				0.0144	30			0.200													

Facility Status: (Please check one of the following)

All monitoring data and sampling frequencies meet permit requirements (including weekly averages, if applicable) [X] Compliant

All monitoring data and sampling frequencies do NOT meet permit requirements [ ] Noncompliant

The permittee shall report to the Director or the appropriate Regional Office any noncompliance that potentially threatens public health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

If the facility is noncompliant, please attach a list of corrective actions being taken and a time-table for improvements to be made as required by Part II.E.6 of the NPDES permit.

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Bruce Biehl
Permittee **(Please print or type)**

8/17/16
Signature of Permittee*** Date
(Required unless submitted electronically)

Permittee Address	Phone Number	e-mail address	Permit Expiration Date
Brenntag Mid-South, Inc. 2000 East Pettigrew Street, Durham, NC 27703	(919) 596-0681		April 30, 2016

ADDITIONAL CERTIFIED LABORATORIES

Certified Laboratory (2)	R&A Labs	Certification No.	34
Certified Laboratory (3)		Certification No.	
Certified Laboratory (4)		Certification No.	
Certified Laboratory (5)		Certification No.	

PARAMETER CODES

Parameter Code assistance may be obtained by calling the NPDES Unit at (919) 733-5083 or by visiting the Surface Water Protection Section's web site at h2o.enr.state.nc.us/wqs and linking to the unit's information pages.

Use only units of measurement designated in the reporting facility's NPDES permit for reporting data.

* **No Flow/Discharge From Site:** Check this box if no discharge occurs and, as a result, there are no data to be entered for all of the parameters on the DMR for the entire monitoring period.

** **ORC On Site?:** ORC must visit facility and document visitation of facility as required per 15A NCAC 8G .0204.

*** **Signature of Permittee:** If signed by other than the permittee, then the delegation of the signatory authority must be on file with the state per 15A NCAC 2B .0506(b)(2)(D).

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Quarterly)

TestAmerica Job ID: 680-115012-1

Client Sample ID: Effluent

Lab Sample ID: 680-115012-5

Date Collected: 07/28/15 10:15
Date Received: 07/29/15 09:30

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	130	U	130		ug/L			07/31/15 00:26	5
Benzene	5.0	U	5.0		ug/L			07/31/15 00:26	5
cis-1,2-Dichloroethene	5.0	U	5.0		ug/L			07/31/15 00:26	5
1,1-Dichloroethene	5.0	U	5.0		ug/L			07/31/15 00:26	5
Tetrachloroethene	5.0	U	5.0		ug/L			07/31/15 00:26	5
Toluene	5.0	U	5.0		ug/L			07/31/15 00:26	5
Trichloroethene	5.0	U	5.0		ug/L			07/31/15 00:26	5
Vinyl chloride	5.0	U	5.0		ug/L			07/31/15 00:26	5
Xylenes, Total	10	U	10		ug/L			07/31/15 00:26	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*79 - 119*		*07/31/15 00:26*	*5*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*07/31/15 00:26*	*5*
4-Bromofluorobenzene (Surr)	*100*		*71 - 121*		*07/31/15 00:26*	*5*
Dibromofluoromethane (Surr)	*114*		*77 - 129*		*07/31/15 00:26*	*5*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**0.68**		0.48		ug/L		07/31/15 14:58	08/03/15 01:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5 (Surr)	*51*		*27 - 130*	*07/31/15 14:58*	*08/03/15 01:52*	*1*
Nitrobenzene-d5 (Surr)	*60*		*32 - 130*	*07/31/15 14:58*	*08/03/15 01:52*	*1*
Terphenyl-d14 (Surr)	*48*		*36 - 130*	*07/31/15 14:58*	*08/03/15 01:52*	*1*
2,4,6-Tribromophenol (Surr)	*66*		*30 - 130*	*07/31/15 14:58*	*08/03/15 01:52*	*1*
2-Fluorophenol (Surr)	*49*		*25 - 130*	*07/31/15 14:58*	*08/03/15 01:52*	*1*
2-Fluorobiphenyl	*49*		*34 - 130*	*07/31/15 14:58*	*08/03/15 01:52*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		07/30/15 10:43	07/30/15 19:12	1
Manganese	0.010	U	0.010		mg/L		07/30/15 10:43	07/30/15 19:12	1
Zinc	0.020	U	0.020		mg/L		07/30/15 10:43	07/30/15 19:12	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.76**	**HF**			SU			07/30/15 17:26	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	4.7	U	4.7		mg/L		07/30/15 05:41	07/30/15 08:58	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.0	U	1.0		mg/L			07/30/15 15:26	1

Effluent Toxicity Report Form - Chronic Pass/Fail and Acute LC50 Date: 08/06/15

Facility: BRENNTAG SOUTHCHEM NPDES#: NC0086827 Pipe#: 001 County: DURHAM

Laboratory Performing Test: R & A LABORATORIES, INC.

X _____
Signature of Operator in Responsible Charge

X _____
Signature of Laboratory Supervisor

Comments: Final Effluent
An Arcadis Project

* PASSED: 8.30% Reduction *

Work Order: 7122-01/7188

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Environmental Management
N.C. Dept. of EHNR
1621 Mail Service Ctr
Raleigh, North Carolina 27699-1621

North Carolina Ceriodaphnia
Chronic Pass/Fail Reproduction Toxicity Test

CONTROL ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	23	25	22	22	24	23	21	25	23	25	22	22
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Effluent %: 90%

TREATMENT 2 ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	22	23	21	22	21	19	22	22	20	21	19	22
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Chronic Test Results
Calculated t = 3.545
Tabular t = 2.508
% Reduction = 8.30

% Mortality	Avg.Reprod.
0.00 Control	23.08 Control
0.00 Treatment 2	21.17 Treatment 2

Control CV 5.974%

% control orgs producing 3rd brood 100%

PASS	FAIL
X	
Check One	

pH	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	6.92	7.00	6.93	7.01	6.92	7.00
Treatment 2	7.56	7.64	7.12	7.21	7.13	7.21

D.O.	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	8.6	8.4	8.6	8.4	8.6	8.4
Treatment 2	8.5	8.3	8.5	8.3	8.5	8.3

Complete This For Either Test
Test Start Date: 07/29/15
Collection (Start) Date
Sample 1: 07/28/15 Sample 2: 07/30/15
Sample Type/Duration

	Grab	Comp.	Duration	DILUT	1st SAMP	2nd P/F SAMP
Sample 1	X		hrs			
Sample 2	X		hrs			
Hardness (mg/l)					47	
Spec. Cond. (µmhos)					193	1110	901
Chlorine (mg/l)						0.04	0.03
Sample temp. at receipt (°C)						2.0	2.0

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

%	%	%	%	%	%	%	%	%	%	Concentration
%	%	%	%	%	%	%	%	%	%	Mortality

Note: Please Complete This Section Also

LC50 = _____%
95% Confidence Limits
_____% -- _____%

Method of Determination
Moving Average __ Probit __
Spearman Karber __ Other ____

	pH start	pH end		D.O. start	D.O. end
			Control		
			High Conc.		

Organism Tested: Ceriodaphnia dubia Duration(hrs): _____

Copied from DEM form AT-1 (3/87) rev. 11/95 (DUBIA ver. 4.32)

ARCADIS
Infrastructure, water, environment, buildings

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

ATTN: Central Files
Division of Water Quality
North Carolina Department of Environment and Natural Resources
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Subject:
Discharge Monitoring Report for August 2015, Brenntag Mid-South Facility
2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827

Date:
September 29, 2015

Contact:
James E. Shilliday, III

Phone:
Ext. 52302

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0025

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Discharge Monitoring Report (DMR) for the month of August 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is the laboratory analytical data report for the system effluent sampling event conducted in August 2015. The effluent sample was analyzed for parameters stipulated under the NPDES Permit No. NC0086827.

During August 2015, the groundwater remediation system operated throughout the month with no downtime. Monthly system cleaning activities were conducted on August 25, 2015. The system cleaning activities included disassembling the air stripper unit in order to clean the trays and sump, changing the carbon in the GAC units, and bag filter replacement. As of August 31, 2015, approximately 7,871,074 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on August 28, 2015. The effluent grab sample that was collected from the groundwater remediation system was analyzed for total suspended solids by Standard Method 2540D, total manganese by EPA Method 200.7, and oil and grease by EPA Method 1664A as required by the NPDES permit. All of the parameters listed on the DMR were in compliance with NPDES permit requirements.

As required by the NPDES permit, the remediation system effluent will be sampled again in September 2015 for the standard monthly sampling parameters.

ARCADIS

If you have any questions regarding the information in this letter or presented on the DMR, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Bruce Biehl (Brenntag Mid-South, Inc.)
Project File

EFFLUENT

NPDES PERMIT NO. NC0086827 DISCHARGE NO. 001 MONTH August YEAR 2015
FACILITY NAME Brenntag Mid-South, Inc CLASS PC-1 COUNTY Durham
CERTIFIED LABORATORY (1) Test America, Inc CERTIFICATION NO. 387
(list additional laboratories on the backside/page 2 of this form)
OPERATOR IN RESPONSIBLE CHARGE (ORC) Bruce Biehl GRADE PC-1 CERTIFICATION NO. 28152
PERSON(S) COLLECTING SAMPLES Dave Twamley (ARCADIS) ORC PHONE (919) 596-0681
CHECK BOX IF ORC HAS CHANGED * ☐ **NO FLOW / DISCHARGE FROM SITE *** ☐

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER QUALITY
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

x (SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) 9/23/15 DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	Operator Arrival Time 2400 Clock	Operator Time Onsite	ORC On Site? **	50050 FLOW EFF ☒ INF ☐ DAILY RATE	00530 Total Suspended Solids (mg/L)	00556 Oil and Grease (mg/L)	01055 Manganese (mg/L)											
	HRS	HRS	Y/B/N	MGD														
1				0.0023														
2				0.0023														
3				0.0023														
4				0.0023														
5	1700	1	Y	0.0023														
6				0.0021														
7				0.0021														
8				0.0021														
9				0.0021														
10				0.0021														
11				0.0021														
12				0.0021														
13				0.0021														
14	830	1	Y	0.0021														
15				0.0021														
16				0.0021														
17				0.0021														
18	843	1	Y	0.0021														
19				0.0020														
20				0.0020														
21				0.0020														
22				0.0020														
23				0.0020														
24				0.0020														
25	1300	1	Y	0.0020														
26				0.0020														
27				0.0020														
28	1630	1	Y	0.0020	<1.7	<4.8	<0.010											
29				0.0019														
30				0.0019														
31	1630	1	Y	0.0019														
AVERAGE				0.0021	<1.7	<4.8	<0.010											
MAXIMUM				0.0023	<1.7	<4.8	<0.010											
MINIMUM				0.0019	<1.7	<4.8	<0.010											
Comp. (C) / Grab (G)					G	G	G											
Monthly Limit				0.0144	30	NA	0.200											

DWQ Form MR-1.1 (11/04)

Facility Status: (Please check one of the following)

All monitoring data and sampling frequencies meet permit requirements (including weekly averages, if applicable) [X] Compliant

All monitoring data and sampling frequencies do NOT meet permit requirements [ ] Noncompliant

The permittee shall report to the Director or the appropriate Regional Office any noncompliance that potentially threatens public health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

If the facility is noncompliant, please attach a list of corrective actions being taken and a time-table for improvements to be made as required by Part II.E.6 of the NPDES permit.

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Bruce Biehl
Permittee **(Please print or type)**

9/23/15

Signature of Permittee*** Date
(Required unless submitted electronically)

Permittee Address	Phone Number	e-mail address	Permit Expiration Date
Brenntag Mid-South, Inc. 2000 East Pettigrew Street, Durham, NC 27703	(919) 596-0681		April 30, 2016

ADDITIONAL CERTIFIED LABORATORIES

Certified Laboratory (2) _____ Certification No. _____
Certified Laboratory (3) _____ Certification No. _____
Certified Laboratory (4) _____ Certification No. _____
Certified Laboratory (5) _____ Certification No. _____

PARAMETER CODES

Parameter Code assistance may be obtained by calling the NPDES Unit at (919) 733-5083 or by visiting the Surface Water Protection Section's web site at h2o.enr.state.nc.us/wqs and linking to the unit's information pages.

Use only units of measurement designated in the reporting facility's NPDES permit for reporting data.

* **No Flow/Discharge From Site:** Check this box if no discharge occurs and, as a result, there are no data to be entered for all of the parameters on the DMR for the entire monitoring period.

** **ORC On Site?:** ORC must visit facility and document visitation of facility as required per 15A NCAC 8G .0204.

*** **Signature of Permittee:** If signed by other than the permittee, then the delegation of the signatory authority must be on file with the state per 15A NCAC 2B .0506(b)(2)(D).

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Monthly)

TestAmerica Job ID: 680-116189-1

Client Sample ID: Effluent

Lab Sample ID: 680-116189-5

Date Collected: 08/28/15 16:04
Date Received: 08/29/15 10:25

Matrix: Water

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.010	U	0.010		mg/L		09/02/15 18:25	09/04/15 00:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	4.8	U	4.8		mg/L		09/01/15 09:24	09/01/15 11:09	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.7	U	1.7		mg/L			09/03/15 09:43	1

ARCADIS
Infrastructure, water, environment, buildings

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

ATTN: Central Files
Division of Water Quality
North Carolina Department of Environment and Natural Resources
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Subject:
Discharge Monitoring Report for September 2015, Brenntag Mid-South Facility
2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827

Date:
October 29, 2015

Contact:
James E. Shilliday, III

Phone:
Ext. 52302

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0025

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Discharge Monitoring Report (DMR) for the month of September 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is the laboratory analytical data report for the system effluent sampling event conducted in September 2015. The effluent sample was analyzed for parameters stipulated under the NPDES Permit No. NC0086827.

During September 2015, the groundwater remediation system operated throughout the month with approximately four days of downtime. The system was shut down on September 24, 2015 to perform the monthly system cleaning activities. The system cleaning activities included descaling the air stripper trays and sump, changing the carbon in the GAC units, and bag filter replacement. A union valve broke during the system cleaning event and the system remained deactivated until replacement parts could be ordered. The replacement valve was installed and the system was restarted on September 28, 2015. As of September 29, 2015, approximately 7,916,242 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on September 29, 2015. The effluent grab sample that was collected from the groundwater remediation system was analyzed for total suspended solids by Standard Method 2540D, total manganese by EPA Method 200.7, and oil and grease by EPA Method 1664A as required by the NPDES permit. All of the parameters listed on the DMR were in compliance with NPDES permit requirements.

As required by the NPDES permit, the remediation system effluent will be sampled again in October 2015 for the quarterly sampling parameters.

ARCADIS

If you have any questions regarding the information in this letter or presented on the DMR, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Bruce Biehl (Brenntag Mid-South, Inc.)
Project File

EFFLUENT

NPDES PERMIT NO. NC0086827 DISCHARGE NO. 001 MONTH September YEAR 2015
FACILITY NAME Brenntag Mid-South, Inc CLASS PC-1 COUNTY Durham
CERTIFIED LABORATORY (1) Test America, Inc CERTIFICATION NO. 387
(list additional laboratories on the backside/page 2 of this form)
OPERATOR IN RESPONSIBLE CHARGE (ORC) Bruce Biehl GRADE PC-1 CERTIFICATION NO. 28152
PERSON(S) COLLECTING SAMPLES Dave Twamley (ARCADIS) ORC PHONE (919) 596-0681
CHECK BOX IF ORC HAS CHANGED * ☐ **NO FLOW / DISCHARGE FROM SITE *** ☐

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER QUALITY
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

x (SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) 10/27/15 DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	Operator Arrival Time 2400 Clock	Operator Time Onsite	ORC On Site? **	50050 FLOW EFF ☒ INF ☐ DAILY RATE	00530 Total Suspended Solids (mg/L)	00556 Oil and Grease (mg/L)	01055 Manganese (mg/L)
	HRS	HRS	Y/B/N	MGD			
1	1700	1	Y	0.0020			
2				0.0023			
3				0.0023			
4				0.0023			
5				0.0023			
6				0.0023			
7				0.0023			
8	1700	1	Y	0.0023			
9				0.0019			
10				0.0019			
11				0.0019			
12				0.0019			
13				0.0019			
14				0.0019			
15	1500	1	Y	0.0019			
16				0.0016			
17				0.0016			
18				0.0016			
19				0.0016			
20				0.0016			
21				0.0016			
22				0.0016			
23				0.0016			
24	930	1	Y	0.0016			
25	1500	1	Y	0.0000			
26				0.0000			
27				0.0000			
28	1630	1	Y	0.0000			
29	1150	1	Y	0.0014	<1.8	<4.8	<0.010
30				0.0014			
31							
AVERAGE				0.0016	<1.8	<4.8	<0.010
MAXIMUM				0.0023	<1.8	<4.8	<0.010
MINIMUM				0.0000	<1.8	<4.8	<0.010
Comp. (C) / Grab (G)					G	G	G
Monthly Limit				0.0144	30	NA	0.200

DWQ Form MR-1.1 (11/04)

Facility Status: (Please check one of the following)

All monitoring data and sampling frequencies meet permit requirements (including weekly averages, if applicable) [X] Compliant

All monitoring data and sampling frequencies do NOT meet permit requirements [ ] Noncompliant

The permittee shall report to the Director or the appropriate Regional Office any noncompliance that potentially threatens public health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

If the facility is noncompliant, please attach a list of corrective actions being taken and a time-table for improvements to be made as required by Part II.E.6 of the NPDES permit.

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Bruce Biehl
Permittee **(Please print or type)**

Signature of Permittee*** Date
(Required unless submitted electronically)

Permittee Address	Phone Number	e-mail address	Permit Expiration Date
Brenntag Mid-South, Inc. 2000 East Pettigrew Street, Durham, NC 27703	(919) 596-0681		April 30, 2016

ADDITIONAL CERTIFIED LABORATORIES

Certified Laboratory (2) _____ Certification No. _____
Certified Laboratory (3) _____ Certification No. _____
Certified Laboratory (4) _____ Certification No. _____
Certified Laboratory (5) _____ Certification No. _____

PARAMETER CODES

Parameter Code assistance may be obtained by calling the NPDES Unit at (919) 733-5083 or by visiting the Surface Water Protection Section's web site at h2o.enr.state.nc.us/wqs and linking to the unit's information pages.

Use only units of measurement designated in the reporting facility's NPDES permit for reporting data.

* **No Flow/Discharge From Site:** Check this box if no discharge occurs and, as a result, there are no data to be entered for all of the parameters on the DMR for the entire monitoring period.

** **ORC On Site?:** ORC must visit facility and document visitation of facility as required per 15A NCAC 8G .0204.

*** **Signature of Permittee:** If signed by other than the permittee, then the delegation of the signatory authority must be on file with the state per 15A NCAC 2B .0506(b)(2)(D).

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Monthly)

TestAmerica Job ID: 680-117296-1

Client Sample ID: Effluent

Lab Sample ID: 680-117296-5

Date Collected: 09/29/15 16:04
Date Received: 09/30/15 09:35

Matrix: Water

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.010	U	0.010		mg/L		10/01/15 09:31	10/02/15 01:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	4.8	U	4.8		mg/L		10/02/15 08:58	10/02/15 12:37	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.8	U	1.8		mg/L			10/02/15 08:04	1

ARCADIS
Infrastructure, water, environment, buildings

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

North Carolina Department of Environmental Quality
Division of Water Resources
Aquatic Toxicology Branch
1623 Mail Service Center
Raleigh, North Carolina 27699-1623

Subject:
Chronic Toxicity Testing Report for October 2015, Brenntag Mid-South Facility, 2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827
Durham County

Date:
November 24, 2015

Contact:
Jim Shilliday

Phone:
Ext. 246

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0025

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Division of Environmental Management (DEM) form AT-1 for the month of October 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is a copy of the laboratory analytical data report for the analytical parameters required by the NPDES permit.

During October 2015, the groundwater remediation system was deactivated for a majority of the first half of the month due to a subsurface leak in the compressed air line that feeds air to the pneumatic pumps in the recovery wells. The damaged piping for the compressed air line was replaced and the system was restarted on October 13, 2015. The monthly system cleaning activities were performed on October 22, 2015, which included air stripper cleaning, changing the carbon in the GAC units, and backwashing the resin units. As of October 29, 2015, approximately 7,948,914 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on October 27, 2015. The effluent grab sample collected from the groundwater remediation system on October 27, 2015, was submitted for analysis of select volatile organic compounds by EPA Method 624, bis(2-ethylhexyl)phthalate by EPA Method 8270LL, total suspended solids (TSS) by Standard Method 2540D, iron, manganese, and zinc by EPA Method 200.7, oil and grease by EPA Method 1664A, and pH by EPA Method 150.1. All parameters were in compliance with permit requirements.

The remediation system effluent was sampled for the chronic toxicity test on October 27 and 29, 2015. The grab samples were delivered in person on October 27 and 29, 2015, to Research & Analytical Laboratories, Inc. in Kernersville, North Carolina. The samples were analyzed in accordance with the test procedures outlined in the

Effluent Toxicity Report Form - Chronic Pass/Fail and Acute LC50 Date: 11/05/15

Facility: BRENNTAG SOUTHCHEM NPDES#: NC0086827 Pipe#: 001 County: DURHAM

Laboratory Performing Test: R & A LABORATORIES, INC.

X _____
Signature of Operator in Responsible Charge

X _____
Signature of Laboratory Supervisor

Comments: Final Effluent An Arcadis Project

* PASSED: 5.07% Reduction *

Work Order: 10843/10943

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Environmental Management
N.C. Dept. of EHNR
1621 Mail Service Ctr
Raleigh, North Carolina 27699-1621

North Carolina Ceriodaphnia
Chronic Pass/Fail Reproduction Toxicity Test

CONTROL ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	25	22	21	23	23	21	25	21	22	24	24	25
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Effluent %: 90%

TREATMENT 2 ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	21	23	22	22	21	22	23	19	23	22	23	21
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Chronic Test Results
Calculated t = 2.028
Tabular t = 2.508
% Reduction = 5.07

% Mortality	Avg.Reprod.
0.00 Control	23.00 Control
0.00 Treatment 2	21.83 Treatment 2

Control CV 6.937%

% control orgs producing 3rd brood 100%

PASS	FAIL
X	

Check One

pH	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	6.94	6.99	6.91	7.00	6.96	7.04
Treatment 2	7.71	7.80	7.59	7.67	7.60	7.68

D.O.	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	8.6	8.4	8.6	8.3	8.6	8.4
Treatment 2	8.5	8.3	8.5	8.2	8.5	8.3

Complete This For Either Test
Test Start Date: 10/28/15
Collection (Start) Date
Sample 1: 10/27/15 Sample 2: 10/29/15
Sample Type/Duration

	Grab	Comp.	Duration
Sample 1	X		hrs
Sample 2	X		hrs

DILUT	1st SAMP	2nd P/F SAMP
Hardness (mg/l)	47	
Spec. Cond. (µmhos)	186	824	764
Chlorine (mg/l)		0.02	0.03
Sample temp. at receipt (°C)		1.8	3.1

Note: Please Complete This Section Also

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

%	%	%	%	%	%	%	%	%	%	Concentration
%	%	%	%	%	%	%	%	%	%	Mortality

LC50 = _____%
95% Confidence Limits
_____% -- _____%

Method of Determination
Moving Average __ Probit __
Spearman Karber __ Other ____

	pH start	pH end		D.O. start	D.O. end
			Control		
			High Conc.		

Organism Tested: Ceriodaphnia dubia Duration(hrs): _____

Copied from DEM form AT-1 (3/87) rev. 11/95 (DUBIA ver. 4.32)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Quarterly)

TestAmerica Job ID: 680-118347-1

Client Sample ID: Effluent

Date Collected: 10/27/15 10:54
Date Received: 10/28/15 10:00

Lab Sample ID: 680-118347-5

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	130	U	130		ug/L			10/30/15 18:32	5
Benzene	5.0	U	5.0		ug/L			10/30/15 18:32	5
cis-1,2-Dichloroethene	5.0	U	5.0		ug/L			10/30/15 18:32	5
1,1-Dichloroethene	5.0	U	5.0		ug/L			10/30/15 18:32	5
Tetrachloroethene	5.0	U	5.0		ug/L			10/30/15 18:32	5
Toluene	5.0	U	5.0		ug/L			10/30/15 18:32	5
Trichloroethene	5.0	U	5.0		ug/L			10/30/15 18:32	5
Vinyl chloride	5.0	U	5.0		ug/L			10/30/15 18:32	5
Xylenes, Total	10	U	10		ug/L			10/30/15 18:32	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*79 - 119*		*10/30/15 18:32*	*5*
1,2-Dichloroethane-d4 (Surr)	*124*		*70 - 130*		*10/30/15 18:32*	*5*
4-Bromofluorobenzene (Surr)	*89*		*71 - 121*		*10/30/15 18:32*	*5*
Dibromofluoromethane (Surr)	*119*		*77 - 129*		*10/30/15 18:32*	*5*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	0.48	U	0.48		ug/L		11/03/15 16:29	11/05/15 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5 (Surr)	*67*		*34 - 101*	*11/03/15 16:29*	*11/05/15 20:07*	*1*
Nitrobenzene-d5 (Surr)	*74*		*43 - 107*	*11/03/15 16:29*	*11/05/15 20:07*	*1*
Terphenyl-d14 (Surr)	*88*		*20 - 112*	*11/03/15 16:29*	*11/05/15 20:07*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*48 - 123*	*11/03/15 16:29*	*11/05/15 20:07*	*1*
2-Fluorophenol (Surr)	*66*		*32 - 100*	*11/03/15 16:29*	*11/05/15 20:07*	*1*
2-Fluorobiphenyl	*68*		*43 - 105*	*11/03/15 16:29*	*11/05/15 20:07*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		11/04/15 10:46	11/05/15 03:35	1
Manganese	0.010	U	0.010		mg/L		11/04/15 10:46	11/05/15 03:35	1
Zinc	0.020	U	0.020		mg/L		11/04/15 10:46	11/05/15 03:35	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.42**	**HF**			SU			11/04/15 17:05	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	5.1	U	5.1		mg/L		10/30/15 08:20	10/30/15 12:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.0	U	1.0		mg/L			10/29/15 11:44	1

ARCADIS
Infrastructure, water, environment, buildings

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

ATTN: Central Files
North Carolina Department of Environmental Quality
Division of Water Resources
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Subject:
Discharge Monitoring Report for October 2015, Brenntag Mid-South Facility, 2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827
Durham County

Date:
November 24, 2015

Contact:
Jim Shilliday

Phone:
Ext. 2302

Email:
jshilliday@arcadis-us.com

Our ref:
NC000368.0025

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Discharge Monitoring Report (DMR) for the month of October 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is the laboratory analytical data report for the parameters shown on the DMR and a copy of the Effluent Aquatic Toxicity Report Form (Form AT-1).

During October 2015, the groundwater remediation system was deactivated for a majority of the first half of the month due to a subsurface leak in the compressed air line that feeds air to the pneumatic pumps in the recovery wells. The damaged piping for the compressed air line was replaced and the system was restarted on October 13, 2015. The monthly system cleaning activities were performed on October 22, 2015, which included air stripper cleaning, changing the carbon in the GAC units, and backwashing the resin units. As of October 29, 2015, approximately 7,948,914 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on October 27, 2015. The effluent grab sample collected from the groundwater remediation system on October 27, 2015, was submitted for analysis of select volatile organic compounds by EPA Method 624, bis(2-ethylhexyl)phthalate by EPA Method 8270LL, total suspended solids (TSS) by Standard Method 2540D, iron, manganese, and zinc by EPA Method 200.7, oil and grease by EPA Method 1664A, and pH by EPA Method 150.1. All parameters were in compliance with permit requirements.

The remediation system effluent was sampled for the chronic toxicity test on October 27 and 29, 2015. The grab samples were delivered in person on October 27 and 29, 2015, to Research & Analytical Laboratories, Inc. in Kernersville, North Carolina. The samples were analyzed in accordance with the test procedures outlined in the

ARCADIS

North Carolina *Ceriodaphnia* Chronic Effluent Toxicity Procedure (revised February 1998). The remediation system effluent samples passed the chronic toxicity test.

As required by the NPDES permit, the remediation system effluent will be sampled again in November 2015 for the annual sampling parameters.

If you have any questions regarding the information in this letter or presented on the DMR, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Bruce Biehl (Brenntag Mid-South, Inc.)
Project File

EFFLUENT

NPDES PERMIT NO. NC0086827 DISCHARGE NO. 001 MONTH October YEAR 2015
FACILITY NAME Brenntag Mid-South, Inc CLASS PC-1 COUNTY Durham
CERTIFIED LABORATORY (1) Test America CERTIFICATION NO. 387
(list additional laboratories on the backside/page 2 of this form)
OPERATOR IN RESPONSIBLE CHARGE (ORC) Bruce Biehl GRADE PC-1 CERTIFICATION NO. 28152
PERSON(S) COLLECTING SAMPLES Dave Twamley (ARCADIS) ORC PHONE (919) 596-0681
CHECK BOX IF ORC HAS CHANGED * ☐ **NO FLOW / DISCHARGE FROM SITE *** ☐

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER QUALITY
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

x
(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) 11/24/15 DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	Operator Arrival Time 2400 Clock	Operator Time On Site	ORC On Site? **	50050 FLOW EFF ☒ INF ☐ DAILY RATE	00530 Total Suspended Solids (mg/L)	00556 Oil and Grease (mg/L)	01045 Iron (mg/L)	01055 Manganese (mg/L)	01092 Zinc (mg/L)	00400 pH (SU)	81552 Acetone (µg/L)	34030 Benzene (µg/L)	81686 cis-1,2-Dichloroethene (µg/L)	34501 1,1-Dichloroethene (µg/L)	78389 Tetrachloroethene (µg/L)	39180 Trichloroethene (µg/L)	34010 Toluene (µg/L)	39175 Vinyl Chloride (µg/L)	81551 Total Xylenes (µg/L)	39100 Bis(2-ethylhexyl) phthalate (ug/L)	TGP3B Chronic Toxicity
	HRS	HRS	Y/B/N	MGD																	
1	800	1	Y	0.0000																	
2				0.0000																	
3				0.0000																	
4				0.0000																	
5	900	1	Y	0.0000																	
6				0.0000																	
7				0.0000																	
8				0.0000																	
9				0.0000																	
10				0.0000																	
11				0.0000																	
12	1000	1	Y	0.0000																	
13	1300	1	Y	0.0000																	
14				0.0022																	
15				0.0022																	
16				0.0022																	
17				0.0022																	
18				0.0022																	
19				0.0022																	
20				0.0022																	
21				0.0022																	
22	930	1	Y	0.0022																	
23				0.0019																	
24				0.0019																	
25				0.0019																	
26				0.0019																	
27	1100	1	Y	0.0019	<1.0	<5.1	<0.050	<0.010	<0.020	8.42	<130	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<0.48	pass
28				0.0019																	
29	1030	1	Y	0.0019																	
30				0.0019																	
31				0.0019																	
AVERAGE				0.0012	<1.0	<5.1	<0.050	<0.010	<0.020	8.42	<130	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<0.48	pass
MAXIMUM				0.0022	<1.0	<5.1	<0.050	<0.010	<0.020	8.42	<130	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<0.48	pass
MINIMUM				0.0000	<1.0	<5.1	<0.050	<0.010	<0.020	8.42	<130	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<0.48	pass
Comp (C) / Grab (G)					G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Monthly Limit				0.0144	30			0.200													

Facility Status: (Please check one of the following)

All monitoring data and sampling frequencies meet permit requirements (including weekly averages, if applicable) [X] Compliant

All monitoring data and sampling frequencies do NOT meet permit requirements [ ] Noncompliant

The permittee shall report to the Director or the appropriate Regional Office any noncompliance that potentially threatens public health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

If the facility is noncompliant, please attach a list of corrective actions being taken and a time-table for improvements to be made as required by Part II.E.6 of the NPDES permit.

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Bruce Biehl
Permittee **(Please print or type)**

11/24/15
Signature of Permittee*** Date
(Required unless submitted electronically)

Permittee Address	Phone Number	e-mail address	Permit Expiration Date
Brenntag Mid-South, Inc. 2000 East Pettigrew Street, Durham, NC 27703	(919) 596-0681		April 30, 2016

ADDITIONAL CERTIFIED LABORATORIES

Certified Laboratory (2)	R&A Labs	Certification No.	34
Certified Laboratory (3)		Certification No.	
Certified Laboratory (4)		Certification No.	
Certified Laboratory (5)		Certification No.	

PARAMETER CODES

Parameter Code assistance may be obtained by calling the NPDES Unit at (919) 733-5083 or by visiting the Surface Water Protection Section's web site at h2o.enr.state.nc.us/wqs and linking to the unit's information pages.

Use only units of measurement designated in the reporting facility's NPDES permit for reporting data.

* **No Flow/Discharge From Site:** Check this box if no discharge occurs and, as a result, there are no data to be entered for all of the parameters on the DMR for the entire monitoring period.

** **ORC On Site?:** ORC must visit facility and document visitation of facility as required per 15A NCAC 8G .0204.

*** **Signature of Permittee:** If signed by other than the permittee, then the delegation of the signatory authority must be on file with the state per 15A NCAC 2B .0506(b)(2)(D).

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Quarterly)

TestAmerica Job ID: 680-118347-1

Client Sample ID: Effluent

Date Collected: 10/27/15 10:54
Date Received: 10/28/15 10:00

Lab Sample ID: 680-118347-5

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	130	U	130		ug/L			10/30/15 18:32	5
Benzene	5.0	U	5.0		ug/L			10/30/15 18:32	5
cis-1,2-Dichloroethene	5.0	U	5.0		ug/L			10/30/15 18:32	5
1,1-Dichloroethene	5.0	U	5.0		ug/L			10/30/15 18:32	5
Tetrachloroethene	5.0	U	5.0		ug/L			10/30/15 18:32	5
Toluene	5.0	U	5.0		ug/L			10/30/15 18:32	5
Trichloroethene	5.0	U	5.0		ug/L			10/30/15 18:32	5
Vinyl chloride	5.0	U	5.0		ug/L			10/30/15 18:32	5
Xylenes, Total	10	U	10		ug/L			10/30/15 18:32	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*79 - 119*		*10/30/15 18:32*	*5*
1,2-Dichloroethane-d4 (Surr)	*124*		*70 - 130*		*10/30/15 18:32*	*5*
4-Bromofluorobenzene (Surr)	*89*		*71 - 121*		*10/30/15 18:32*	*5*
Dibromofluoromethane (Surr)	*119*		*77 - 129*		*10/30/15 18:32*	*5*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	0.48	U	0.48		ug/L		11/03/15 16:29	11/05/15 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5 (Surr)	*67*		*34 - 101*	*11/03/15 16:29*	*11/05/15 20:07*	*1*
Nitrobenzene-d5 (Surr)	*74*		*43 - 107*	*11/03/15 16:29*	*11/05/15 20:07*	*1*
Terphenyl-d14 (Surr)	*88*		*20 - 112*	*11/03/15 16:29*	*11/05/15 20:07*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*48 - 123*	*11/03/15 16:29*	*11/05/15 20:07*	*1*
2-Fluorophenol (Surr)	*66*		*32 - 100*	*11/03/15 16:29*	*11/05/15 20:07*	*1*
2-Fluorobiphenyl	*68*		*43 - 105*	*11/03/15 16:29*	*11/05/15 20:07*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		11/04/15 10:46	11/05/15 03:35	1
Manganese	0.010	U	0.010		mg/L		11/04/15 10:46	11/05/15 03:35	1
Zinc	0.020	U	0.020		mg/L		11/04/15 10:46	11/05/15 03:35	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.42**	**HF**			SU			11/04/15 17:05	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	5.1	U	5.1		mg/L		10/30/15 08:20	10/30/15 12:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.0	U	1.0		mg/L			10/29/15 11:44	1

Effluent Toxicity Report Form - Chronic Pass/Fail and Acute LC50 Date: 11/05/15

Facility: BRENNTAG SOUTHCHEM NPDES#: NC0086827 Pipe#: 001 County: DURHAM

Laboratory Performing Test: R & A LABORATORIES, INC.

X _____
Signature of Operator in Responsible Charge

X _____
Signature of Laboratory Supervisor

Comments: Final Effluent An Arcadis Project

* PASSED: 5.07% Reduction *

Work Order: 10843/10943

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Environmental Management
N.C. Dept. of EHNR
1621 Mail Service Ctr
Raleigh, North Carolina 27699-1621

North Carolina Ceriodaphnia
Chronic Pass/Fail Reproduction Toxicity Test

CONTROL ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	25	22	21	23	23	21	25	21	22	24	24	25
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Effluent %: 90%

TREATMENT 2 ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	21	23	22	22	21	22	23	19	23	22	23	21
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Chronic Test Results
Calculated t = 2.028
Tabular t = 2.508
% Reduction = 5.07

% Mortality	Avg.Reprod.
0.00 Control	23.00 Control
0.00 Treatment 2	21.83 Treatment 2

Control CV 6.937%

% control orgs producing 3rd brood 100%

PASS	FAIL
X	

Check One

pH	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	6.94	6.99	6.91	7.00	6.96	7.04
Treatment 2	7.71	7.80	7.59	7.67	7.60	7.68

D.O.	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	8.6	8.4	8.6	8.3	8.6	8.4
Treatment 2	8.5	8.3	8.5	8.2	8.5	8.3

Complete This For Either Test
Test Start Date: 10/28/15
Collection (Start) Date
Sample 1: 10/27/15 Sample 2: 10/29/15
Sample Type/Duration

	Grab	Comp.	Duration
Sample 1	X		hrs
Sample 2	X		hrs

	DILUT	1st SAMP	2nd P/F SAMP
Hardness (mg/l)	47		
Spec. Cond. (µmhos)	186	824	764
Chlorine (mg/l)		0.02	0.03
Sample temp. at receipt (°C)		1.8	3.1

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

%	%	%	%	%	%	%	%	%	%	Concentration
%	%	%	%	%	%	%	%	%	%	Mortality

Note: Please Complete This Section Also

LC50 = _____%
95% Confidence Limits
_____% -- _____%

Method of Determination
Moving Average __ Probit __
Spearman Karber __ Other ____

	pH start	pH end		D.O. start	D.O. end
			Control		
			High Conc.		

Organism Tested: Ceriodaphnia dubia Duration(hrs): _____

Copied from DEM form AT-1 (3/87) rev. 11/95 (DUBIA ver. 4.32)

ARCADIS
Infrastructure, environment, facilities

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh,
North Carolina 27607-5073
Tel 919 854 1282
Fax 919 854 5448
www.arcadis-us.com

ENVIRONMENTAL

ATTN: Central Files
Division of Water Resources
North Carolina Department of Environmental Quality
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Subject:
Discharge Monitoring Report for November 2015, Brenntag Mid-South Facility
2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827
Durham County

Date:
December 22, 2015

Contact:
Jim Shilliday

Phone:
Ext. 2302

Email:
jshilliday@arcadis.com

Our ref:
NC000368.0025

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Discharge Monitoring Report (DMR) for the month of November 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is the laboratory analytical data report for the system effluent sampling event conducted in November 2015. The effluent sample was analyzed for parameters stipulated under the NPDES Permit No. NC0086827.

During November 2015, the groundwater remediation system operated throughout the month with approximately 4 days of downtime. Monthly system cleaning activities were conducted on November 19, 2015, which included air stripper cleaning, changing the carbon in the GAC units, and backwashing the resin units. In addition, the system was found to be deactivated on November 30, 2015, due to a high tank-level alarm. The system was reset on November 30, 2015 and resumed normal operation. As of November 30, 2015, approximately 8,000,419 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on November 23, 2015, and included sampling and analysis for the full suite of volatile organic compounds (VOCs) by EPA Method 624, the full suite of semi-volatile organic compounds (SVOCs) by EPA Method 625, total suspended solids (TSS) by Standard Method 2540D, total manganese by EPA Method 200.7, and oil and grease by EPA Method 1664A. All parameters were in compliance with the NPDES permit requirements. No VOCs or SVOCs were detected in the effluent sample.

As required by the NPDES permit, the remediation system effluent will be sampled again in December 2015 for the standard monthly sampling parameters.

ARCADIS

If you have any questions regarding the information in this letter or presented on the DMR, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/Project Manager

Copies: Bruce Biehl – Brenntag Mid-South; Project File

EFFLUENT

NPDES PERMIT NO. NC0086827 DISCHARGE NO. 001 MONTH November YEAR 2015
FACILITY NAME Brenntag Mid-South, Inc CLASS PC-1 COUNTY Durham
CERTIFIED LABORATORY (1) Test America, Inc CERTIFICATION NO. 387
(list additional laboratories on the backside/page 2 of this form)
OPERATOR IN RESPONSIBLE CHARGE (ORC) Bruce Biehl GRADE PC-1 CERTIFICATION NO. 28152
PERSON(S) COLLECTING SAMPLES Dave Twamley (ARCADIS) ORC PHONE (919) 596-0681
CHECK BOX IF ORC HAS CHANGED ☐ **NO FLOW / DISCHARGE FROM SITE *** ☐

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER QUALITY
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

x
(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) 12/21/15 DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	Operator Arrival Time 2400 Clock	Operator Time	ORC On Site? **	50050 FLOW EFF ■ INF □ DAILY RATE	00530 Total Suspended Solids (mg/L)	00556 Oil and Grease (mg/L)	01055 Manganese (mg/L)	76029 VOCsEPA Method 624 (full suite)	76028 SVOCs EPA Method 625 (full suite)									
	HRS	HRS	Y/B/N	MGD														
1				0.0020														
2	800	1	Y	0.0020														
3				0.0019														
4				0.0019														
5				0.0019														
6				0.0019														
7				0.0019														
8				0.0019														
9	1300	1	Y	0.0019														
10				0.0019														
11				0.0019														
12				0.0019														
13	1330	1	Y	0.0019														
14				0.0018														
15				0.0018														
16				0.0018														
17				0.0018														
18				0.0018														
19	900	1	Y	0.0018														
20				0.0021														
21				0.0021														
22				0.0021														
23	1030	1	Y	0.0021	<1.8	<9.5	<0.010	*	*									
24				0.0005														
25				0.0005														
26				0.0005														
27				0.0005														
28				0.0005														
29				0.0005														
30	845	1	Y	0.0005														
31																		
AVERAGE				0.0016	<1.8	<9.5	<0.010	*	*									
MAXIMUM				0.0021	<1.8	<9.5	<0.010	*	*									
MINIMUM				0.0005	<1.8	<9.5	<0.010	*	*									
Comp. (C) / Grab (G)					G	G	G	G	G									
Monthly Limit				0.0144	30	NA	0.200	NA	NA									

*** See attached laboratory data report for analytical results**

DWQ Form MR-1.1 (11/04)

Facility Status: (Please check one of the following)

All monitoring data and sampling frequencies meet permit requirements (including weekly averages, if applicable) [X] Compliant

All monitoring data and sampling frequencies do NOT meet permit requirements [ ] Noncompliant

The permittee shall report to the Director or the appropriate Regional Office any noncompliance that potentially threatens public health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

If the facility is noncompliant, please attach a list of corrective actions being taken and a time-table for improvements to be made as required by Part II.E.6 of the NPDES permit.

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Bruce Biehl
Permittee **(Please print or type)**

12/21/15
Signature of Permittee*** Date
(Required unless submitted electronically)

Brenntag Southeast, Inc. 2000 East Pettigrew Street, Durham, NC 27703	(919) 596-0681		April 30, 2016
Permittee Address	Phone Number	e-mail address	Permit Expiration Date

ADDITIONAL CERTIFIED LABORATORIES

Certified Laboratory (2) _____ Certification No. _____
Certified Laboratory (3) _____ Certification No. _____
Certified Laboratory (4) _____ Certification No. _____
Certified Laboratory (5) _____ Certification No. _____

PARAMETER CODES

Parameter Code assistance may be obtained by calling the NPDES Unit at (919) 733-5083 or by visiting the Surface Water Protection Section's web site at h2o.enr.state.nc.us/wqs and linking to the unit's information pages.

Use only units of measurement designated in the reporting facility's NPDES permit for reporting data.

* **No Flow/Discharge From Site:** Check this box if no discharge occurs and, as a result, there are no data to be entered for all of the parameters on the DMR for the entire monitoring period.

** **ORC On Site?:** ORC must visit facility and document visitation of facility as required per 15A NCAC 8G .0204.

*** **Signature of Permittee:** If signed by other than the permittee, then the delegation of the signatory authority must be on file with the state per 15A NCAC 2B .0506(b)(2)(D).

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag/Durham NPDES (Annual)

TestAmerica Job ID: 680-119375-1

Client Sample ID: Effluent

Lab Sample ID: 680-119375-5

Date Collected: 11/23/15 10:24
Date Received: 11/24/15 09:54

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			12/01/15 20:11	1
Benzene	1.0	U	1.0		ug/L			12/01/15 20:11	1
Bromoform	1.0	U	1.0		ug/L			12/01/15 20:11	1
Bromomethane	5.0	U	5.0		ug/L			12/01/15 20:11	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/01/15 20:11	1
Chlorobenzene	1.0	U	1.0		ug/L			12/01/15 20:11	1
Chlorodibromomethane	1.0	U	1.0		ug/L			12/01/15 20:11	1
Chloroethane	5.0	U	5.0		ug/L			12/01/15 20:11	1
2-Chloroethyl vinyl ether	10	U	10		ug/L			12/01/15 20:11	1
Chloroform	1.0	U	1.0		ug/L			12/01/15 20:11	1
Chloromethane	1.0	U	1.0		ug/L			12/01/15 20:11	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/01/15 20:11	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/01/15 20:11	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/01/15 20:11	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/01/15 20:11	1
Dichlorobromomethane	1.0	U	1.0		ug/L			12/01/15 20:11	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/01/15 20:11	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/01/15 20:11	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/01/15 20:11	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/01/15 20:11	1
Ethylbenzene	1.0	U	1.0		ug/L			12/01/15 20:11	1
Methylene Chloride	5.0	U	5.0		ug/L			12/01/15 20:11	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/01/15 20:11	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/01/15 20:11	1
Toluene	1.0	U	1.0		ug/L			12/01/15 20:11	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/01/15 20:11	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/01/15 20:11	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/01/15 20:11	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/01/15 20:11	1
Trichloroethene	1.0	U	1.0		ug/L			12/01/15 20:11	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/01/15 20:11	1
Vinyl chloride	1.0	U	1.0		ug/L			12/01/15 20:11	1
Xylenes, Total	2.0	U	2.0		ug/L			12/01/15 20:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*79 - 119*		*12/01/15 20:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*		*12/01/15 20:11*	*1*
4-Bromofluorobenzene (Surr)	*96*		*71 - 121*		*12/01/15 20:11*	*1*
Dibromofluoromethane (Surr)	*106*		*77 - 129*		*12/01/15 20:11*	*1*

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
2,4-Dichlorophenol	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
2,4-Dimethylphenol	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
2,4-Dinitrophenol	50	U	50		ug/L		11/30/15 15:53	12/04/15 02:37	1
2-Nitrophenol	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
4,6-Dinitro-2-methylphenol	50	U	50		ug/L		11/30/15 15:53	12/04/15 02:37	1
4-Chloro-3-methylphenol	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
4-Nitrophenol	50	U F2	50		ug/L		11/30/15 15:53	12/04/15 02:37	1

Client Sample ID: Effluent

Date Collected: 11/23/15 10:24
Date Received: 11/24/15 09:54

Lab Sample ID: 680-119375-5
Matrix: Water

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	50	U	50		ug/L		11/30/15 15:53	12/04/15 02:37	1
2-Chlorophenol	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
1,2,4-Trichlorobenzene	10	U * F1 F2	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
1,2-Dichlorobenzene	10	U * F1	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
1,2-Diphenylhydrazine	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
1,3-Dichlorobenzene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
1,4-Dichlorobenzene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
2-Chloronaphthalene	10	U * F1	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
2,6-Dinitrotoluene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
2,4-Dinitrotoluene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
3,3'-Dichlorobenzidine	60	U	60		ug/L		11/30/15 15:53	12/04/15 02:37	1
4-Bromophenyl phenyl ether	10	U F1	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
4-Chlorophenyl phenyl ether	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Acenaphthene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Acenaphthylene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Anthracene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Benzidine	80	U F1	80		ug/L		11/30/15 15:53	12/04/15 02:37	1
Benzo[a]anthracene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Benzo[a]pyrene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Benzo[b]fluoranthene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Benzo[g,h,i]perylene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Benzo[k]fluoranthene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Bis(2-chloroethoxy)methane	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Bis(2-chloroethyl)ether	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Bis(2-ethylhexyl) phthalate	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Butyl benzyl phthalate	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Chrysene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Di-n-butyl phthalate	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Di-n-octyl phthalate	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Dibenz(a,h)anthracene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Diethyl phthalate	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Dimethyl phthalate	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Fluoranthene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Fluorene	10	U * F1	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Hexachlorobenzene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Hexachlorobutadiene	10	U F1 F2	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Hexachlorocyclopentadiene	20	U	20		ug/L		11/30/15 15:53	12/04/15 02:37	1
Hexachloroethane	10	U * F1 F2	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Isophorone	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
N-Nitrosodi-n-propylamine	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
N-Nitrosodimethylamine	20	U	20		ug/L		11/30/15 15:53	12/04/15 02:37	1
N-Nitrosodiphenylamine	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Naphthalene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Nitrobenzene	10	U	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Phenanthrene	10	U F1	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
Pyrene	10	U F1	10		ug/L		11/30/15 15:53	12/04/15 02:37	1
bis (2-chloroisopropyl) ether	10	U *	10		ug/L		11/30/15 15:53	12/04/15 02:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag/Durham NPDES (Annual)

TestAmerica Job ID: 680-119375-1

Client Sample ID: Effluent

Date Collected: 11/23/15 10:24
Date Received: 11/24/15 09:54

Lab Sample ID: 680-119375-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*67*		*34 - 132*	*11/30/15 15:53*	*12/04/15 02:37*	*1*
2-Fluorophenol	*51*		*35 - 110*	*11/30/15 15:53*	*12/04/15 02:37*	*1*
Phenol-d5	*59*		*27 - 119*	*11/30/15 15:53*	*12/04/15 02:37*	*1*
2-Fluorobiphenyl	*64*		*38 - 121*	*11/30/15 15:53*	*12/04/15 02:37*	*1*
Nitrobenzene-d5	*59*		*44 - 119*	*11/30/15 15:53*	*12/04/15 02:37*	*1*
Terphenyl-d14	*74*		*10 - 165*	*11/30/15 15:53*	*12/04/15 02:37*	*1*

Method: 625 - Semivolatile Organic Compounds (GC/MS) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
2,4-Dichlorophenol	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
2,4-Dimethylphenol	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
2,4-Dinitrophenol	53	U H	53		ug/L		12/07/15 16:41	12/11/15 11:27	1
2-Nitrophenol	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
4,6-Dinitro-2-methylphenol	53	U H	53		ug/L		12/07/15 16:41	12/11/15 11:27	1
4-Chloro-3-methylphenol	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
4-Nitrophenol	53	U H	53		ug/L		12/07/15 16:41	12/11/15 11:27	1
Pentachlorophenol	53	U H	53		ug/L		12/07/15 16:41	12/11/15 11:27	1
2-Chlorophenol	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
1,2,4-Trichlorobenzene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
1,2-Dichlorobenzene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
1,2-Diphenylhydrazine	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
1,3-Dichlorobenzene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
1,4-Dichlorobenzene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
2-Chloronaphthalene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
2,6-Dinitrotoluene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
2,4-Dinitrotoluene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
3,3'-Dichlorobenzidine	64	U H	64		ug/L		12/07/15 16:41	12/11/15 11:27	1
4-Bromophenyl phenyl ether	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
4-Chlorophenyl phenyl ether	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Acenaphthene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Acenaphthylene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Anthracene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Benzidine	85	U H	85		ug/L		12/07/15 16:41	12/11/15 11:27	1
Benzo[a]anthracene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Benzo[a]pyrene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Benzo[b]fluoranthene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Benzo[g,h,i]perylene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Benzo[k]fluoranthene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Bis(2-chloroethoxy)methane	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Bis(2-chloroethyl)ether	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Bis(2-ethylhexyl) phthalate	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Butyl benzyl phthalate	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Chrysene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Di-n-butyl phthalate	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Di-n-octyl phthalate	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Dibenz(a,h)anthracene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Diethyl phthalate	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Dimethyl phthalate	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Fluoranthene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1

Client Sample ID: Effluent

Date Collected: 11/23/15 10:24
Date Received: 11/24/15 09:54

Lab Sample ID: 680-119375-5
Matrix: Water

Method: 625 - Semivolatile Organic Compounds (GC/MS) - RE (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Hexachlorobenzene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Hexachlorobutadiene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Hexachlorocyclopentadiene	21	U H	21		ug/L		12/07/15 16:41	12/11/15 11:27	1
Hexachloroethane	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Indeno[1,2,3-cd]pyrene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Isophorone	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
N-Nitrosodi-n-propylamine	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
N-Nitrosodimethylamine	21	U H	21		ug/L		12/07/15 16:41	12/11/15 11:27	1
N-Nitrosodiphenylamine	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Naphthalene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Nitrobenzene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Phenanthrene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
Pyrene	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1
bis (2-chloroisopropyl) ether	11	U H	11		ug/L		12/07/15 16:41	12/11/15 11:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*71*		*34 - 132*	*12/07/15 16:41*	*12/11/15 11:27*	*1*
2-Fluorophenol	*42*		*35 - 110*	*12/07/15 16:41*	*12/11/15 11:27*	*1*
Phenol-d5	*47*		*27 - 119*	*12/07/15 16:41*	*12/11/15 11:27*	*1*
2-Fluorobiphenyl	*59*		*38 - 121*	*12/07/15 16:41*	*12/11/15 11:27*	*1*
Nitrobenzene-d5	*53*		*44 - 119*	*12/07/15 16:41*	*12/11/15 11:27*	*1*
Terphenyl-d14	*72*		*10 - 165*	*12/07/15 16:41*	*12/11/15 11:27*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.010	U	0.010		mg/L		11/30/15 09:41	11/30/15 17:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	9.5	U	9.5		mg/L		12/01/15 19:02	12/01/15 20:49	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.8	U	1.8		mg/L			11/29/15 15:10	1

ARCADIS
Infrastructure, environment, facilities

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ENVIRONMENTAL

ATTN: Central Files
Division of Water Resources
North Carolina Department of Environmental Quality
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Subject:
Discharge Monitoring Report for December 2015, Brenntag Mid-South Facility
2000 East Pettigrew Street, Durham, North Carolina
NPDES Permit No. NC0086827

Date:
January 28, 2016

Contact:
James E. Shilliday, III

Phone:
Ext. 52302

Email:
jshilliday@arcadis.com

Our ref:
NC000368.0025

Dear Sir or Madam:

ARCADIS is pleased to submit the attached Discharge Monitoring Report (DMR) for the month of December 2015 on behalf of Brenntag Mid-South, Inc. for the facility located at 2000 East Pettigrew Street in Durham, North Carolina. Also attached is the laboratory analytical data report for the system effluent sampling event conducted in December 2015. The effluent sample was analyzed for parameters stipulated under the NPDES Permit No. NC0086827.

During December 2015, the groundwater remediation system was deactivated for the first two weeks of the month due to a malfunction associated with a pressure regulator that controls the system's air supply. A replacement regulator was installed on December 14, 2015, and the system was restarted. The system was also shut down between December 15 and 17, 2015 for performance of the monthly system cleaning activities. The system cleaning activities included descaling the air stripper trays and sump, changing the carbon in the GAC units, and replacement of the particle filters. As of December 29, 2015, approximately 8,015,505 gallons of water had been extracted and treated by the groundwater remediation system since activation of the system in June 2001.

The groundwater remediation system sampling event was conducted on December 21, 2015. The effluent grab sample that was collected from the groundwater remediation system was analyzed for total suspended solids by Standard Method 2540D, total manganese by EPA Method 200.7, and oil and grease by EPA Method 1664A as required by the NPDES permit. All of the parameters listed on the DMR were in compliance with NPDES permit requirements.

As required by the NPDES permit, the remediation system effluent will be sampled again in January 2016 for the quarterly sampling parameters.

ARCADIS

If you have any questions regarding the information in this letter or presented on the DMR, please call one of the individuals listed below.

Sincerely,

ARCADIS G&M of North Carolina, Inc.

David Twamley, L.G.
Staff Scientist

James E. Shilliday, III, L.G.
Principal Scientist/
Project Manager

Copies:
Bruce Biehl (Brenntag Mid-South, Inc.)
Project File

EFFLUENT

NPDES PERMIT NO. NC0086827 DISCHARGE NO. 001 MONTH December YEAR 2015
FACILITY NAME Brenntag Mid-South, Inc CLASS PC-1 COUNTY Durham
CERTIFIED LABORATORY (1) Test America, Inc CERTIFICATION NO. 387
(list additional laboratories on the backside/page 2 of this form)
OPERATOR IN RESPONSIBLE CHARGE (ORC) Bruce Biehl GRADE PC-1 CERTIFICATION NO. 28152
PERSON(S) COLLECTING SAMPLES Dave Twamley (ARCADIS) ORC PHONE (919) 596-0681
CHECK BOX IF ORC HAS CHANGED * ☐ **NO FLOW / DISCHARGE FROM SITE *** ☐

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER QUALITY
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

x (SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) 1/27/16 DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	Operator Arrival Time 2400 Clock	Operator Time Onsite	ORC On Site? **	50050 FLOW EFF ■ INF □ DAILY RATE	00530 Total Suspended Solids (mg/L)	00556 Oil and Grease (mg/L)	01055 Manganese (mg/L)
	HRS	HRS	Y/B/N	MGD			
1				0.0000			
2	1300	1	Y	0.0000			
3	800	1	Y	0.0000			
4				0.0000			
5				0.0000			
6				0.0000			
7				0.0000			
8				0.0000			
9	800	1	Y	0.0000			
10				0.0000			
11				0.0000			
12				0.0000			
13				0.0000			
14	900	1	Y	0.0000			
15	900	1	Y	0.0028			
16				0.0000			
17	1045	1	Y	0.0000			
18				0.0012			
19				0.0012			
20				0.0012			
21	1500	1	Y	0.0012	<1.7	<9.4	<0.010
22				0.0009			
23				0.0009			
24				0.0009			
25				0.0009			
26				0.0009			
27				0.0009			
28				0.0009			
29	1500	1	Y	0.0009			
30				0.0009			
31				0.0009			
AVERAGE				0.0005	<1.7	<9.4	<0.010
MAXIMUM				0.0028	<1.7	<9.4	<0.010
MINIMUM				0.0000	<1.7	<9.4	<0.010
Comp. (C) / Grab (G)					G	G	G
Monthly Limit				0.0144	30	NA	0.200

Facility Status: (Please check one of the following)

All monitoring data and sampling frequencies meet permit requirements (including weekly averages, if applicable) [X] Compliant

All monitoring data and sampling frequencies do NOT meet permit requirements [ ] Noncompliant

The permittee shall report to the Director or the appropriate Regional Office any noncompliance that potentially threatens public health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

If the facility is noncompliant, please attach a list of corrective actions being taken and a time-table for improvements to be made as required by Part II.E.6 of the NPDES permit.

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Bruce Biehl
Permittee **(Please print or type)**

1/27/16
Signature of Permittee*** Date
(Required unless submitted electronically)

Permittee Address	Phone Number	e-mail address	Permit Expiration Date
Brenntag Mid-South, Inc. 2000 East Pettigrew Street, Durham, NC 27703	(919) 596-0681		April 30, 2016

ADDITIONAL CERTIFIED LABORATORIES

Certified Laboratory (2) _____ Certification No. _____
Certified Laboratory (3) _____ Certification No. _____
Certified Laboratory (4) _____ Certification No. _____
Certified Laboratory (5) _____ Certification No. _____

PARAMETER CODES

Parameter Code assistance may be obtained by calling the NPDES Unit at (919) 733-5083 or by visiting the Surface Water Protection Section's web site at h2o.enr.state.nc.us/wqs and linking to the unit's information pages.

Use only units of measurement designated in the reporting facility's NPDES permit for reporting data.

* **No Flow/Discharge From Site:** Check this box if no discharge occurs and, as a result, there are no data to be entered for all of the parameters on the DMR for the entire monitoring period.

** **ORC On Site?:** ORC must visit facility and document visitation of facility as required per 15A NCAC 8G .0204.

*** **Signature of Permittee:** If signed by other than the permittee, then the delegation of the signatory authority must be on file with the state per 15A NCAC 2B .0506(b)(2)(D).

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham NPDES (Monthly)

TestAmerica Job ID: 680-120334-1

Client Sample ID: Effluent

Lab Sample ID: 680-120334-5

Date Collected: 12/21/15 15:04
Date Received: 12/22/15 10:25

Matrix: Water

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.010	U	0.010		mg/L		12/29/15 09:37	12/30/15 16:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	9.4	U	9.4		mg/L		12/23/15 21:27	12/23/15 22:40	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.7	U	1.7		mg/L			12/26/15 10:22	1

Appendix B

Laboratory Analytical Data Reports:
December 2015 Sampling Event

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-119707-1
Client Project/Site: Brenntag Durham Annual GW Monitoring

For:
ARCADIS U.S., Inc.
801 Corporate Center Drive
Suite 300
Raleigh, North Carolina 27607-5073

Attn: Mr. Jim Shilliday

Authorized for release by:
12/14/2015 11:46:05 PM
Bernard Kirkland, Manager of Project Management
(912)354-7858 e.3238
bernard.kirkland@testamericainc.com

Designee for

Jerry Lanier, Project Manager I
(912)354-7858 e.3410
jerry.lanier@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 680-119707-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Brenntag Durham Annual GW Monitoring

Report Number: 680-119707-1

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 the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 12/04/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.4 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples MWW-46I (680-119707-1), MWW-48 (680-119707-2), MWW-47I (680-119707-3), MWW-57I (680-119707-4), MWW-49D (680-119707-5), MWW-52 (680-119707-6), MWW-50D (680-119707-7), RW-2 (680-119707-8), MWW-53 (680-119707-9), MWW-38 (680-119707-10), MWW-33 (680-119707-11), Dup-01 (680-119707-12), MWW-37 (680-119707-13), MWW-15D (680-119707-14), MWW-45 (680-119707-15), MWW-51D (680-119707-16), MWW-34 (680-119707-17) and MWW-43 (680-119707-18) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 12/08/2015, 12/09/2015 and 12/14/2015.

Naphthalene failed the recovery criteria high for LCSD 680-414262/5. Refer to the QC report for details.

Samples MWW-53 (680-119707-9)[5X], MWW-33 (680-119707-11)[200X], Dup-01 (680-119707-12)[200X], MWW-37 (680-119707-13)[2X], MWW-15D (680-119707-14)[10X] and MWW-45 (680-119707-15)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-413474.

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-119707-1	MWW-46I	Water	12/01/15 13:00	12/04/15 09:09
680-119707-2	MWW-48	Water	12/01/15 15:56	12/04/15 09:09
680-119707-3	MWW-47I	Water	12/01/15 11:47	12/04/15 09:09
680-119707-4	MWW-57I	Water	12/01/15 14:42	12/04/15 09:09
680-119707-5	MWW-49D	Water	12/01/15 12:25	12/04/15 09:09
680-119707-6	MWW-52	Water	12/01/15 16:20	12/04/15 09:09
680-119707-7	MWW-50D	Water	12/02/15 11:15	12/04/15 09:09
680-119707-8	RW-2	Water	12/02/15 14:30	12/04/15 09:09
680-119707-9	MWW-53	Water	12/02/15 10:52	12/04/15 09:09
680-119707-10	MWW-38	Water	12/02/15 12:15	12/04/15 09:09
680-119707-11	MWW-33	Water	12/02/15 16:15	12/04/15 09:09
680-119707-12	Dup-01	Water	12/02/15 00:00	12/04/15 09:09
680-119707-13	MWW-37	Water	12/02/15 15:50	12/04/15 09:09
680-119707-14	MWW-15D	Water	12/03/15 09:30	12/04/15 09:09
680-119707-15	MWW-45	Water	12/03/15 10:12	12/04/15 09:09
680-119707-16	MWW-51D	Water	12/03/15 12:00	12/04/15 09:09
680-119707-17	MWW-34	Water	12/03/15 13:24	12/04/15 09:09
680-119707-18	MWW-43	Water	12/03/15 14:35	12/04/15 09:09

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV

Protocol References:

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

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD is outside acceptance limits.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-46I — Lab Sample ID: 680-119707-1

No Detections.

Client Sample ID: MWW-48 — Lab Sample ID: 680-119707-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	6.0		1.0		ug/L	1		8260B	Total/NA
1,1-Dichloroethene	6.0		1.0		ug/L	1		8260B	Total/NA
1,2-Dichloroethene, Total	11		2.0		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	11		1.0		ug/L	1		8260B	Total/NA
Tetrachloroethene	38		1.0		ug/L	1		8260B	Total/NA
Trichloroethene	7.9		1.0		ug/L	1		8260B	Total/NA
Vinyl chloride	1.8		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: MWW-47I — Lab Sample ID: 680-119707-3

No Detections.

Client Sample ID: MWW-57I — Lab Sample ID: 680-119707-4

No Detections.

Client Sample ID: MWW-49D — Lab Sample ID: 680-119707-5

No Detections.

Client Sample ID: MWW-52 — Lab Sample ID: 680-119707-6

No Detections.

Client Sample ID: MWW-50D — Lab Sample ID: 680-119707-7

No Detections.

Client Sample ID: RW-2 — Lab Sample ID: 680-119707-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	9.5		1.0		ug/L	1		8260B	Total/NA
1,1-Dichloroethene	6.6		1.0		ug/L	1		8260B	Total/NA
1,2-Dichloroethene, Total	120		2.0		ug/L	1		8260B	Total/NA
Chloroform	1.6		1.0		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	120		1.0		ug/L	1		8260B	Total/NA
Tetrachloroethene	59		1.0		ug/L	1		8260B	Total/NA
Trichloroethene	110		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: MWW-53 — Lab Sample ID: 680-119707-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	24		5.0		ug/L	5		8260B	Total/NA
1,1-Dichloroethene	100		5.0		ug/L	5		8260B	Total/NA
1,2-Dichloroethene, Total	190		10		ug/L	5		8260B	Total/NA
Chloroform	21		5.0		ug/L	5		8260B	Total/NA
cis-1,2-Dichloroethene	190		5.0		ug/L	5		8260B	Total/NA
Tetrachloroethene	450		5.0		ug/L	5		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-53 (Continued) — Lab Sample ID: 680-119707-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	380		5.0		ug/L	5		8260B	Total/NA

Client Sample ID: MWW-38 — Lab Sample ID: 680-119707-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloropropane	1.2		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: MWW-33 — Lab Sample ID: 680-119707-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethene, Total	2900		400		ug/L	200		8260B	Total/NA
Chloroform	260		200		ug/L	200		8260B	Total/NA
cis-1,2-Dichloroethene	2900		200		ug/L	200		8260B	Total/NA
Tetrachloroethene	17000		200		ug/L	200		8260B	Total/NA
Trichloroethene	28000		200		ug/L	200		8260B	Total/NA
Vinyl chloride	380		200		ug/L	200		8260B	Total/NA

Client Sample ID: Dup-01 — Lab Sample ID: 680-119707-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethene, Total	3000		400		ug/L	200		8260B	Total/NA
Chloroform	270		200		ug/L	200		8260B	Total/NA
cis-1,2-Dichloroethene	3000		200		ug/L	200		8260B	Total/NA
Tetrachloroethene	18000		200		ug/L	200		8260B	Total/NA
Trichloroethene	30000		200		ug/L	200		8260B	Total/NA
Vinyl chloride	400		200		ug/L	200		8260B	Total/NA

Client Sample ID: MWW-37 — Lab Sample ID: 680-119707-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	19		2.0		ug/L	2		8260B	Total/NA
1,1-Dichloroethene	43		2.0		ug/L	2		8260B	Total/NA
1,2-Dichloroethene, Total	150		4.0		ug/L	2		8260B	Total/NA
Chloroform	3.4		2.0		ug/L	2		8260B	Total/NA
cis-1,2-Dichloroethene	150		2.0		ug/L	2		8260B	Total/NA
Tetrachloroethene	210		2.0		ug/L	2		8260B	Total/NA
Trichloroethene	210		2.0		ug/L	2		8260B	Total/NA
Vinyl chloride	6.0		2.0		ug/L	2		8260B	Total/NA

Client Sample ID: MWW-15D — Lab Sample ID: 680-119707-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	33		10		ug/L	10		8260B	Total/NA
1,1-Dichloroethene	59		10		ug/L	10		8260B	Total/NA
1,2-Dichloroethene, Total	520		20		ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	490		10		ug/L	10		8260B	Total/NA
Tetrachloroethene	260		10		ug/L	10		8260B	Total/NA
trans-1,2-Dichloroethene	28		10		ug/L	10		8260B	Total/NA
Trichloroethene	350		10		ug/L	10		8260B	Total/NA
Vinyl chloride	55		10		ug/L	10		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-45 — Lab Sample ID: 680-119707-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	10		5.0		ug/L	5		8260B	Total/NA
1,2-Dichloroethene, Total	640		10		ug/L	5		8260B	Total/NA
cis-1,2-Dichloroethene	600		5.0		ug/L	5		8260B	Total/NA
trans-1,2-Dichloroethene	38		5.0		ug/L	5		8260B	Total/NA
Trichloroethene	59		5.0		ug/L	5		8260B	Total/NA
Vinyl chloride	39		5.0		ug/L	5		8260B	Total/NA

Client Sample ID: MWW-51D — Lab Sample ID: 680-119707-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.0		1.0		ug/L	1		8260B	Total/NA
m-Xylene & p-Xylene	1.5		1.0		ug/L	1		8260B	Total/NA
Naphthalene	90		5.0		ug/L	1		8260B	Total/NA
N-Propylbenzene	1.2		1.0		ug/L	1		8260B	Total/NA
o-Xylene	1.1		1.0		ug/L	1		8260B	Total/NA
Xylenes, Total	2.6		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: MWW-34 — Lab Sample ID: 680-119707-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	19		5.0		ug/L	1		8260B	Total/NA
Tetrachloroethene	26		1.0		ug/L	1		8260B	Total/NA
Trichloroethene	2.0		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: MWW-43 — Lab Sample ID: 680-119707-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	6.5		5.0		ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-46I

Date Collected: 12/01/15 13:00
Date Received: 12/04/15 09:09

Lab Sample ID: 680-119707-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 16:51	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 16:51	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/08/15 16:51	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/08/15 16:51	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 16:51	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 16:51	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 16:51	1
2-Hexanone	10	U	10		ug/L			12/08/15 16:51	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 16:51	1
Acetone	10	U	10		ug/L			12/08/15 16:51	1
Benzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
Bromobenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
Bromochloromethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
Bromoform	1.0	U	1.0		ug/L			12/08/15 16:51	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
Bromomethane	5.0	U	5.0		ug/L			12/08/15 16:51	1
Carbon disulfide	2.0	U	2.0		ug/L			12/08/15 16:51	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/08/15 16:51	1
Chlorobenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
Chloroethane	5.0	U	5.0		ug/L			12/08/15 16:51	1
Chloroform	1.0	U	1.0		ug/L			12/08/15 16:51	1
Chloromethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 16:51	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 16:51	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
Dibromomethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
Ethylbenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/08/15 16:51	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/08/15 16:51	1
Methyl tert-butyl ether	10	U	10		ug/L			12/08/15 16:51	1
Methylene Chloride	5.0	U	5.0		ug/L			12/08/15 16:51	1
Naphthalene	5.0	U	5.0		ug/L			12/08/15 16:51	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-46I

Lab Sample ID: 680-119707-1

Date Collected: 12/01/15 13:00

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	10	U	10		ug/L			12/08/15 16:51	1
2-Butanone	10	U	10		ug/L			12/08/15 16:51	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
o-Xylene	1.0	U	1.0		ug/L			12/08/15 16:51	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/08/15 16:51	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
Styrene	1.0	U	1.0		ug/L			12/08/15 16:51	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 16:51	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/08/15 16:51	1
Toluene	1.0	U	1.0		ug/L			12/08/15 16:51	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 16:51	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 16:51	1
Trichloroethene	1.0	U	1.0		ug/L			12/08/15 16:51	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/08/15 16:51	1
Vinyl acetate	2.0	U	2.0		ug/L			12/08/15 16:51	1
Vinyl chloride	1.0	U	1.0		ug/L			12/08/15 16:51	1
Xylenes, Total	1.0	U	1.0		ug/L			12/08/15 16:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*70 - 130*		*12/08/15 16:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*		*12/08/15 16:51*	*1*
Dibromofluoromethane (Surr)	*97*		*70 - 130*		*12/08/15 16:51*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*12/08/15 16:51*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-48

Date Collected: 12/01/15 15:56
Date Received: 12/04/15 09:09

Lab Sample ID: 680-119707-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,1-Dichloroethane	**6.0**		1.0		ug/L			12/08/15 17:13	1
1,1-Dichloroethene	**6.0**		1.0		ug/L			12/08/15 17:13	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 17:13	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 17:13	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/08/15 17:13	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,2-Dichloroethene, Total	**11**		2.0		ug/L			12/08/15 17:13	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 17:13	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 17:13	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 17:13	1
2-Hexanone	10	U	10		ug/L			12/08/15 17:13	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 17:13	1
Acetone	10	U	10		ug/L			12/08/15 17:13	1
Benzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
Bromobenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
Bromochloromethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
Bromoform	1.0	U	1.0		ug/L			12/08/15 17:13	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
Bromomethane	5.0	U	5.0		ug/L			12/08/15 17:13	1
Carbon disulfide	2.0	U	2.0		ug/L			12/08/15 17:13	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/08/15 17:13	1
Chlorobenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
Chloroethane	5.0	U	5.0		ug/L			12/08/15 17:13	1
Chloroform	1.0	U	1.0		ug/L			12/08/15 17:13	1
Chloromethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
cis-1,2-Dichloroethene	**11**		1.0		ug/L			12/08/15 17:13	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 17:13	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
Dibromomethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
Ethylbenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/08/15 17:13	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/08/15 17:13	1
Methyl tert-butyl ether	10	U	10		ug/L			12/08/15 17:13	1
Methylene Chloride	5.0	U	5.0		ug/L			12/08/15 17:13	1
Naphthalene	5.0	U	5.0		ug/L			12/08/15 17:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-48

Date Collected: 12/01/15 15:56
Date Received: 12/04/15 09:09

Lab Sample ID: 680-119707-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	10	U	10		ug/L			12/08/15 17:13	1
2-Butanone	10	U	10		ug/L			12/08/15 17:13	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
o-Xylene	1.0	U	1.0		ug/L			12/08/15 17:13	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/08/15 17:13	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
Styrene	1.0	U	1.0		ug/L			12/08/15 17:13	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 17:13	1
Tetrachloroethene	**38**		1.0		ug/L			12/08/15 17:13	1
Toluene	1.0	U	1.0		ug/L			12/08/15 17:13	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 17:13	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 17:13	1
Trichloroethene	**7.9**		1.0		ug/L			12/08/15 17:13	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/08/15 17:13	1
Vinyl acetate	2.0	U	2.0		ug/L			12/08/15 17:13	1
Vinyl chloride	**1.8**		1.0		ug/L			12/08/15 17:13	1
Xylenes, Total	1.0	U	1.0		ug/L			12/08/15 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*		*12/08/15 17:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*		*12/08/15 17:13*	*1*
Dibromofluoromethane (Surr)	*96*		*70 - 130*		*12/08/15 17:13*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*12/08/15 17:13*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-47I

Lab Sample ID: 680-119707-3

Date Collected: 12/01/15 11:47
Date Received: 12/04/15 09:09

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 17:36	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 17:36	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/08/15 17:36	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/08/15 17:36	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 17:36	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 17:36	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 17:36	1
2-Hexanone	10	U	10		ug/L			12/08/15 17:36	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 17:36	1
Acetone	10	U	10		ug/L			12/08/15 17:36	1
Benzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
Bromobenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
Bromochloromethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
Bromoform	1.0	U	1.0		ug/L			12/08/15 17:36	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
Bromomethane	5.0	U	5.0		ug/L			12/08/15 17:36	1
Carbon disulfide	2.0	U	2.0		ug/L			12/08/15 17:36	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/08/15 17:36	1
Chlorobenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
Chloroethane	5.0	U	5.0		ug/L			12/08/15 17:36	1
Chloroform	1.0	U	1.0		ug/L			12/08/15 17:36	1
Chloromethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 17:36	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 17:36	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
Dibromomethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
Ethylbenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/08/15 17:36	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/08/15 17:36	1
Methyl tert-butyl ether	10	U	10		ug/L			12/08/15 17:36	1
Methylene Chloride	5.0	U	5.0		ug/L			12/08/15 17:36	1
Naphthalene	5.0	U	5.0		ug/L			12/08/15 17:36	1

Client Sample ID: MWW-47I

Lab Sample ID: 680-119707-3

Date Collected: 12/01/15 11:47

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	10	U	10		ug/L			12/08/15 17:36	1
2-Butanone	10	U	10		ug/L			12/08/15 17:36	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
o-Xylene	1.0	U	1.0		ug/L			12/08/15 17:36	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/08/15 17:36	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
Styrene	1.0	U	1.0		ug/L			12/08/15 17:36	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 17:36	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/08/15 17:36	1
Toluene	1.0	U	1.0		ug/L			12/08/15 17:36	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 17:36	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 17:36	1
Trichloroethene	1.0	U	1.0		ug/L			12/08/15 17:36	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/08/15 17:36	1
Vinyl acetate	2.0	U	2.0		ug/L			12/08/15 17:36	1
Vinyl chloride	1.0	U	1.0		ug/L			12/08/15 17:36	1
Xylenes, Total	1.0	U	1.0		ug/L			12/08/15 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*70 - 130*		*12/08/15 17:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*		*12/08/15 17:36*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*12/08/15 17:36*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*12/08/15 17:36*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-57I

Date Collected: 12/01/15 14:42
Date Received: 12/04/15 09:09

Lab Sample ID: 680-119707-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 17:59	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 17:59	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/08/15 17:59	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/08/15 17:59	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 17:59	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 17:59	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 17:59	1
2-Hexanone	10	U	10		ug/L			12/08/15 17:59	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 17:59	1
Acetone	10	U	10		ug/L			12/08/15 17:59	1
Benzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
Bromobenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
Bromochloromethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
Bromoform	1.0	U	1.0		ug/L			12/08/15 17:59	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
Bromomethane	5.0	U	5.0		ug/L			12/08/15 17:59	1
Carbon disulfide	2.0	U	2.0		ug/L			12/08/15 17:59	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/08/15 17:59	1
Chlorobenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
Chloroethane	5.0	U	5.0		ug/L			12/08/15 17:59	1
Chloroform	1.0	U	1.0		ug/L			12/08/15 17:59	1
Chloromethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 17:59	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 17:59	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
Dibromomethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
Ethylbenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/08/15 17:59	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/08/15 17:59	1
Methyl tert-butyl ether	10	U	10		ug/L			12/08/15 17:59	1
Methylene Chloride	5.0	U	5.0		ug/L			12/08/15 17:59	1
Naphthalene	5.0	U	5.0		ug/L			12/08/15 17:59	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-57I

Lab Sample ID: 680-119707-4

Date Collected: 12/01/15 14:42

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	10	U	10		ug/L			12/08/15 17:59	1
2-Butanone	10	U	10		ug/L			12/08/15 17:59	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
o-Xylene	1.0	U	1.0		ug/L			12/08/15 17:59	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/08/15 17:59	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
Styrene	1.0	U	1.0		ug/L			12/08/15 17:59	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 17:59	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/08/15 17:59	1
Toluene	1.0	U	1.0		ug/L			12/08/15 17:59	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 17:59	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 17:59	1
Trichloroethene	1.0	U	1.0		ug/L			12/08/15 17:59	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/08/15 17:59	1
Vinyl acetate	2.0	U	2.0		ug/L			12/08/15 17:59	1
Vinyl chloride	1.0	U	1.0		ug/L			12/08/15 17:59	1
Xylenes, Total	1.0	U	1.0		ug/L			12/08/15 17:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*		*12/08/15 17:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 130*		*12/08/15 17:59*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 130*		*12/08/15 17:59*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*12/08/15 17:59*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-49D

Lab Sample ID: 680-119707-5

Date Collected: 12/01/15 12:25
Date Received: 12/04/15 09:09

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 18:22	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 18:22	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/08/15 18:22	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/08/15 18:22	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 18:22	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 18:22	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 18:22	1
2-Hexanone	10	U	10		ug/L			12/08/15 18:22	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 18:22	1
Acetone	10	U	10		ug/L			12/08/15 18:22	1
Benzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
Bromobenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
Bromochloromethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
Bromoform	1.0	U	1.0		ug/L			12/08/15 18:22	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
Bromomethane	5.0	U	5.0		ug/L			12/08/15 18:22	1
Carbon disulfide	2.0	U	2.0		ug/L			12/08/15 18:22	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/08/15 18:22	1
Chlorobenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
Chloroethane	5.0	U	5.0		ug/L			12/08/15 18:22	1
Chloroform	1.0	U	1.0		ug/L			12/08/15 18:22	1
Chloromethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 18:22	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 18:22	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
Dibromomethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
Ethylbenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/08/15 18:22	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/08/15 18:22	1
Methyl tert-butyl ether	10	U	10		ug/L			12/08/15 18:22	1
Methylene Chloride	5.0	U	5.0		ug/L			12/08/15 18:22	1
Naphthalene	5.0	U	5.0		ug/L			12/08/15 18:22	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-49D

Lab Sample ID: 680-119707-5

Date Collected: 12/01/15 12:25
Date Received: 12/04/15 09:09

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	10	U	10		ug/L			12/08/15 18:22	1
2-Butanone	10	U	10		ug/L			12/08/15 18:22	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
o-Xylene	1.0	U	1.0		ug/L			12/08/15 18:22	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/08/15 18:22	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
Styrene	1.0	U	1.0		ug/L			12/08/15 18:22	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 18:22	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/08/15 18:22	1
Toluene	1.0	U	1.0		ug/L			12/08/15 18:22	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 18:22	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 18:22	1
Trichloroethene	1.0	U	1.0		ug/L			12/08/15 18:22	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/08/15 18:22	1
Vinyl acetate	2.0	U	2.0		ug/L			12/08/15 18:22	1
Vinyl chloride	1.0	U	1.0		ug/L			12/08/15 18:22	1
Xylenes, Total	1.0	U	1.0		ug/L			12/08/15 18:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*		*12/08/15 18:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*		*12/08/15 18:22*	*1*
Dibromofluoromethane (Surr)	*95*		*70 - 130*		*12/08/15 18:22*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*12/08/15 18:22*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-52

Date Collected: 12/01/15 16:20
Date Received: 12/04/15 09:09

Lab Sample ID: 680-119707-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 18:45	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 18:45	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/08/15 18:45	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/08/15 18:45	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 18:45	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 18:45	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 18:45	1
2-Hexanone	10	U	10		ug/L			12/08/15 18:45	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 18:45	1
Acetone	10	U	10		ug/L			12/08/15 18:45	1
Benzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
Bromobenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
Bromochloromethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
Bromoform	1.0	U	1.0		ug/L			12/08/15 18:45	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
Bromomethane	5.0	U	5.0		ug/L			12/08/15 18:45	1
Carbon disulfide	2.0	U	2.0		ug/L			12/08/15 18:45	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/08/15 18:45	1
Chlorobenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
Chloroethane	5.0	U	5.0		ug/L			12/08/15 18:45	1
Chloroform	1.0	U	1.0		ug/L			12/08/15 18:45	1
Chloromethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 18:45	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 18:45	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
Dibromomethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
Ethylbenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/08/15 18:45	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/08/15 18:45	1
Methyl tert-butyl ether	10	U	10		ug/L			12/08/15 18:45	1
Methylene Chloride	5.0	U	5.0		ug/L			12/08/15 18:45	1
Naphthalene	5.0	U	5.0		ug/L			12/08/15 18:45	1

Client Sample ID: MWW-52

Lab Sample ID: 680-119707-6

Date Collected: 12/01/15 16:20

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	10	U	10		ug/L			12/08/15 18:45	1
2-Butanone	10	U	10		ug/L			12/08/15 18:45	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
o-Xylene	1.0	U	1.0		ug/L			12/08/15 18:45	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/08/15 18:45	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
Styrene	1.0	U	1.0		ug/L			12/08/15 18:45	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 18:45	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/08/15 18:45	1
Toluene	1.0	U	1.0		ug/L			12/08/15 18:45	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 18:45	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 18:45	1
Trichloroethene	1.0	U	1.0		ug/L			12/08/15 18:45	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/08/15 18:45	1
Vinyl acetate	2.0	U	2.0		ug/L			12/08/15 18:45	1
Vinyl chloride	1.0	U	1.0		ug/L			12/08/15 18:45	1
Xylenes, Total	1.0	U	1.0		ug/L			12/08/15 18:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*70 - 130*		*12/08/15 18:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*		*12/08/15 18:45*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 130*		*12/08/15 18:45*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*12/08/15 18:45*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-50D

Date Collected: 12/02/15 11:15
Date Received: 12/04/15 09:09

Lab Sample ID: 680-119707-7

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/14/15 14:56	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/14/15 14:56	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/14/15 14:56	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/14/15 14:56	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/14/15 14:56	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/14/15 14:56	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/14/15 14:56	1
2-Hexanone	10	U	10		ug/L			12/14/15 14:56	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/14/15 14:56	1
Acetone	10	U	10		ug/L			12/14/15 14:56	1
Benzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
Bromobenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
Bromochloromethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
Bromoform	1.0	U	1.0		ug/L			12/14/15 14:56	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
Bromomethane	5.0	U	5.0		ug/L			12/14/15 14:56	1
Carbon disulfide	2.0	U	2.0		ug/L			12/14/15 14:56	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/14/15 14:56	1
Chlorobenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
Chloroethane	5.0	U	5.0		ug/L			12/14/15 14:56	1
Chloroform	1.0	U	1.0		ug/L			12/14/15 14:56	1
Chloromethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/14/15 14:56	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/14/15 14:56	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
Dibromomethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
Ethylbenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/14/15 14:56	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/14/15 14:56	1
Methyl tert-butyl ether	10	U	10		ug/L			12/14/15 14:56	1
Methylene Chloride	5.0	U	5.0		ug/L			12/14/15 14:56	1
Naphthalene	5.0	U *	5.0		ug/L			12/14/15 14:56	1

Client Sample ID: MWW-50D

Lab Sample ID: 680-119707-7

Date Collected: 12/02/15 11:15

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	10	U	10		ug/L			12/14/15 14:56	1
2-Butanone	10	U	10		ug/L			12/14/15 14:56	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
o-Xylene	1.0	U	1.0		ug/L			12/14/15 14:56	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/14/15 14:56	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
Styrene	1.0	U	1.0		ug/L			12/14/15 14:56	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/14/15 14:56	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/14/15 14:56	1
Toluene	1.0	U	1.0		ug/L			12/14/15 14:56	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/14/15 14:56	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/14/15 14:56	1
Trichloroethene	1.0	U	1.0		ug/L			12/14/15 14:56	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/14/15 14:56	1
Vinyl acetate	2.0	U	2.0		ug/L			12/14/15 14:56	1
Vinyl chloride	1.0	U	1.0		ug/L			12/14/15 14:56	1
Xylenes, Total	1.0	U	1.0		ug/L			12/14/15 14:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*107*		*70 - 130*		*12/14/15 14:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*		*12/14/15 14:56*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*		*12/14/15 14:56*	*1*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*		*12/14/15 14:56*	*1*

Client Sample ID: RW-2

Lab Sample ID: 680-119707-8

Date Collected: 12/02/15 14:30

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,1-Dichloroethane	**9.5**		1.0		ug/L			12/14/15 15:17	1
1,1-Dichloroethene	**6.6**		1.0		ug/L			12/14/15 15:17	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/14/15 15:17	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/14/15 15:17	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/14/15 15:17	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,2-Dichloroethene, Total	**120**		2.0		ug/L			12/14/15 15:17	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/14/15 15:17	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/14/15 15:17	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/14/15 15:17	1
2-Hexanone	10	U	10		ug/L			12/14/15 15:17	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/14/15 15:17	1
Acetone	10	U	10		ug/L			12/14/15 15:17	1
Benzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
Bromobenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
Bromochloromethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
Bromoform	1.0	U	1.0		ug/L			12/14/15 15:17	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
Bromomethane	5.0	U	5.0		ug/L			12/14/15 15:17	1
Carbon disulfide	2.0	U	2.0		ug/L			12/14/15 15:17	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/14/15 15:17	1
Chlorobenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
Chloroethane	5.0	U	5.0		ug/L			12/14/15 15:17	1
Chloroform	**1.6**		1.0		ug/L			12/14/15 15:17	1
Chloromethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
cis-1,2-Dichloroethene	**120**		1.0		ug/L			12/14/15 15:17	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/14/15 15:17	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
Dibromomethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
Ethylbenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/14/15 15:17	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/14/15 15:17	1
Methyl tert-butyl ether	10	U	10		ug/L			12/14/15 15:17	1
Methylene Chloride	5.0	U	5.0		ug/L			12/14/15 15:17	1
Naphthalene	5.0	U *	5.0		ug/L			12/14/15 15:17	1

Client Sample ID: RW-2

Lab Sample ID: 680-119707-8

Date Collected: 12/02/15 14:30

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	10	U	10		ug/L			12/14/15 15:17	1
2-Butanone	10	U	10		ug/L			12/14/15 15:17	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
o-Xylene	1.0	U	1.0		ug/L			12/14/15 15:17	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/14/15 15:17	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
Styrene	1.0	U	1.0		ug/L			12/14/15 15:17	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/14/15 15:17	1
Tetrachloroethene	**59**		1.0		ug/L			12/14/15 15:17	1
Toluene	1.0	U	1.0		ug/L			12/14/15 15:17	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/14/15 15:17	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/14/15 15:17	1
Trichloroethene	**110**		1.0		ug/L			12/14/15 15:17	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/14/15 15:17	1
Vinyl acetate	2.0	U	2.0		ug/L			12/14/15 15:17	1
Vinyl chloride	1.0	U	1.0		ug/L			12/14/15 15:17	1
Xylenes, Total	1.0	U	1.0		ug/L			12/14/15 15:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*70 - 130*		*12/14/15 15:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*		*12/14/15 15:17*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*12/14/15 15:17*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*12/14/15 15:17*	*1*

Client Sample ID: MWW-53

Lab Sample ID: 680-119707-9

Date Collected: 12/02/15 10:52

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,1,1-Trichloroethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,1,2,2-Tetrachloroethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,1,2-Trichloroethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,1-Dichloroethane	**24**		5.0		ug/L			12/08/15 13:16	5
1,1-Dichloroethene	**100**		5.0		ug/L			12/08/15 13:16	5
1,1-Dichloropropene	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,2,3-Trichlorobenzene	25	U	25		ug/L			12/08/15 13:16	5
1,2,3-Trichloropropane	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,2,4-Trichlorobenzene	25	U	25		ug/L			12/08/15 13:16	5
1,2,4-Trimethylbenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,2-Dibromo-3-Chloropropane	25	U	25		ug/L			12/08/15 13:16	5
1,2-Dichlorobenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,2-Dichloroethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,2-Dichloroethene, Total	**190**		10		ug/L			12/08/15 13:16	5
1,2-Dichloropropane	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,3,5-Trimethylbenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,3-Dichlorobenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,3-Dichloropropane	5.0	U	5.0		ug/L			12/08/15 13:16	5
1,4-Dichlorobenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
2,2-Dichloropropane	5.0	U	5.0		ug/L			12/08/15 13:16	5
2-Chlorotoluene	5.0	U	5.0		ug/L			12/08/15 13:16	5
2-Hexanone	50	U	50		ug/L			12/08/15 13:16	5
4-Chlorotoluene	5.0	U	5.0		ug/L			12/08/15 13:16	5
Acetone	50	U	50		ug/L			12/08/15 13:16	5
Benzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
Bromobenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
Bromochloromethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
Bromoform	5.0	U	5.0		ug/L			12/08/15 13:16	5
Bromodichloromethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
Bromomethane	25	U	25		ug/L			12/08/15 13:16	5
Carbon disulfide	10	U	10		ug/L			12/08/15 13:16	5
Carbon tetrachloride	5.0	U	5.0		ug/L			12/08/15 13:16	5
Chlorobenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
Chloroethane	25	U	25		ug/L			12/08/15 13:16	5
Chloroform	**21**		5.0		ug/L			12/08/15 13:16	5
Chloromethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
cis-1,2-Dichloroethene	**190**		5.0		ug/L			12/08/15 13:16	5
cis-1,3-Dichloropropene	5.0	U	5.0		ug/L			12/08/15 13:16	5
Dibromochloromethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
Dibromomethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
Dichlorodifluoromethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
Ethylbenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
Hexachlorobutadiene	25	U	25		ug/L			12/08/15 13:16	5
Isopropylbenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
m-Xylene & p-Xylene	5.0	U	5.0		ug/L			12/08/15 13:16	5
Methyl tert-butyl ether	50	U	50		ug/L			12/08/15 13:16	5
Methylene Chloride	25	U	25		ug/L			12/08/15 13:16	5
Naphthalene	25	U	25		ug/L			12/08/15 13:16	5

Client Sample ID: MWW-53

Lab Sample ID: 680-119707-9

Date Collected: 12/02/15 10:52

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	50	U	50		ug/L			12/08/15 13:16	5
2-Butanone	50	U	50		ug/L			12/08/15 13:16	5
1,2-Dibromoethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
n-Butylbenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
N-Propylbenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
o-Xylene	5.0	U	5.0		ug/L			12/08/15 13:16	5
p-Isopropyltoluene	5.0	U	5.0		ug/L			12/08/15 13:16	5
sec-Butylbenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
Styrene	5.0	U	5.0		ug/L			12/08/15 13:16	5
tert-Butylbenzene	5.0	U	5.0		ug/L			12/08/15 13:16	5
Tetrachloroethene	**450**		5.0		ug/L			12/08/15 13:16	5
Toluene	5.0	U	5.0		ug/L			12/08/15 13:16	5
trans-1,2-Dichloroethene	5.0	U	5.0		ug/L			12/08/15 13:16	5
trans-1,3-Dichloropropene	5.0	U	5.0		ug/L			12/08/15 13:16	5
Trichloroethene	**380**		5.0		ug/L			12/08/15 13:16	5
Trichlorofluoromethane	5.0	U	5.0		ug/L			12/08/15 13:16	5
Vinyl acetate	10	U	10		ug/L			12/08/15 13:16	5
Vinyl chloride	5.0	U	5.0		ug/L			12/08/15 13:16	5
Xylenes, Total	5.0	U	5.0		ug/L			12/08/15 13:16	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*		*12/08/15 13:16*	*5*
1,2-Dichloroethane-d4 (Surr)	*118*		*70 - 130*		*12/08/15 13:16*	*5*
Dibromofluoromethane (Surr)	*114*		*70 - 130*		*12/08/15 13:16*	*5*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*12/08/15 13:16*	*5*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-38

Date Collected: 12/02/15 12:15
Date Received: 12/04/15 09:09

Lab Sample ID: 680-119707-10

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 14:42	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 14:42	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/08/15 14:42	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/08/15 14:42	1
1,2-Dichloropropane	**1.2**		1.0		ug/L			12/08/15 14:42	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 14:42	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 14:42	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 14:42	1
2-Hexanone	10	U	10		ug/L			12/08/15 14:42	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 14:42	1
Acetone	10	U	10		ug/L			12/08/15 14:42	1
Benzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
Bromobenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
Bromochloromethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
Bromoform	1.0	U	1.0		ug/L			12/08/15 14:42	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
Bromomethane	5.0	U	5.0		ug/L			12/08/15 14:42	1
Carbon disulfide	2.0	U	2.0		ug/L			12/08/15 14:42	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/08/15 14:42	1
Chlorobenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
Chloroethane	5.0	U	5.0		ug/L			12/08/15 14:42	1
Chloroform	1.0	U	1.0		ug/L			12/08/15 14:42	1
Chloromethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 14:42	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 14:42	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
Dibromomethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
Ethylbenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/08/15 14:42	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/08/15 14:42	1
Methyl tert-butyl ether	10	U	10		ug/L			12/08/15 14:42	1
Methylene Chloride	5.0	U	5.0		ug/L			12/08/15 14:42	1
Naphthalene	5.0	U	5.0		ug/L			12/08/15 14:42	1

Client Sample ID: MWW-38

Lab Sample ID: 680-119707-10

Date Collected: 12/02/15 12:15

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	10	U	10		ug/L			12/08/15 14:42	1
2-Butanone	10	U	10		ug/L			12/08/15 14:42	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
o-Xylene	1.0	U	1.0		ug/L			12/08/15 14:42	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/08/15 14:42	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
Styrene	1.0	U	1.0		ug/L			12/08/15 14:42	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 14:42	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/08/15 14:42	1
Toluene	1.0	U	1.0		ug/L			12/08/15 14:42	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 14:42	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 14:42	1
Trichloroethene	1.0	U	1.0		ug/L			12/08/15 14:42	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/08/15 14:42	1
Vinyl acetate	2.0	U	2.0		ug/L			12/08/15 14:42	1
Vinyl chloride	1.0	U	1.0		ug/L			12/08/15 14:42	1
Xylenes, Total	1.0	U	1.0		ug/L			12/08/15 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*70 - 130*		*12/08/15 14:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*		*12/08/15 14:42*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 130*		*12/08/15 14:42*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*12/08/15 14:42*	*1*

Client Sample ID: MWW-33

Lab Sample ID: 680-119707-11

Date Collected: 12/02/15 16:15

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	200	U	200		ug/L			12/08/15 13:37	200
1,1,1-Trichloroethane	200	U	200		ug/L			12/08/15 13:37	200
1,1,2,2-Tetrachloroethane	200	U	200		ug/L			12/08/15 13:37	200
1,1,2-Trichloroethane	200	U	200		ug/L			12/08/15 13:37	200
1,1-Dichloroethane	200	U	200		ug/L			12/08/15 13:37	200
1,1-Dichloroethene	200	U	200		ug/L			12/08/15 13:37	200
1,1-Dichloropropene	200	U	200		ug/L			12/08/15 13:37	200
1,2,3-Trichlorobenzene	1000	U	1000		ug/L			12/08/15 13:37	200
1,2,3-Trichloropropane	200	U	200		ug/L			12/08/15 13:37	200
1,2,4-Trichlorobenzene	1000	U	1000		ug/L			12/08/15 13:37	200
1,2,4-Trimethylbenzene	200	U	200		ug/L			12/08/15 13:37	200
1,2-Dibromo-3-Chloropropane	1000	U	1000		ug/L			12/08/15 13:37	200
1,2-Dichlorobenzene	200	U	200		ug/L			12/08/15 13:37	200
1,2-Dichloroethane	200	U	200		ug/L			12/08/15 13:37	200
1,2-Dichloroethene, Total	**2900**		400		ug/L			12/08/15 13:37	200
1,2-Dichloropropane	200	U	200		ug/L			12/08/15 13:37	200
1,3,5-Trimethylbenzene	200	U	200		ug/L			12/08/15 13:37	200
1,3-Dichlorobenzene	200	U	200		ug/L			12/08/15 13:37	200
1,3-Dichloropropane	200	U	200		ug/L			12/08/15 13:37	200
1,4-Dichlorobenzene	200	U	200		ug/L			12/08/15 13:37	200
2,2-Dichloropropane	200	U	200		ug/L			12/08/15 13:37	200
2-Chlorotoluene	200	U	200		ug/L			12/08/15 13:37	200
2-Hexanone	2000	U	2000		ug/L			12/08/15 13:37	200
4-Chlorotoluene	200	U	200		ug/L			12/08/15 13:37	200
Acetone	2000	U	2000		ug/L			12/08/15 13:37	200
Benzene	200	U	200		ug/L			12/08/15 13:37	200
Bromobenzene	200	U	200		ug/L			12/08/15 13:37	200
Bromochloromethane	200	U	200		ug/L			12/08/15 13:37	200
Bromoform	200	U	200		ug/L			12/08/15 13:37	200
Bromodichloromethane	200	U	200		ug/L			12/08/15 13:37	200
Bromomethane	1000	U	1000		ug/L			12/08/15 13:37	200
Carbon disulfide	400	U	400		ug/L			12/08/15 13:37	200
Carbon tetrachloride	200	U	200		ug/L			12/08/15 13:37	200
Chlorobenzene	200	U	200		ug/L			12/08/15 13:37	200
Chloroethane	1000	U	1000		ug/L			12/08/15 13:37	200
Chloroform	**260**		200		ug/L			12/08/15 13:37	200
Chloromethane	200	U	200		ug/L			12/08/15 13:37	200
cis-1,2-Dichloroethene	**2900**		200		ug/L			12/08/15 13:37	200
cis-1,3-Dichloropropene	200	U	200		ug/L			12/08/15 13:37	200
Dibromochloromethane	200	U	200		ug/L			12/08/15 13:37	200
Dibromomethane	200	U	200		ug/L			12/08/15 13:37	200
Dichlorodifluoromethane	200	U	200		ug/L			12/08/15 13:37	200
Ethylbenzene	200	U	200		ug/L			12/08/15 13:37	200
Hexachlorobutadiene	1000	U	1000		ug/L			12/08/15 13:37	200
Isopropylbenzene	200	U	200		ug/L			12/08/15 13:37	200
m-Xylene & p-Xylene	200	U	200		ug/L			12/08/15 13:37	200
Methyl tert-butyl ether	2000	U	2000		ug/L			12/08/15 13:37	200
Methylene Chloride	1000	U	1000		ug/L			12/08/15 13:37	200
Naphthalene	1000	U	1000		ug/L			12/08/15 13:37	200

Client Sample ID: MWW-33

Lab Sample ID: 680-119707-11

Date Collected: 12/02/15 16:15

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	2000	U	2000		ug/L			12/08/15 13:37	200
2-Butanone	2000	U	2000		ug/L			12/08/15 13:37	200
1,2-Dibromoethane	200	U	200		ug/L			12/08/15 13:37	200
n-Butylbenzene	200	U	200		ug/L			12/08/15 13:37	200
N-Propylbenzene	200	U	200		ug/L			12/08/15 13:37	200
o-Xylene	200	U	200		ug/L			12/08/15 13:37	200
p-Isopropyltoluene	200	U	200		ug/L			12/08/15 13:37	200
sec-Butylbenzene	200	U	200		ug/L			12/08/15 13:37	200
Styrene	200	U	200		ug/L			12/08/15 13:37	200
tert-Butylbenzene	200	U	200		ug/L			12/08/15 13:37	200
Tetrachloroethene	**17000**		200		ug/L			12/08/15 13:37	200
Toluene	200	U	200		ug/L			12/08/15 13:37	200
trans-1,2-Dichloroethene	200	U	200		ug/L			12/08/15 13:37	200
trans-1,3-Dichloropropene	200	U	200		ug/L			12/08/15 13:37	200
Trichloroethene	**28000**		200		ug/L			12/08/15 13:37	200
Trichlorofluoromethane	200	U	200		ug/L			12/08/15 13:37	200
Vinyl acetate	400	U	400		ug/L			12/08/15 13:37	200
Vinyl chloride	**380**		200		ug/L			12/08/15 13:37	200
Xylenes, Total	200	U	200		ug/L			12/08/15 13:37	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*70 - 130*		*12/08/15 13:37*	*200*
1,2-Dichloroethane-d4 (Surr)	*114*		*70 - 130*		*12/08/15 13:37*	*200*
Dibromofluoromethane (Surr)	*112*		*70 - 130*		*12/08/15 13:37*	*200*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*12/08/15 13:37*	*200*

Client Sample ID: Dup-01

Lab Sample ID: 680-119707-12

Date Collected: 12/02/15 00:00
Matrix: Water
Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	200	U	200		ug/L			12/08/15 13:59	200
1,1,1-Trichloroethane	200	U	200		ug/L			12/08/15 13:59	200
1,1,2,2-Tetrachloroethane	200	U	200		ug/L			12/08/15 13:59	200
1,1,2-Trichloroethane	200	U	200		ug/L			12/08/15 13:59	200
1,1-Dichloroethane	200	U	200		ug/L			12/08/15 13:59	200
1,1-Dichloroethene	200	U	200		ug/L			12/08/15 13:59	200
1,1-Dichloropropene	200	U	200		ug/L			12/08/15 13:59	200
1,2,3-Trichlorobenzene	1000	U	1000		ug/L			12/08/15 13:59	200
1,2,3-Trichloropropane	200	U	200		ug/L			12/08/15 13:59	200
1,2,4-Trichlorobenzene	1000	U	1000		ug/L			12/08/15 13:59	200
1,2,4-Trimethylbenzene	200	U	200		ug/L			12/08/15 13:59	200
1,2-Dibromo-3-Chloropropane	1000	U	1000		ug/L			12/08/15 13:59	200
1,2-Dichlorobenzene	200	U	200		ug/L			12/08/15 13:59	200
1,2-Dichloroethane	200	U	200		ug/L			12/08/15 13:59	200
1,2-Dichloroethene, Total	**3000**		400		ug/L			12/08/15 13:59	200
1,2-Dichloropropane	200	U	200		ug/L			12/08/15 13:59	200
1,3,5-Trimethylbenzene	200	U	200		ug/L			12/08/15 13:59	200
1,3-Dichlorobenzene	200	U	200		ug/L			12/08/15 13:59	200
1,3-Dichloropropane	200	U	200		ug/L			12/08/15 13:59	200
1,4-Dichlorobenzene	200	U	200		ug/L			12/08/15 13:59	200
2,2-Dichloropropane	200	U	200		ug/L			12/08/15 13:59	200
2-Chlorotoluene	200	U	200		ug/L			12/08/15 13:59	200
2-Hexanone	2000	U	2000		ug/L			12/08/15 13:59	200
4-Chlorotoluene	200	U	200		ug/L			12/08/15 13:59	200
Acetone	2000	U	2000		ug/L			12/08/15 13:59	200
Benzene	200	U	200		ug/L			12/08/15 13:59	200
Bromobenzene	200	U	200		ug/L			12/08/15 13:59	200
Bromochloromethane	200	U	200		ug/L			12/08/15 13:59	200
Bromoform	200	U	200		ug/L			12/08/15 13:59	200
Bromodichloromethane	200	U	200		ug/L			12/08/15 13:59	200
Bromomethane	1000	U	1000		ug/L			12/08/15 13:59	200
Carbon disulfide	400	U	400		ug/L			12/08/15 13:59	200
Carbon tetrachloride	200	U	200		ug/L			12/08/15 13:59	200
Chlorobenzene	200	U	200		ug/L			12/08/15 13:59	200
Chloroethane	1000	U	1000		ug/L			12/08/15 13:59	200
Chloroform	**270**		200		ug/L			12/08/15 13:59	200
Chloromethane	200	U	200		ug/L			12/08/15 13:59	200
cis-1,2-Dichloroethene	**3000**		200		ug/L			12/08/15 13:59	200
cis-1,3-Dichloropropene	200	U	200		ug/L			12/08/15 13:59	200
Dibromochloromethane	200	U	200		ug/L			12/08/15 13:59	200
Dibromomethane	200	U	200		ug/L			12/08/15 13:59	200
Dichlorodifluoromethane	200	U	200		ug/L			12/08/15 13:59	200
Ethylbenzene	200	U	200		ug/L			12/08/15 13:59	200
Hexachlorobutadiene	1000	U	1000		ug/L			12/08/15 13:59	200
Isopropylbenzene	200	U	200		ug/L			12/08/15 13:59	200
m-Xylene & p-Xylene	200	U	200		ug/L			12/08/15 13:59	200
Methyl tert-butyl ether	2000	U	2000		ug/L			12/08/15 13:59	200
Methylene Chloride	1000	U	1000		ug/L			12/08/15 13:59	200
Naphthalene	1000	U	1000		ug/L			12/08/15 13:59	200

Client Sample ID: Dup-01

Lab Sample ID: 680-119707-12

Date Collected: 12/02/15 00:00

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	2000	U	2000		ug/L			12/08/15 13:59	200
2-Butanone	2000	U	2000		ug/L			12/08/15 13:59	200
1,2-Dibromoethane	200	U	200		ug/L			12/08/15 13:59	200
n-Butylbenzene	200	U	200		ug/L			12/08/15 13:59	200
N-Propylbenzene	200	U	200		ug/L			12/08/15 13:59	200
o-Xylene	200	U	200		ug/L			12/08/15 13:59	200
p-Isopropyltoluene	200	U	200		ug/L			12/08/15 13:59	200
sec-Butylbenzene	200	U	200		ug/L			12/08/15 13:59	200
Styrene	200	U	200		ug/L			12/08/15 13:59	200
tert-Butylbenzene	200	U	200		ug/L			12/08/15 13:59	200
Tetrachloroethene	**18000**		200		ug/L			12/08/15 13:59	200
Toluene	200	U	200		ug/L			12/08/15 13:59	200
trans-1,2-Dichloroethene	200	U	200		ug/L			12/08/15 13:59	200
trans-1,3-Dichloropropene	200	U	200		ug/L			12/08/15 13:59	200
Trichloroethene	**30000**		200		ug/L			12/08/15 13:59	200
Trichlorofluoromethane	200	U	200		ug/L			12/08/15 13:59	200
Vinyl acetate	400	U	400		ug/L			12/08/15 13:59	200
Vinyl chloride	**400**		200		ug/L			12/08/15 13:59	200
Xylenes, Total	200	U	200		ug/L			12/08/15 13:59	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*70 - 130*		*12/08/15 13:59*	*200*
1,2-Dichloroethane-d4 (Surr)	*118*		*70 - 130*		*12/08/15 13:59*	*200*
Dibromofluoromethane (Surr)	*113*		*70 - 130*		*12/08/15 13:59*	*200*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*12/08/15 13:59*	*200*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-37

Date Collected: 12/02/15 15:50
Date Received: 12/04/15 09:09

Lab Sample ID: 680-119707-13

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,1,1-Trichloroethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,1,2,2-Tetrachloroethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,1,2-Trichloroethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,1-Dichloroethane	**19**		2.0		ug/L			12/09/15 17:32	2
1,1-Dichloroethene	**43**		2.0		ug/L			12/09/15 17:32	2
1,1-Dichloropropene	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,2,3-Trichlorobenzene	10	U	10		ug/L			12/09/15 17:32	2
1,2,3-Trichloropropane	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,2,4-Trichlorobenzene	10	U	10		ug/L			12/09/15 17:32	2
1,2,4-Trimethylbenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,2-Dibromo-3-Chloropropane	10	U	10		ug/L			12/09/15 17:32	2
1,2-Dichlorobenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,2-Dichloroethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,2-Dichloroethene, Total	**150**		4.0		ug/L			12/09/15 17:32	2
1,2-Dichloropropane	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,3,5-Trimethylbenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,3-Dichlorobenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,3-Dichloropropane	2.0	U	2.0		ug/L			12/09/15 17:32	2
1,4-Dichlorobenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
2,2-Dichloropropane	2.0	U	2.0		ug/L			12/09/15 17:32	2
2-Chlorotoluene	2.0	U	2.0		ug/L			12/09/15 17:32	2
2-Hexanone	20	U	20		ug/L			12/09/15 17:32	2
4-Chlorotoluene	2.0	U	2.0		ug/L			12/09/15 17:32	2
Acetone	20	U	20		ug/L			12/09/15 17:32	2
Benzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
Bromobenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
Bromochloromethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
Bromoform	2.0	U	2.0		ug/L			12/09/15 17:32	2
Bromodichloromethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
Bromomethane	10	U	10		ug/L			12/09/15 17:32	2
Carbon disulfide	4.0	U	4.0		ug/L			12/09/15 17:32	2
Carbon tetrachloride	2.0	U	2.0		ug/L			12/09/15 17:32	2
Chlorobenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
Chloroethane	10	U	10		ug/L			12/09/15 17:32	2
Chloroform	**3.4**		2.0		ug/L			12/09/15 17:32	2
Chloromethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
cis-1,2-Dichloroethene	**150**		2.0		ug/L			12/09/15 17:32	2
cis-1,3-Dichloropropene	2.0	U	2.0		ug/L			12/09/15 17:32	2
Dibromochloromethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
Dibromomethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
Dichlorodifluoromethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
Ethylbenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
Hexachlorobutadiene	10	U	10		ug/L			12/09/15 17:32	2
Isopropylbenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
m-Xylene & p-Xylene	2.0	U	2.0		ug/L			12/09/15 17:32	2
Methyl tert-butyl ether	20	U	20		ug/L			12/09/15 17:32	2
Methylene Chloride	10	U	10		ug/L			12/09/15 17:32	2
Naphthalene	10	U	10		ug/L			12/09/15 17:32	2

Client Sample ID: MWW-37

Lab Sample ID: 680-119707-13

Date Collected: 12/02/15 15:50

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	20	U	20		ug/L			12/09/15 17:32	2
2-Butanone	20	U	20		ug/L			12/09/15 17:32	2
1,2-Dibromoethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
n-Butylbenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
N-Propylbenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
o-Xylene	2.0	U	2.0		ug/L			12/09/15 17:32	2
p-Isopropyltoluene	2.0	U	2.0		ug/L			12/09/15 17:32	2
sec-Butylbenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
Styrene	2.0	U	2.0		ug/L			12/09/15 17:32	2
tert-Butylbenzene	2.0	U	2.0		ug/L			12/09/15 17:32	2
Tetrachloroethene	**210**		2.0		ug/L			12/09/15 17:32	2
Toluene	2.0	U	2.0		ug/L			12/09/15 17:32	2
trans-1,2-Dichloroethene	2.0	U	2.0		ug/L			12/09/15 17:32	2
trans-1,3-Dichloropropene	2.0	U	2.0		ug/L			12/09/15 17:32	2
Trichloroethene	**210**		2.0		ug/L			12/09/15 17:32	2
Trichlorofluoromethane	2.0	U	2.0		ug/L			12/09/15 17:32	2
Vinyl acetate	4.0	U	4.0		ug/L			12/09/15 17:32	2
Vinyl chloride	**6.0**		2.0		ug/L			12/09/15 17:32	2
Xylenes, Total	2.0	U	2.0		ug/L			12/09/15 17:32	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*		*12/09/15 17:32*	*2*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*		*12/09/15 17:32*	*2*
Dibromofluoromethane (Surr)	*110*		*70 - 130*		*12/09/15 17:32*	*2*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*		*12/09/15 17:32*	*2*

Client Sample ID: MWW-15D

Lab Sample ID: 680-119707-14

Date Collected: 12/03/15 09:30

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	10	U	10		ug/L			12/08/15 16:51	10
1,1,1-Trichloroethane	10	U	10		ug/L			12/08/15 16:51	10
1,1,2,2-Tetrachloroethane	10	U	10		ug/L			12/08/15 16:51	10
1,1,2-Trichloroethane	10	U	10		ug/L			12/08/15 16:51	10
1,1-Dichloroethane	**33**		10		ug/L			12/08/15 16:51	10
1,1-Dichloroethene	**59**		10		ug/L			12/08/15 16:51	10
1,1-Dichloropropene	10	U	10		ug/L			12/08/15 16:51	10
1,2,3-Trichlorobenzene	50	U	50		ug/L			12/08/15 16:51	10
1,2,3-Trichloropropane	10	U	10		ug/L			12/08/15 16:51	10
1,2,4-Trichlorobenzene	50	U	50		ug/L			12/08/15 16:51	10
1,2,4-Trimethylbenzene	10	U	10		ug/L			12/08/15 16:51	10
1,2-Dibromo-3-Chloropropane	50	U	50		ug/L			12/08/15 16:51	10
1,2-Dichlorobenzene	10	U	10		ug/L			12/08/15 16:51	10
1,2-Dichloroethane	10	U	10		ug/L			12/08/15 16:51	10
1,2-Dichloroethene, Total	**520**		20		ug/L			12/08/15 16:51	10
1,2-Dichloropropane	10	U	10		ug/L			12/08/15 16:51	10
1,3,5-Trimethylbenzene	10	U	10		ug/L			12/08/15 16:51	10
1,3-Dichlorobenzene	10	U	10		ug/L			12/08/15 16:51	10
1,3-Dichloropropane	10	U	10		ug/L			12/08/15 16:51	10
1,4-Dichlorobenzene	10	U	10		ug/L			12/08/15 16:51	10
2,2-Dichloropropane	10	U	10		ug/L			12/08/15 16:51	10
2-Chlorotoluene	10	U	10		ug/L			12/08/15 16:51	10
2-Hexanone	100	U	100		ug/L			12/08/15 16:51	10
4-Chlorotoluene	10	U	10		ug/L			12/08/15 16:51	10
Acetone	100	U	100		ug/L			12/08/15 16:51	10
Benzene	10	U	10		ug/L			12/08/15 16:51	10
Bromobenzene	10	U	10		ug/L			12/08/15 16:51	10
Bromochloromethane	10	U	10		ug/L			12/08/15 16:51	10
Bromoform	10	U	10		ug/L			12/08/15 16:51	10
Bromodichloromethane	10	U	10		ug/L			12/08/15 16:51	10
Bromomethane	50	U	50		ug/L			12/08/15 16:51	10
Carbon disulfide	20	U	20		ug/L			12/08/15 16:51	10
Carbon tetrachloride	10	U	10		ug/L			12/08/15 16:51	10
Chlorobenzene	10	U	10		ug/L			12/08/15 16:51	10
Chloroethane	50	U	50		ug/L			12/08/15 16:51	10
Chloroform	10	U	10		ug/L			12/08/15 16:51	10
Chloromethane	10	U	10		ug/L			12/08/15 16:51	10
cis-1,2-Dichloroethene	**490**		10		ug/L			12/08/15 16:51	10
cis-1,3-Dichloropropene	10	U	10		ug/L			12/08/15 16:51	10
Dibromochloromethane	10	U	10		ug/L			12/08/15 16:51	10
Dibromomethane	10	U	10		ug/L			12/08/15 16:51	10
Dichlorodifluoromethane	10	U	10		ug/L			12/08/15 16:51	10
Ethylbenzene	10	U	10		ug/L			12/08/15 16:51	10
Hexachlorobutadiene	50	U	50		ug/L			12/08/15 16:51	10
Isopropylbenzene	10	U	10		ug/L			12/08/15 16:51	10
m-Xylene & p-Xylene	10	U	10		ug/L			12/08/15 16:51	10
Methyl tert-butyl ether	100	U	100		ug/L			12/08/15 16:51	10
Methylene Chloride	50	U	50		ug/L			12/08/15 16:51	10
Naphthalene	50	U	50		ug/L			12/08/15 16:51	10

Client Sample ID: MWW-15D

Lab Sample ID: 680-119707-14

Date Collected: 12/03/15 09:30

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	100	U	100		ug/L			12/08/15 16:51	10
2-Butanone	100	U	100		ug/L			12/08/15 16:51	10
1,2-Dibromoethane	10	U	10		ug/L			12/08/15 16:51	10
n-Butylbenzene	10	U	10		ug/L			12/08/15 16:51	10
N-Propylbenzene	10	U	10		ug/L			12/08/15 16:51	10
o-Xylene	10	U	10		ug/L			12/08/15 16:51	10
p-Isopropyltoluene	10	U	10		ug/L			12/08/15 16:51	10
sec-Butylbenzene	10	U	10		ug/L			12/08/15 16:51	10
Styrene	10	U	10		ug/L			12/08/15 16:51	10
tert-Butylbenzene	10	U	10		ug/L			12/08/15 16:51	10
Tetrachloroethene	**260**		10		ug/L			12/08/15 16:51	10
Toluene	10	U	10		ug/L			12/08/15 16:51	10
trans-1,2-Dichloroethene	**28**		10		ug/L			12/08/15 16:51	10
trans-1,3-Dichloropropene	10	U	10		ug/L			12/08/15 16:51	10
Trichloroethene	**350**		10		ug/L			12/08/15 16:51	10
Trichlorofluoromethane	10	U	10		ug/L			12/08/15 16:51	10
Vinyl acetate	20	U	20		ug/L			12/08/15 16:51	10
Vinyl chloride	**55**		10		ug/L			12/08/15 16:51	10
Xylenes, Total	10	U	10		ug/L			12/08/15 16:51	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*		*12/08/15 16:51*	*10*
1,2-Dichloroethane-d4 (Surr)	*112*		*70 - 130*		*12/08/15 16:51*	*10*
Dibromofluoromethane (Surr)	*113*		*70 - 130*		*12/08/15 16:51*	*10*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*12/08/15 16:51*	*10*

Client Sample ID: MWW-45

Lab Sample ID: 680-119707-15

Date Collected: 12/03/15 10:12

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,1,1-Trichloroethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,1,2,2-Tetrachloroethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,1,2-Trichloroethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,1-Dichloroethane	**10**		5.0		ug/L			12/08/15 17:12	5
1,1-Dichloroethene	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,1-Dichloropropene	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,2,3-Trichlorobenzene	25	U	25		ug/L			12/08/15 17:12	5
1,2,3-Trichloropropane	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,2,4-Trichlorobenzene	25	U	25		ug/L			12/08/15 17:12	5
1,2,4-Trimethylbenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,2-Dibromo-3-Chloropropane	25	U	25		ug/L			12/08/15 17:12	5
1,2-Dichlorobenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,2-Dichloroethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,2-Dichloroethene, Total	**640**		10		ug/L			12/08/15 17:12	5
1,2-Dichloropropane	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,3,5-Trimethylbenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,3-Dichlorobenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,3-Dichloropropane	5.0	U	5.0		ug/L			12/08/15 17:12	5
1,4-Dichlorobenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
2,2-Dichloropropane	5.0	U	5.0		ug/L			12/08/15 17:12	5
2-Chlorotoluene	5.0	U	5.0		ug/L			12/08/15 17:12	5
2-Hexanone	50	U	50		ug/L			12/08/15 17:12	5
4-Chlorotoluene	5.0	U	5.0		ug/L			12/08/15 17:12	5
Acetone	50	U	50		ug/L			12/08/15 17:12	5
Benzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
Bromobenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
Bromochloromethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
Bromoform	5.0	U	5.0		ug/L			12/08/15 17:12	5
Bromodichloromethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
Bromomethane	25	U	25		ug/L			12/08/15 17:12	5
Carbon disulfide	10	U	10		ug/L			12/08/15 17:12	5
Carbon tetrachloride	5.0	U	5.0		ug/L			12/08/15 17:12	5
Chlorobenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
Chloroethane	25	U	25		ug/L			12/08/15 17:12	5
Chloroform	5.0	U	5.0		ug/L			12/08/15 17:12	5
Chloromethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
cis-1,2-Dichloroethene	**600**		5.0		ug/L			12/08/15 17:12	5
cis-1,3-Dichloropropene	5.0	U	5.0		ug/L			12/08/15 17:12	5
Dibromochloromethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
Dibromomethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
Dichlorodifluoromethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
Ethylbenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
Hexachlorobutadiene	25	U	25		ug/L			12/08/15 17:12	5
Isopropylbenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
m-Xylene & p-Xylene	5.0	U	5.0		ug/L			12/08/15 17:12	5
Methyl tert-butyl ether	50	U	50		ug/L			12/08/15 17:12	5
Methylene Chloride	25	U	25		ug/L			12/08/15 17:12	5
Naphthalene	25	U	25		ug/L			12/08/15 17:12	5

Client Sample ID: MWW-45

Lab Sample ID: 680-119707-15

Date Collected: 12/03/15 10:12

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	50	U	50		ug/L			12/08/15 17:12	5
2-Butanone	50	U	50		ug/L			12/08/15 17:12	5
1,2-Dibromoethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
n-Butylbenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
N-Propylbenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
o-Xylene	5.0	U	5.0		ug/L			12/08/15 17:12	5
p-Isopropyltoluene	5.0	U	5.0		ug/L			12/08/15 17:12	5
sec-Butylbenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
Styrene	5.0	U	5.0		ug/L			12/08/15 17:12	5
tert-Butylbenzene	5.0	U	5.0		ug/L			12/08/15 17:12	5
Tetrachloroethene	5.0	U	5.0		ug/L			12/08/15 17:12	5
Toluene	5.0	U	5.0		ug/L			12/08/15 17:12	5
trans-1,2-Dichloroethene	**38**		5.0		ug/L			12/08/15 17:12	5
trans-1,3-Dichloropropene	5.0	U	5.0		ug/L			12/08/15 17:12	5
Trichloroethene	**59**		5.0		ug/L			12/08/15 17:12	5
Trichlorofluoromethane	5.0	U	5.0		ug/L			12/08/15 17:12	5
Vinyl acetate	10	U	10		ug/L			12/08/15 17:12	5
Vinyl chloride	**39**		5.0		ug/L			12/08/15 17:12	5
Xylenes, Total	5.0	U	5.0		ug/L			12/08/15 17:12	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*70 - 130*		*12/08/15 17:12*	*5*
1,2-Dichloroethane-d4 (Surr)	*117*		*70 - 130*		*12/08/15 17:12*	*5*
Dibromofluoromethane (Surr)	*113*		*70 - 130*		*12/08/15 17:12*	*5*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*12/08/15 17:12*	*5*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-51D

Date Collected: 12/03/15 12:00
Date Received: 12/04/15 09:09

Lab Sample ID: 680-119707-16

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 15:46	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 15:46	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/08/15 15:46	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/08/15 15:46	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 15:46	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 15:46	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 15:46	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 15:46	1
2-Hexanone	10	U	10		ug/L			12/08/15 15:46	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 15:46	1
Acetone	10	U	10		ug/L			12/08/15 15:46	1
Benzene	**1.0**		1.0		ug/L			12/08/15 15:46	1
Bromobenzene	1.0	U	1.0		ug/L			12/08/15 15:46	1
Bromochloromethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
Bromoform	1.0	U	1.0		ug/L			12/08/15 15:46	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
Bromomethane	5.0	U	5.0		ug/L			12/08/15 15:46	1
Carbon disulfide	2.0	U	2.0		ug/L			12/08/15 15:46	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/08/15 15:46	1
Chlorobenzene	1.0	U	1.0		ug/L			12/08/15 15:46	1
Chloroethane	5.0	U	5.0		ug/L			12/08/15 15:46	1
Chloroform	1.0	U	1.0		ug/L			12/08/15 15:46	1
Chloromethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 15:46	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 15:46	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
Dibromomethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
Ethylbenzene	1.0	U	1.0		ug/L			12/08/15 15:46	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/08/15 15:46	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/08/15 15:46	1
m-Xylene & p-Xylene	**1.5**		1.0		ug/L			12/08/15 15:46	1
Methyl tert-butyl ether	10	U	10		ug/L			12/08/15 15:46	1
Methylene Chloride	5.0	U	5.0		ug/L			12/08/15 15:46	1
Naphthalene	**90**		5.0		ug/L			12/08/15 15:46	1

Client Sample ID: MWW-51D

Lab Sample ID: 680-119707-16

Date Collected: 12/03/15 12:00

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	10	U	10		ug/L			12/08/15 15:46	1
2-Butanone	10	U	10		ug/L			12/08/15 15:46	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 15:46	1
N-Propylbenzene	**1.2**		1.0		ug/L			12/08/15 15:46	1
o-Xylene	**1.1**		1.0		ug/L			12/08/15 15:46	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/08/15 15:46	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 15:46	1
Styrene	1.0	U	1.0		ug/L			12/08/15 15:46	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 15:46	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/08/15 15:46	1
Toluene	1.0	U	1.0		ug/L			12/08/15 15:46	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 15:46	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 15:46	1
Trichloroethene	1.0	U	1.0		ug/L			12/08/15 15:46	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/08/15 15:46	1
Vinyl acetate	2.0	U	2.0		ug/L			12/08/15 15:46	1
Vinyl chloride	1.0	U	1.0		ug/L			12/08/15 15:46	1
Xylenes, Total	**2.6**		1.0		ug/L			12/08/15 15:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*70 - 130*		*12/08/15 15:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*		*12/08/15 15:46*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*12/08/15 15:46*	*1*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*		*12/08/15 15:46*	*1*

Client Sample ID: MWW-34

Lab Sample ID: 680-119707-17

Date Collected: 12/03/15 13:24

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 16:08	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 16:08	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/08/15 16:08	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/08/15 16:08	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 16:08	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 16:08	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 16:08	1
2-Hexanone	10	U	10		ug/L			12/08/15 16:08	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 16:08	1
Acetone	10	U	10		ug/L			12/08/15 16:08	1
Benzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
Bromobenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
Bromochloromethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
Bromoform	1.0	U	1.0		ug/L			12/08/15 16:08	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
Bromomethane	5.0	U	5.0		ug/L			12/08/15 16:08	1
Carbon disulfide	2.0	U	2.0		ug/L			12/08/15 16:08	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/08/15 16:08	1
Chlorobenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
Chloroethane	5.0	U	5.0		ug/L			12/08/15 16:08	1
Chloroform	1.0	U	1.0		ug/L			12/08/15 16:08	1
Chloromethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 16:08	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 16:08	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
Dibromomethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
Ethylbenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/08/15 16:08	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/08/15 16:08	1
Methyl tert-butyl ether	10	U	10		ug/L			12/08/15 16:08	1
Methylene Chloride	5.0	U	5.0		ug/L			12/08/15 16:08	1
Naphthalene	**19**		5.0		ug/L			12/08/15 16:08	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-34

Lab Sample ID: 680-119707-17

Date Collected: 12/03/15 13:24

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	10	U	10		ug/L			12/08/15 16:08	1
2-Butanone	10	U	10		ug/L			12/08/15 16:08	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
o-Xylene	1.0	U	1.0		ug/L			12/08/15 16:08	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/08/15 16:08	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
Styrene	1.0	U	1.0		ug/L			12/08/15 16:08	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 16:08	1
Tetrachloroethene	**26**		1.0		ug/L			12/08/15 16:08	1
Toluene	1.0	U	1.0		ug/L			12/08/15 16:08	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 16:08	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 16:08	1
Trichloroethene	**2.0**		1.0		ug/L			12/08/15 16:08	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/08/15 16:08	1
Vinyl acetate	2.0	U	2.0		ug/L			12/08/15 16:08	1
Vinyl chloride	1.0	U	1.0		ug/L			12/08/15 16:08	1
Xylenes, Total	1.0	U	1.0		ug/L			12/08/15 16:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*70 - 130*		*12/08/15 16:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*		*12/08/15 16:08*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*12/08/15 16:08*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*12/08/15 16:08*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-43

Date Collected: 12/03/15 14:35
Date Received: 12/04/15 09:09

Lab Sample ID: 680-119707-18

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 16:29	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 16:29	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/08/15 16:29	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/08/15 16:29	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 16:29	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 16:29	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 16:29	1
2-Hexanone	10	U	10		ug/L			12/08/15 16:29	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 16:29	1
Acetone	10	U	10		ug/L			12/08/15 16:29	1
Benzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
Bromobenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
Bromochloromethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
Bromoform	1.0	U	1.0		ug/L			12/08/15 16:29	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
Bromomethane	5.0	U	5.0		ug/L			12/08/15 16:29	1
Carbon disulfide	2.0	U	2.0		ug/L			12/08/15 16:29	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/08/15 16:29	1
Chlorobenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
Chloroethane	5.0	U	5.0		ug/L			12/08/15 16:29	1
Chloroform	1.0	U	1.0		ug/L			12/08/15 16:29	1
Chloromethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 16:29	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 16:29	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
Dibromomethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
Ethylbenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/08/15 16:29	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/08/15 16:29	1
Methyl tert-butyl ether	10	U	10		ug/L			12/08/15 16:29	1
Methylene Chloride	5.0	U	5.0		ug/L			12/08/15 16:29	1
Naphthalene	**6.5**		5.0		ug/L			12/08/15 16:29	1

Client Sample ID: MWW-43

Lab Sample ID: 680-119707-18

Date Collected: 12/03/15 14:35

Matrix: Water

Date Received: 12/04/15 09:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	10	U	10		ug/L			12/08/15 16:29	1
2-Butanone	10	U	10		ug/L			12/08/15 16:29	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
o-Xylene	1.0	U	1.0		ug/L			12/08/15 16:29	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/08/15 16:29	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
Styrene	1.0	U	1.0		ug/L			12/08/15 16:29	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 16:29	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/08/15 16:29	1
Toluene	1.0	U	1.0		ug/L			12/08/15 16:29	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 16:29	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 16:29	1
Trichloroethene	1.0	U	1.0		ug/L			12/08/15 16:29	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/08/15 16:29	1
Vinyl acetate	2.0	U	2.0		ug/L			12/08/15 16:29	1
Vinyl chloride	1.0	U	1.0		ug/L			12/08/15 16:29	1
Xylenes, Total	1.0	U	1.0		ug/L			12/08/15 16:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*70 - 130*		*12/08/15 16:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*12/08/15 16:29*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*12/08/15 16:29*	*1*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*		*12/08/15 16:29*	*1*

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	DBFM	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
680-119707-1	MWW-46I	97	93	97	92
680-119707-2	MWW-48	96	91	96	95
680-119707-3	MWW-47I	98	92	100	94
680-119707-4	MWW-57I	96	89	98	95
680-119707-5	MWW-49D	96	92	95	96
680-119707-6	MWW-52	97	93	98	95
680-119707-7	MWW-50D	107	104	103	107
680-119707-8	RW-2	105	102	102	104
680-119707-9	MWW-53	96	118	114	102
680-119707-10	MWW-38	102	102	104	103
680-119707-11	MWW-33	99	114	112	102
680-119707-12	Dup-01	97	118	113	103
680-119707-13	MWW-37	96	101	110	107
680-119707-14	MWW-15D	96	112	113	103
680-119707-15	MWW-45	98	117	113	103
680-119707-16	MWW-51D	102	95	99	105
680-119707-17	MWW-34	102	96	100	103
680-119707-18	MWW-43	105	99	99	108
LCS 680-413396/4	Lab Control Sample	100	102	102	100
LCS 680-413474/4	Lab Control Sample	96	91	96	97
LCS 680-413575/4	Lab Control Sample	102	100	103	104
LCS 680-414262/4	Lab Control Sample	100	99	103	105
LCSD 680-413396/5	Lab Control Sample Dup	102	98	102	101
LCSD 680-413474/5	Lab Control Sample Dup	98	94	99	93
LCSD 680-413575/5	Lab Control Sample Dup	103	98	100	102
LCSD 680-414262/5	Lab Control Sample Dup	100	101	101	107
MB 680-413396/9	Method Blank	102	101	102	103
MB 680-413474/9	Method Blank	97	93	99	95
MB 680-413575/12	Method Blank	105	100	103	106
MB 680-414262/9	Method Blank	106	102	102	108

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)

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

Lab Sample ID: MB 680-413396/9
Matrix: Water
Analysis Batch: 413396

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 09:56	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 09:56	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/08/15 09:56	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/08/15 09:56	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 09:56	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 09:56	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 09:56	1
2-Hexanone	10	U	10		ug/L			12/08/15 09:56	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 09:56	1
Acetone	10	U	10		ug/L			12/08/15 09:56	1
Benzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
Bromobenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
Bromochloromethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
Bromoform	1.0	U	1.0		ug/L			12/08/15 09:56	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
Bromomethane	5.0	U	5.0		ug/L			12/08/15 09:56	1
Carbon disulfide	2.0	U	2.0		ug/L			12/08/15 09:56	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/08/15 09:56	1
Chlorobenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
Chloroethane	5.0	U	5.0		ug/L			12/08/15 09:56	1
Chloroform	1.0	U	1.0		ug/L			12/08/15 09:56	1
Chloromethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 09:56	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 09:56	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
Dibromomethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
Ethylbenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/08/15 09:56	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/08/15 09:56	1
Methyl tert-butyl ether	10	U	10		ug/L			12/08/15 09:56	1
Methylene Chloride	5.0	U	5.0		ug/L			12/08/15 09:56	1

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

Lab Sample ID: MB 680-413396/9
Matrix: Water
Analysis Batch: 413396

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	5.0	U	5.0		ug/L			12/08/15 09:56	1
4-Methyl-2-pentanone	10	U	10		ug/L			12/08/15 09:56	1
2-Butanone	10	U	10		ug/L			12/08/15 09:56	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
o-Xylene	1.0	U	1.0		ug/L			12/08/15 09:56	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/08/15 09:56	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
Styrene	1.0	U	1.0		ug/L			12/08/15 09:56	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 09:56	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/08/15 09:56	1
Toluene	1.0	U	1.0		ug/L			12/08/15 09:56	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 09:56	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 09:56	1
Trichloroethene	1.0	U	1.0		ug/L			12/08/15 09:56	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/08/15 09:56	1
Vinyl acetate	2.0	U	2.0		ug/L			12/08/15 09:56	1
Vinyl chloride	1.0	U	1.0		ug/L			12/08/15 09:56	1
Xylenes, Total	1.0	U	1.0		ug/L			12/08/15 09:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*70 - 130*		*12/08/15 09:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*		*12/08/15 09:56*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*12/08/15 09:56*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*12/08/15 09:56*	*1*

Lab Sample ID: LCS 680-413396/4
Matrix: Water
Analysis Batch: 413396

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	52.0		ug/L		104	80 - 120
1,1,1-Trichloroethane	50.0	51.9		ug/L		104	74 - 128
1,1,2,2-Tetrachloroethane	50.0	51.9		ug/L		104	72 - 128
1,1,2-Trichloroethane	50.0	49.5		ug/L		99	79 - 125
1,1-Dichloroethane	50.0	48.8		ug/L		98	80 - 120
1,1-Dichloroethene	50.0	49.8		ug/L		100	74 - 125
1,1-Dichloropropene	50.0	50.9		ug/L		102	78 - 127
1,2,3-Trichlorobenzene	50.0	59.2		ug/L		118	61 - 151
1,2,3-Trichloropropane	50.0	54.1		ug/L		108	70 - 132
1,2,4-Trichlorobenzene	50.0	57.4		ug/L		115	77 - 131
1,2,4-Trimethylbenzene	50.0	53.3		ug/L		107	80 - 124
1,2-Dibromo-3-Chloropropane	50.0	59.5		ug/L		119	59 - 141
1,2-Dichlorobenzene	50.0	48.9		ug/L		98	80 - 120
1,2-Dichloroethane	50.0	49.5		ug/L		99	75 - 130
1,2-Dichloroethene, Total	100	103		ug/L		103	80 - 120
1,2-Dichloropropane	50.0	51.5		ug/L		103	80 - 123

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

Lab Sample ID: LCS 680-413396/4
Matrix: Water
Analysis Batch: 413396

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	54.4		ug/L		109	80 - 120
1,3-Dichlorobenzene	50.0	48.4		ug/L		97	80 - 120
1,3-Dichloropropane	50.0	51.0		ug/L		102	78 - 127
1,4-Dichlorobenzene	50.0	52.3		ug/L		105	80 - 120
2,2-Dichloropropane	50.0	57.9		ug/L		116	72 - 133
2-Chlorotoluene	50.0	50.8		ug/L		102	77 - 121
2-Hexanone	250	265		ug/L		106	70 - 141
4-Chlorotoluene	50.0	51.9		ug/L		104	80 - 120
Acetone	250	249		ug/L		99	60 - 154
Benzene	50.0	49.7		ug/L		99	73 - 131
Bromobenzene	50.0	51.2		ug/L		102	79 - 124
Bromochloromethane	50.0	50.2		ug/L		100	77 - 122
Bromoform	50.0	58.0		ug/L		116	69 - 135
Bromodichloromethane	50.0	51.4		ug/L		103	77 - 129
Bromomethane	50.0	47.5		ug/L		95	20 - 180
Carbon disulfide	50.0	49.9		ug/L		100	73 - 127
Carbon tetrachloride	50.0	53.5		ug/L		107	75 - 130
Chlorobenzene	50.0	49.6		ug/L		99	80 - 120
Chloroethane	50.0	51.2		ug/L		102	50 - 151
Chloroform	50.0	50.9		ug/L		102	79 - 122
Chloromethane	50.0	52.8		ug/L		106	63 - 126
cis-1,2-Dichloroethene	50.0	51.9		ug/L		104	80 - 122
cis-1,3-Dichloropropene	50.0	56.4		ug/L		113	80 - 133
Dibromochloromethane	50.0	53.0		ug/L		106	71 - 136
Dibromomethane	50.0	50.1		ug/L		100	80 - 122
Dichlorodifluoromethane	50.0	55.6		ug/L		111	51 - 140
Ethylbenzene	50.0	51.9		ug/L		104	80 - 120
Hexachlorobutadiene	50.0	55.4		ug/L		111	77 - 129
Isopropylbenzene	50.0	54.1		ug/L		108	80 - 120
m-Xylene & p-Xylene	50.0	53.2		ug/L		106	80 - 120
Methyl tert-butyl ether	50.0	52.9		ug/L		106	74 - 135
Methylene Chloride	50.0	51.7		ug/L		103	76 - 129
Naphthalene	50.0	61.2		ug/L		122	69 - 148
4-Methyl-2-pentanone	250	267		ug/L		107	75 - 135
2-Butanone	250	252		ug/L		101	75 - 133
1,2-Dibromoethane	50.0	52.0		ug/L		104	77 - 131
n-Butylbenzene	50.0	50.1		ug/L		100	78 - 124
N-Propylbenzene	50.0	53.7		ug/L		107	80 - 120
o-Xylene	50.0	52.1		ug/L		104	80 - 120
p-Isopropyltoluene	50.0	53.9		ug/L		108	80 - 120
sec-Butylbenzene	50.0	54.6		ug/L		109	76 - 125
Styrene	50.0	55.3		ug/L		111	80 - 122
tert-Butylbenzene	50.0	54.3		ug/L		109	80 - 120
Tetrachloroethene	50.0	50.8		ug/L		102	77 - 123
Toluene	50.0	51.1		ug/L		102	80 - 122
trans-1,2-Dichloroethene	50.0	50.8		ug/L		102	78 - 123
trans-1,3-Dichloropropene	50.0	54.0		ug/L		108	74 - 140
Trichloroethene	50.0	51.7		ug/L		103	80 - 123

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

Lab Sample ID: LCS 680-413396/4
Matrix: Water
Analysis Batch: 413396

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	52.2		ug/L		104	58 - 145
Vinyl acetate	100	145		ug/L		145	15 - 190
Vinyl chloride	50.0	52.7		ug/L		105	68 - 132
Xylenes, Total	100	105		ug/L		105	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 680-413396/5
Matrix: Water
Analysis Batch: 413396

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	51.5		ug/L		103	80 - 120	1	20
1,1,1-Trichloroethane	50.0	52.7		ug/L		105	74 - 128	2	20
1,1,2,2-Tetrachloroethane	50.0	50.2		ug/L		100	72 - 128	3	20
1,1,2-Trichloroethane	50.0	48.9		ug/L		98	79 - 125	1	20
1,1-Dichloroethane	50.0	49.2		ug/L		98	80 - 120	1	20
1,1-Dichloroethene	50.0	54.0		ug/L		108	74 - 125	8	20
1,1-Dichloropropene	50.0	51.6		ug/L		103	78 - 127	1	20
1,2,3-Trichlorobenzene	50.0	65.3		ug/L		131	61 - 151	10	40
1,2,3-Trichloropropane	50.0	52.5		ug/L		105	70 - 132	3	30
1,2,4-Trichlorobenzene	50.0	61.9		ug/L		124	77 - 131	7	20
1,2,4-Trimethylbenzene	50.0	54.4		ug/L		109	80 - 124	2	20
1,2-Dibromo-3-Chloropropane	50.0	58.8		ug/L		118	59 - 141	1	30
1,2-Dichlorobenzene	50.0	49.4		ug/L		99	80 - 120	1	20
1,2-Dichloroethane	50.0	48.2		ug/L		96	75 - 130	3	20
1,2-Dichloroethene, Total	100	104		ug/L		104	80 - 120	1	20
1,2-Dichloropropane	50.0	51.0		ug/L		102	80 - 123	1	20
1,3,5-Trimethylbenzene	50.0	55.2		ug/L		110	80 - 120	2	20
1,3-Dichlorobenzene	50.0	48.8		ug/L		98	80 - 120	1	20
1,3-Dichloropropane	50.0	49.5		ug/L		99	78 - 127	3	20
1,4-Dichlorobenzene	50.0	52.2		ug/L		104	80 - 120	0	20
2,2-Dichloropropane	50.0	59.2		ug/L		118	72 - 133	2	20
2-Chlorotoluene	50.0	51.2		ug/L		102	77 - 121	1	20
2-Hexanone	250	253		ug/L		101	70 - 141	5	40
4-Chlorotoluene	50.0	51.2		ug/L		102	80 - 120	1	20
Acetone	250	242		ug/L		97	60 - 154	3	40
Benzene	50.0	50.7		ug/L		101	73 - 131	2	30
Bromobenzene	50.0	51.1		ug/L		102	79 - 124	0	20
Bromochloromethane	50.0	50.0		ug/L		100	77 - 122	0	20
Bromoform	50.0	55.5		ug/L		111	69 - 135	4	20
Bromodichloromethane	50.0	50.8		ug/L		102	77 - 129	1	20
Bromomethane	50.0	48.0		ug/L		96	20 - 180	1	40
Carbon disulfide	50.0	52.5		ug/L		105	73 - 127	5	20

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

Lab Sample ID: LCSD 680-413396/5
Matrix: Water
Analysis Batch: 413396

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride			50.0	54.7		ug/L		109	75 - 130	2	20
Chlorobenzene			50.0	48.6		ug/L		97	80 - 120	2	20
Chloroethane			50.0	52.8		ug/L		106	50 - 151	3	30
Chloroform			50.0	50.2		ug/L		100	79 - 122	1	20
Chloromethane			50.0	53.2		ug/L		106	63 - 126	1	30
cis-1,2-Dichloroethene			50.0	52.1		ug/L		104	80 - 122	0	20
cis-1,3-Dichloropropene			50.0	55.0		ug/L		110	80 - 133	3	20
Dibromochloromethane			50.0	51.8		ug/L		104	71 - 136	2	20
Dibromomethane			50.0	47.5		ug/L		95	80 - 122	5	20
Dichlorodifluoromethane			50.0	58.4		ug/L		117	51 - 140	5	40
Ethylbenzene			50.0	51.9		ug/L		104	80 - 120	0	20
Hexachlorobutadiene			50.0	59.2		ug/L		118	77 - 129	7	30
Isopropylbenzene			50.0	55.2		ug/L		110	80 - 120	2	20
m-Xylene & p-Xylene			50.0	53.3		ug/L		107	80 - 120	0	20
Methyl tert-butyl ether			50.0	51.4		ug/L		103	74 - 135	3	20
Methylene Chloride			50.0	50.8		ug/L		102	76 - 129	2	20
Naphthalene			50.0	68.0		ug/L		136	69 - 148	10	40
4-Methyl-2-pentanone			250	254		ug/L		102	75 - 135	5	30
2-Butanone			250	247		ug/L		99	75 - 133	2	30
1,2-Dibromoethane			50.0	50.0		ug/L		100	77 - 131	4	30
n-Butylbenzene			50.0	51.4		ug/L		103	78 - 124	3	20
N-Propylbenzene			50.0	54.5		ug/L		109	80 - 120	2	20
o-Xylene			50.0	52.1		ug/L		104	80 - 120	0	20
p-Isopropyltoluene			50.0	55.6		ug/L		111	80 - 120	3	20
sec-Butylbenzene			50.0	56.1		ug/L		112	76 - 125	3	30
Styrene			50.0	54.3		ug/L		109	80 - 122	2	20
tert-Butylbenzene			50.0	55.4		ug/L		111	80 - 120	2	20
Tetrachloroethene			50.0	51.7		ug/L		103	77 - 123	2	20
Toluene			50.0	51.6		ug/L		103	80 - 122	1	20
trans-1,2-Dichloroethene			50.0	52.0		ug/L		104	78 - 123	2	20
trans-1,3-Dichloropropene			50.0	52.1		ug/L		104	74 - 140	4	20
Trichloroethene			50.0	52.2		ug/L		104	80 - 123	1	20
Trichlorofluoromethane			50.0	54.4		ug/L		109	58 - 145	4	30
Vinyl acetate			100	141		ug/L		141	15 - 190	3	50
Vinyl chloride			50.0	54.5		ug/L		109	68 - 132	3	30
Xylenes, Total			100	105		ug/L		105	80 - 120	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

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

Lab Sample ID: MB 680-413474/9
Matrix: Water
Analysis Batch: 413474

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 15:42	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/08/15 15:42	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/08/15 15:42	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/08/15 15:42	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 15:42	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/08/15 15:42	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 15:42	1
2-Hexanone	10	U	10		ug/L			12/08/15 15:42	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/08/15 15:42	1
Acetone	10	U	10		ug/L			12/08/15 15:42	1
Benzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
Bromobenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
Bromochloromethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
Bromoform	1.0	U	1.0		ug/L			12/08/15 15:42	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
Bromomethane	5.0	U	5.0		ug/L			12/08/15 15:42	1
Carbon disulfide	2.0	U	2.0		ug/L			12/08/15 15:42	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/08/15 15:42	1
Chlorobenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
Chloroethane	5.0	U	5.0		ug/L			12/08/15 15:42	1
Chloroform	1.0	U	1.0		ug/L			12/08/15 15:42	1
Chloromethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 15:42	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 15:42	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
Dibromomethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
Ethylbenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/08/15 15:42	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/08/15 15:42	1
Methyl tert-butyl ether	10	U	10		ug/L			12/08/15 15:42	1
Methylene Chloride	5.0	U	5.0		ug/L			12/08/15 15:42	1

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

Lab Sample ID: MB 680-413474/9
Matrix: Water
Analysis Batch: 413474

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	5.0	U	5.0		ug/L			12/08/15 15:42	1
4-Methyl-2-pentanone	10	U	10		ug/L			12/08/15 15:42	1
2-Butanone	10	U	10		ug/L			12/08/15 15:42	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
o-Xylene	1.0	U	1.0		ug/L			12/08/15 15:42	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/08/15 15:42	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
Styrene	1.0	U	1.0		ug/L			12/08/15 15:42	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/08/15 15:42	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/08/15 15:42	1
Toluene	1.0	U	1.0		ug/L			12/08/15 15:42	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/08/15 15:42	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/08/15 15:42	1
Trichloroethene	1.0	U	1.0		ug/L			12/08/15 15:42	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/08/15 15:42	1
Vinyl acetate	2.0	U	2.0		ug/L			12/08/15 15:42	1
Vinyl chloride	1.0	U	1.0		ug/L			12/08/15 15:42	1
Xylenes, Total	1.0	U	1.0		ug/L			12/08/15 15:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*70 - 130*		*12/08/15 15:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*		*12/08/15 15:42*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*12/08/15 15:42*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*12/08/15 15:42*	*1*

Lab Sample ID: LCS 680-413474/4
Matrix: Water
Analysis Batch: 413474

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	51.8		ug/L		104	80 - 120
1,1,1-Trichloroethane	50.0	47.9		ug/L		96	74 - 128
1,1,2,2-Tetrachloroethane	50.0	47.4		ug/L		95	72 - 128
1,1,2-Trichloroethane	50.0	47.8		ug/L		96	79 - 125
1,1-Dichloroethane	50.0	45.3		ug/L		91	80 - 120
1,1-Dichloroethene	50.0	49.6		ug/L		99	74 - 125
1,1-Dichloropropene	50.0	48.4		ug/L		97	78 - 127
1,2,3-Trichlorobenzene	50.0	46.7		ug/L		93	61 - 151
1,2,3-Trichloropropane	50.0	49.7		ug/L		99	70 - 132
1,2,4-Trichlorobenzene	50.0	48.0		ug/L		96	77 - 131
1,2,4-Trimethylbenzene	50.0	51.1		ug/L		102	80 - 124
1,2-Dibromo-3-Chloropropane	50.0	48.2		ug/L		96	59 - 141
1,2-Dichlorobenzene	50.0	47.0		ug/L		94	80 - 120
1,2-Dichloroethane	50.0	44.8		ug/L		90	75 - 130
1,2-Dichloroethene, Total	100	96.8		ug/L		97	80 - 120
1,2-Dichloropropane	50.0	47.4		ug/L		95	80 - 123

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

Lab Sample ID: LCS 680-413474/4
Matrix: Water
Analysis Batch: 413474

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	50.7		ug/L		101	80 - 120
1,3-Dichlorobenzene	50.0	47.2		ug/L		94	80 - 120
1,3-Dichloropropane	50.0	46.5		ug/L		93	78 - 127
1,4-Dichlorobenzene	50.0	46.3		ug/L		93	80 - 120
2,2-Dichloropropane	50.0	52.1		ug/L		104	72 - 133
2-Chlorotoluene	50.0	48.8		ug/L		98	77 - 121
2-Hexanone	250	215		ug/L		86	70 - 141
4-Chlorotoluene	50.0	48.8		ug/L		98	80 - 120
Acetone	250	196		ug/L		78	60 - 154
Benzene	50.0	48.0		ug/L		96	73 - 131
Bromobenzene	50.0	51.5		ug/L		103	79 - 124
Bromochloromethane	50.0	46.2		ug/L		92	77 - 122
Bromoform	50.0	54.4		ug/L		109	69 - 135
Bromodichloromethane	50.0	47.2		ug/L		94	77 - 129
Bromomethane	50.0	50.6		ug/L		101	20 - 180
Carbon disulfide	50.0	49.0		ug/L		98	73 - 127
Carbon tetrachloride	50.0	51.5		ug/L		103	75 - 130
Chlorobenzene	50.0	49.3		ug/L		99	80 - 120
Chloroethane	50.0	43.3		ug/L		87	50 - 151
Chloroform	50.0	46.8		ug/L		94	79 - 122
Chloromethane	50.0	46.8		ug/L		94	63 - 126
cis-1,2-Dichloroethene	50.0	46.2		ug/L		92	80 - 122
cis-1,3-Dichloropropene	50.0	48.9		ug/L		98	80 - 133
Dibromochloromethane	50.0	49.3		ug/L		99	71 - 136
Dibromomethane	50.0	45.4		ug/L		91	80 - 122
Dichlorodifluoromethane	50.0	50.5		ug/L		101	51 - 140
Ethylbenzene	50.0	49.4		ug/L		99	80 - 120
Hexachlorobutadiene	50.0	50.1		ug/L		100	77 - 129
Isopropylbenzene	50.0	51.5		ug/L		103	80 - 120
m-Xylene & p-Xylene	50.0	50.4		ug/L		101	80 - 120
Methyl tert-butyl ether	50.0	47.4		ug/L		95	74 - 135
Methylene Chloride	50.0	47.5		ug/L		95	76 - 129
Naphthalene	50.0	46.8		ug/L		94	69 - 148
4-Methyl-2-pentanone	250	221		ug/L		88	75 - 135
2-Butanone	250	210		ug/L		84	75 - 133
1,2-Dibromoethane	50.0	47.8		ug/L		96	77 - 131
n-Butylbenzene	50.0	49.2		ug/L		98	78 - 124
N-Propylbenzene	50.0	50.5		ug/L		101	80 - 120
o-Xylene	50.0	48.5		ug/L		97	80 - 120
p-Isopropyltoluene	50.0	48.3		ug/L		97	80 - 120
sec-Butylbenzene	50.0	50.5		ug/L		101	76 - 125
Styrene	50.0	51.5		ug/L		103	80 - 122
tert-Butylbenzene	50.0	51.0		ug/L		102	80 - 120
Tetrachloroethene	50.0	49.8		ug/L		100	77 - 123
Toluene	50.0	48.4		ug/L		97	80 - 122
trans-1,2-Dichloroethene	50.0	50.6		ug/L		101	78 - 123
trans-1,3-Dichloropropene	50.0	47.2		ug/L		94	74 - 140
Trichloroethene	50.0	50.7		ug/L		101	80 - 123

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

Lab Sample ID: LCS 680-413474/4
Matrix: Water
Analysis Batch: 413474

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	50.8		ug/L		102	58 - 145
Vinyl acetate	100	95.4		ug/L		95	15 - 190
Vinyl chloride	50.0	48.5		ug/L		97	68 - 132
Xylenes, Total	100	98.9		ug/L		99	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*
Dibromofluoromethane (Surr)	*96*		*70 - 130*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 680-413474/5
Matrix: Water
Analysis Batch: 413474

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	52.8		ug/L		106	80 - 120	2	20
1,1,1-Trichloroethane	50.0	48.9		ug/L		98	74 - 128	2	20
1,1,2,2-Tetrachloroethane	50.0	50.0		ug/L		100	72 - 128	5	20
1,1,2-Trichloroethane	50.0	49.6		ug/L		99	79 - 125	4	20
1,1-Dichloroethane	50.0	46.1		ug/L		92	80 - 120	2	20
1,1-Dichloroethene	50.0	49.5		ug/L		99	74 - 125	0	20
1,1-Dichloropropene	50.0	49.5		ug/L		99	78 - 127	2	20
1,2,3-Trichlorobenzene	50.0	47.1		ug/L		94	61 - 151	1	40
1,2,3-Trichloropropane	50.0	48.9		ug/L		98	70 - 132	2	30
1,2,4-Trichlorobenzene	50.0	46.8		ug/L		94	77 - 131	3	20
1,2,4-Trimethylbenzene	50.0	50.8		ug/L		102	80 - 124	1	20
1,2-Dibromo-3-Chloropropane	50.0	46.9		ug/L		94	59 - 141	3	30
1,2-Dichlorobenzene	50.0	45.9		ug/L		92	80 - 120	2	20
1,2-Dichloroethane	50.0	46.6		ug/L		93	75 - 130	4	20
1,2-Dichloroethene, Total	100	98.8		ug/L		99	80 - 120	2	20
1,2-Dichloropropane	50.0	48.8		ug/L		98	80 - 123	3	20
1,3,5-Trimethylbenzene	50.0	50.7		ug/L		101	80 - 120	0	20
1,3-Dichlorobenzene	50.0	46.6		ug/L		93	80 - 120	1	20
1,3-Dichloropropane	50.0	48.5		ug/L		97	78 - 127	4	20
1,4-Dichlorobenzene	50.0	45.2		ug/L		90	80 - 120	2	20
2,2-Dichloropropane	50.0	51.8		ug/L		104	72 - 133	1	20
2-Chlorotoluene	50.0	49.0		ug/L		98	77 - 121	0	20
2-Hexanone	250	222		ug/L		89	70 - 141	3	40
4-Chlorotoluene	50.0	49.8		ug/L		100	80 - 120	2	20
Acetone	250	202		ug/L		81	60 - 154	3	40
Benzene	50.0	48.2		ug/L		96	73 - 131	1	30
Bromobenzene	50.0	51.9		ug/L		104	79 - 124	1	20
Bromochloromethane	50.0	48.8		ug/L		98	77 - 122	5	20
Bromoform	50.0	56.3		ug/L		113	69 - 135	3	20
Bromodichloromethane	50.0	48.1		ug/L		96	77 - 129	2	20
Bromomethane	50.0	52.5		ug/L		105	20 - 180	4	40
Carbon disulfide	50.0	48.9		ug/L		98	73 - 127	0	20

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

Lab Sample ID: LCSD 680-413474/5
Matrix: Water
Analysis Batch: 413474

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride			50.0	51.6		ug/L		103	75 - 130	0	20
Chlorobenzene			50.0	49.4		ug/L		99	80 - 120	0	20
Chloroethane			50.0	43.8		ug/L		88	50 - 151	1	30
Chloroform			50.0	47.5		ug/L		95	79 - 122	2	20
Chloromethane			50.0	49.4		ug/L		99	63 - 126	5	30
cis-1,2-Dichloroethene			50.0	47.0		ug/L		94	80 - 122	2	20
cis-1,3-Dichloropropene			50.0	49.2		ug/L		98	80 - 133	1	20
Dibromochloromethane			50.0	49.7		ug/L		99	71 - 136	1	20
Dibromomethane			50.0	46.2		ug/L		92	80 - 122	2	20
Dichlorodifluoromethane			50.0	50.5		ug/L		101	51 - 140	0	40
Ethylbenzene			50.0	49.2		ug/L		98	80 - 120	0	20
Hexachlorobutadiene			50.0	50.5		ug/L		101	77 - 129	1	30
Isopropylbenzene			50.0	51.3		ug/L		103	80 - 120	0	20
m-Xylene & p-Xylene			50.0	50.5		ug/L		101	80 - 120	0	20
Methyl tert-butyl ether			50.0	48.5		ug/L		97	74 - 135	2	20
Methylene Chloride			50.0	47.6		ug/L		95	76 - 129	0	20
Naphthalene			50.0	47.0		ug/L		94	69 - 148	0	40
4-Methyl-2-pentanone			250	226		ug/L		90	75 - 135	2	30
2-Butanone			250	223		ug/L		89	75 - 133	6	30
1,2-Dibromoethane			50.0	49.3		ug/L		99	77 - 131	3	30
n-Butylbenzene			50.0	48.0		ug/L		96	78 - 124	2	20
N-Propylbenzene			50.0	50.8		ug/L		102	80 - 120	1	20
o-Xylene			50.0	49.1		ug/L		98	80 - 120	1	20
p-Isopropyltoluene			50.0	47.4		ug/L		95	80 - 120	2	20
sec-Butylbenzene			50.0	51.6		ug/L		103	76 - 125	2	30
Styrene			50.0	52.1		ug/L		104	80 - 122	1	20
tert-Butylbenzene			50.0	51.5		ug/L		103	80 - 120	1	20
Tetrachloroethene			50.0	51.5		ug/L		103	77 - 123	3	20
Toluene			50.0	47.8		ug/L		96	80 - 122	1	20
trans-1,2-Dichloroethene			50.0	51.8		ug/L		104	78 - 123	2	20
trans-1,3-Dichloropropene			50.0	48.0		ug/L		96	74 - 140	2	20
Trichloroethene			50.0	50.8		ug/L		102	80 - 123	0	20
Trichlorofluoromethane			50.0	52.7		ug/L		105	58 - 145	4	30
Vinyl acetate			100	96.9		ug/L		97	15 - 190	2	50
Vinyl chloride			50.0	48.2		ug/L		96	68 - 132	1	30
Xylenes, Total			100	99.6		ug/L		100	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*
Dibromofluoromethane (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*

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

Lab Sample ID: MB 680-413575/12
Matrix: Water
Analysis Batch: 413575

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/09/15 14:18	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/09/15 14:18	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/09/15 14:18	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/09/15 14:18	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/09/15 14:18	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/09/15 14:18	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/09/15 14:18	1
2-Hexanone	10	U	10		ug/L			12/09/15 14:18	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/09/15 14:18	1
Acetone	10	U	10		ug/L			12/09/15 14:18	1
Benzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
Bromobenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
Bromochloromethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
Bromoform	1.0	U	1.0		ug/L			12/09/15 14:18	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
Bromomethane	5.0	U	5.0		ug/L			12/09/15 14:18	1
Carbon disulfide	2.0	U	2.0		ug/L			12/09/15 14:18	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/09/15 14:18	1
Chlorobenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
Chloroethane	5.0	U	5.0		ug/L			12/09/15 14:18	1
Chloroform	1.0	U	1.0		ug/L			12/09/15 14:18	1
Chloromethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/09/15 14:18	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/09/15 14:18	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
Dibromomethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
Ethylbenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/09/15 14:18	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/09/15 14:18	1
Methyl tert-butyl ether	10	U	10		ug/L			12/09/15 14:18	1
Methylene Chloride	5.0	U	5.0		ug/L			12/09/15 14:18	1

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

Lab Sample ID: MB 680-413575/12
Matrix: Water
Analysis Batch: 413575

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	5.0	U	5.0		ug/L			12/09/15 14:18	1
4-Methyl-2-pentanone	10	U	10		ug/L			12/09/15 14:18	1
2-Butanone	10	U	10		ug/L			12/09/15 14:18	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
o-Xylene	1.0	U	1.0		ug/L			12/09/15 14:18	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/09/15 14:18	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
Styrene	1.0	U	1.0		ug/L			12/09/15 14:18	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/09/15 14:18	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/09/15 14:18	1
Toluene	1.0	U	1.0		ug/L			12/09/15 14:18	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/09/15 14:18	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/09/15 14:18	1
Trichloroethene	1.0	U	1.0		ug/L			12/09/15 14:18	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/09/15 14:18	1
Vinyl acetate	2.0	U	2.0		ug/L			12/09/15 14:18	1
Vinyl chloride	1.0	U	1.0		ug/L			12/09/15 14:18	1
Xylenes, Total	1.0	U	1.0		ug/L			12/09/15 14:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*70 - 130*		*12/09/15 14:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*		*12/09/15 14:18*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*		*12/09/15 14:18*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*12/09/15 14:18*	*1*

Lab Sample ID: LCS 680-413575/4
Matrix: Water
Analysis Batch: 413575

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	52.9		ug/L		106	80 - 120
1,1,1-Trichloroethane	50.0	52.8		ug/L		106	74 - 128
1,1,2,2-Tetrachloroethane	50.0	51.3		ug/L		103	72 - 128
1,1,2-Trichloroethane	50.0	48.9		ug/L		98	79 - 125
1,1-Dichloroethane	50.0	49.3		ug/L		99	80 - 120
1,1-Dichloroethene	50.0	52.1		ug/L		104	74 - 125
1,1-Dichloropropene	50.0	52.0		ug/L		104	78 - 127
1,2,3-Trichlorobenzene	50.0	60.5		ug/L		121	61 - 151
1,2,3-Trichloropropane	50.0	52.5		ug/L		105	70 - 132
1,2,4-Trichlorobenzene	50.0	59.9		ug/L		120	77 - 131
1,2,4-Trimethylbenzene	50.0	55.5		ug/L		111	80 - 124
1,2-Dibromo-3-Chloropropane	50.0	58.2		ug/L		116	59 - 141
1,2-Dichlorobenzene	50.0	50.3		ug/L		101	80 - 120
1,2-Dichloroethane	50.0	49.0		ug/L		98	75 - 130
1,2-Dichloroethene, Total	100	103		ug/L		103	80 - 120
1,2-Dichloropropane	50.0	50.2		ug/L		100	80 - 123

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

Lab Sample ID: LCS 680-413575/4
Matrix: Water
Analysis Batch: 413575

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	55.6		ug/L		111	80 - 120
1,3-Dichlorobenzene	50.0	49.5		ug/L		99	80 - 120
1,3-Dichloropropane	50.0	50.1		ug/L		100	78 - 127
1,4-Dichlorobenzene	50.0	53.4		ug/L		107	80 - 120
2,2-Dichloropropane	50.0	55.5		ug/L		111	72 - 133
2-Chlorotoluene	50.0	51.8		ug/L		104	77 - 121
2-Hexanone	250	253		ug/L		101	70 - 141
4-Chlorotoluene	50.0	52.7		ug/L		105	80 - 120
Acetone	250	243		ug/L		97	60 - 154
Benzene	50.0	50.2		ug/L		100	73 - 131
Bromobenzene	50.0	51.9		ug/L		104	79 - 124
Bromochloromethane	50.0	50.9		ug/L		102	77 - 122
Bromoform	50.0	58.0		ug/L		116	69 - 135
Bromodichloromethane	50.0	51.2		ug/L		102	77 - 129
Bromomethane	50.0	48.8		ug/L		98	20 - 180
Carbon disulfide	50.0	50.7		ug/L		101	73 - 127
Carbon tetrachloride	50.0	54.7		ug/L		109	75 - 130
Chlorobenzene	50.0	49.4		ug/L		99	80 - 120
Chloroethane	50.0	51.8		ug/L		104	50 - 151
Chloroform	50.0	51.6		ug/L		103	79 - 122
Chloromethane	50.0	52.8		ug/L		106	63 - 126
cis-1,2-Dichloroethene	50.0	51.7		ug/L		103	80 - 122
cis-1,3-Dichloropropene	50.0	54.8		ug/L		110	80 - 133
Dibromochloromethane	50.0	52.5		ug/L		105	71 - 136
Dibromomethane	50.0	50.0		ug/L		100	80 - 122
Dichlorodifluoromethane	50.0	57.1		ug/L		114	51 - 140
Ethylbenzene	50.0	52.5		ug/L		105	80 - 120
Hexachlorobutadiene	50.0	55.9		ug/L		112	77 - 129
Isopropylbenzene	50.0	56.1		ug/L		112	80 - 120
m-Xylene & p-Xylene	50.0	53.6		ug/L		107	80 - 120
Methyl tert-butyl ether	50.0	52.2		ug/L		104	74 - 135
Methylene Chloride	50.0	50.7		ug/L		101	76 - 129
Naphthalene	50.0	61.5		ug/L		123	69 - 148
4-Methyl-2-pentanone	250	253		ug/L		101	75 - 135
2-Butanone	250	237		ug/L		95	75 - 133
1,2-Dibromoethane	50.0	50.3		ug/L		101	77 - 131
n-Butylbenzene	50.0	51.2		ug/L		102	78 - 124
N-Propylbenzene	50.0	55.3		ug/L		111	80 - 120
o-Xylene	50.0	53.1		ug/L		106	80 - 120
p-Isopropyltoluene	50.0	55.9		ug/L		112	80 - 120
sec-Butylbenzene	50.0	56.1		ug/L		112	76 - 125
Styrene	50.0	54.4		ug/L		109	80 - 122
tert-Butylbenzene	50.0	55.9		ug/L		112	80 - 120
Tetrachloroethene	50.0	51.5		ug/L		103	77 - 123
Toluene	50.0	51.7		ug/L		103	80 - 122
trans-1,2-Dichloroethene	50.0	51.7		ug/L		103	78 - 123
trans-1,3-Dichloropropene	50.0	52.5		ug/L		105	74 - 140
Trichloroethene	50.0	51.4		ug/L		103	80 - 123

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

Lab Sample ID: LCS 680-413575/4
Matrix: Water
Analysis Batch: 413575

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	53.4		ug/L		107	58 - 145
Vinyl acetate	100	136		ug/L		136	15 - 190
Vinyl chloride	50.0	52.4		ug/L		105	68 - 132
Xylenes, Total	100	107		ug/L		107	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*
Dibromofluoromethane (Surr)	*103*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: LCSD 680-413575/5
Matrix: Water
Analysis Batch: 413575

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	51.6		ug/L		103	80 - 120	2	20
1,1,1-Trichloroethane	50.0	53.2		ug/L		106	74 - 128	1	20
1,1,2,2-Tetrachloroethane	50.0	49.8		ug/L		100	72 - 128	3	20
1,1,2-Trichloroethane	50.0	47.3		ug/L		95	79 - 125	3	20
1,1-Dichloroethane	50.0	49.0		ug/L		98	80 - 120	1	20
1,1-Dichloroethene	50.0	53.4		ug/L		107	74 - 125	3	20
1,1-Dichloropropene	50.0	51.6		ug/L		103	78 - 127	1	20
1,2,3-Trichlorobenzene	50.0	67.3		ug/L		135	61 - 151	11	40
1,2,3-Trichloropropane	50.0	45.3		ug/L		91	70 - 132	15	30
1,2,4-Trichlorobenzene	50.0	62.9		ug/L		126	77 - 131	5	20
1,2,4-Trimethylbenzene	50.0	55.1		ug/L		110	80 - 124	1	20
1,2-Dibromo-3-Chloropropane	50.0	61.1		ug/L		122	59 - 141	5	30
1,2-Dichlorobenzene	50.0	49.2		ug/L		98	80 - 120	2	20
1,2-Dichloroethane	50.0	48.0		ug/L		96	75 - 130	2	20
1,2-Dichloroethene, Total	100	104		ug/L		104	80 - 120	1	20
1,2-Dichloropropane	50.0	50.4		ug/L		101	80 - 123	0	20
1,3,5-Trimethylbenzene	50.0	56.0		ug/L		112	80 - 120	1	20
1,3-Dichlorobenzene	50.0	49.5		ug/L		99	80 - 120	0	20
1,3-Dichloropropane	50.0	48.9		ug/L		98	78 - 127	2	20
1,4-Dichlorobenzene	50.0	53.1		ug/L		106	80 - 120	1	20
2,2-Dichloropropane	50.0	56.3		ug/L		113	72 - 133	1	20
2-Chlorotoluene	50.0	52.1		ug/L		104	77 - 121	1	20
2-Hexanone	250	248		ug/L		99	70 - 141	2	40
4-Chlorotoluene	50.0	53.1		ug/L		106	80 - 120	1	20
Acetone	250	243		ug/L		97	60 - 154	0	40
Benzene	50.0	50.4		ug/L		101	73 - 131	0	30
Bromobenzene	50.0	50.8		ug/L		102	79 - 124	2	20
Bromochloromethane	50.0	49.5		ug/L		99	77 - 122	3	20
Bromoform	50.0	56.3		ug/L		113	69 - 135	3	20
Bromodichloromethane	50.0	50.9		ug/L		102	77 - 129	1	20
Bromomethane	50.0	49.6		ug/L		99	20 - 180	2	40
Carbon disulfide	50.0	52.2		ug/L		104	73 - 127	3	20

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

Lab Sample ID: LCSD 680-413575/5
Matrix: Water
Analysis Batch: 413575

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride			50.0	55.6		ug/L		111	75 - 130	2	20
Chlorobenzene			50.0	50.3		ug/L		101	80 - 120	2	20
Chloroethane			50.0	52.7		ug/L		105	50 - 151	2	30
Chloroform			50.0	50.9		ug/L		102	79 - 122	2	20
Chloromethane			50.0	54.1		ug/L		108	63 - 126	2	30
cis-1,2-Dichloroethene			50.0	51.5		ug/L		103	80 - 122	0	20
cis-1,3-Dichloropropene			50.0	54.4		ug/L		109	80 - 133	1	20
Dibromochloromethane			50.0	51.7		ug/L		103	71 - 136	2	20
Dibromomethane			50.0	48.1		ug/L		96	80 - 122	4	20
Dichlorodifluoromethane			50.0	59.0		ug/L		118	51 - 140	3	40
Ethylbenzene			50.0	53.1		ug/L		106	80 - 120	1	20
Hexachlorobutadiene			50.0	58.2		ug/L		116	77 - 129	4	30
Isopropylbenzene			50.0	56.5		ug/L		113	80 - 120	1	20
m-Xylene & p-Xylene			50.0	54.2		ug/L		108	80 - 120	1	20
Methyl tert-butyl ether			50.0	50.8		ug/L		102	74 - 135	3	20
Methylene Chloride			50.0	51.3		ug/L		103	76 - 129	1	20
Naphthalene			50.0	69.4		ug/L		139	69 - 148	12	40
4-Methyl-2-pentanone			250	250		ug/L		100	75 - 135	1	30
2-Butanone			250	244		ug/L		97	75 - 133	3	30
1,2-Dibromoethane			50.0	49.3		ug/L		99	77 - 131	2	30
n-Butylbenzene			50.0	53.1		ug/L		106	78 - 124	4	20
N-Propylbenzene			50.0	55.7		ug/L		111	80 - 120	1	20
o-Xylene			50.0	52.5		ug/L		105	80 - 120	1	20
p-Isopropyltoluene			50.0	56.0		ug/L		112	80 - 120	0	20
sec-Butylbenzene			50.0	56.4		ug/L		113	76 - 125	1	30
Styrene			50.0	54.8		ug/L		110	80 - 122	1	20
tert-Butylbenzene			50.0	55.9		ug/L		112	80 - 120	0	20
Tetrachloroethene			50.0	51.0		ug/L		102	77 - 123	1	20
Toluene			50.0	51.6		ug/L		103	80 - 122	0	20
trans-1,2-Dichloroethene			50.0	52.7		ug/L		105	78 - 123	2	20
trans-1,3-Dichloropropene			50.0	52.0		ug/L		104	74 - 140	1	20
Trichloroethene			50.0	52.4		ug/L		105	80 - 123	2	20
Trichlorofluoromethane			50.0	54.3		ug/L		109	58 - 145	2	30
Vinyl acetate			100	132		ug/L		132	15 - 190	3	50
Vinyl chloride			50.0	54.4		ug/L		109	68 - 132	4	30
Xylenes, Total			100	107		ug/L		107	80 - 120	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*103*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

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

Lab Sample ID: MB 680-414262/9
Matrix: Water
Analysis Batch: 414262

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/14/15 12:25	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/14/15 12:25	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/14/15 12:25	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/14/15 12:25	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/14/15 12:25	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/14/15 12:25	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/14/15 12:25	1
2-Hexanone	10	U	10		ug/L			12/14/15 12:25	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/14/15 12:25	1
Acetone	10	U	10		ug/L			12/14/15 12:25	1
Benzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
Bromobenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
Bromochloromethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
Bromoform	1.0	U	1.0		ug/L			12/14/15 12:25	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
Bromomethane	5.0	U	5.0		ug/L			12/14/15 12:25	1
Carbon disulfide	2.0	U	2.0		ug/L			12/14/15 12:25	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/14/15 12:25	1
Chlorobenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
Chloroethane	5.0	U	5.0		ug/L			12/14/15 12:25	1
Chloroform	1.0	U	1.0		ug/L			12/14/15 12:25	1
Chloromethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/14/15 12:25	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/14/15 12:25	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
Dibromomethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
Ethylbenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/14/15 12:25	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/14/15 12:25	1
Methyl tert-butyl ether	10	U	10		ug/L			12/14/15 12:25	1
Methylene Chloride	5.0	U	5.0		ug/L			12/14/15 12:25	1

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

Lab Sample ID: MB 680-414262/9
Matrix: Water
Analysis Batch: 414262

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	5.0	U	5.0		ug/L			12/14/15 12:25	1
4-Methyl-2-pentanone	10	U	10		ug/L			12/14/15 12:25	1
2-Butanone	10	U	10		ug/L			12/14/15 12:25	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
o-Xylene	1.0	U	1.0		ug/L			12/14/15 12:25	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/14/15 12:25	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
Styrene	1.0	U	1.0		ug/L			12/14/15 12:25	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/14/15 12:25	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/14/15 12:25	1
Toluene	1.0	U	1.0		ug/L			12/14/15 12:25	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/14/15 12:25	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/14/15 12:25	1
Trichloroethene	1.0	U	1.0		ug/L			12/14/15 12:25	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/14/15 12:25	1
Vinyl acetate	2.0	U	2.0		ug/L			12/14/15 12:25	1
Vinyl chloride	1.0	U	1.0		ug/L			12/14/15 12:25	1
Xylenes, Total	1.0	U	1.0		ug/L			12/14/15 12:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*70 - 130*		*12/14/15 12:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*		*12/14/15 12:25*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*12/14/15 12:25*	*1*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*		*12/14/15 12:25*	*1*

Lab Sample ID: LCS 680-414262/4
Matrix: Water
Analysis Batch: 414262

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	52.2		ug/L		104	80 - 120
1,1,1-Trichloroethane	50.0	53.9		ug/L		108	74 - 128
1,1,2,2-Tetrachloroethane	50.0	50.1		ug/L		100	72 - 128
1,1,2-Trichloroethane	50.0	49.5		ug/L		99	79 - 125
1,1-Dichloroethane	50.0	50.7		ug/L		101	80 - 120
1,1-Dichloroethene	50.0	49.5		ug/L		99	74 - 125
1,1-Dichloropropene	50.0	50.6		ug/L		101	78 - 127
1,2,3-Trichlorobenzene	50.0	64.0		ug/L		128	61 - 151
1,2,3-Trichloropropane	50.0	51.8		ug/L		104	70 - 132
1,2,4-Trichlorobenzene	50.0	63.1		ug/L		126	77 - 131
1,2,4-Trimethylbenzene	50.0	55.5		ug/L		111	80 - 124
1,2-Dibromo-3-Chloropropane	50.0	63.5		ug/L		127	59 - 141
1,2-Dichlorobenzene	50.0	50.0		ug/L		100	80 - 120
1,2-Dichloroethane	50.0	51.4		ug/L		103	75 - 130
1,2-Dichloroethene, Total	100	102		ug/L		102	80 - 120
1,2-Dichloropropane	50.0	50.0		ug/L		100	80 - 123

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

Lab Sample ID: LCS 680-414262/4
Matrix: Water
Analysis Batch: 414262

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	55.8		ug/L		112	80 - 120
1,3-Dichlorobenzene	50.0	50.6		ug/L		101	80 - 120
1,3-Dichloropropane	50.0	49.5		ug/L		99	78 - 127
1,4-Dichlorobenzene	50.0	54.2		ug/L		108	80 - 120
2,2-Dichloropropane	50.0	60.5		ug/L		121	72 - 133
2-Chlorotoluene	50.0	50.1		ug/L		100	77 - 121
2-Hexanone	250	290		ug/L		116	70 - 141
4-Chlorotoluene	50.0	50.9		ug/L		102	80 - 120
Acetone	250	237		ug/L		95	60 - 154
Benzene	50.0	50.6		ug/L		101	73 - 131
Bromobenzene	50.0	50.6		ug/L		101	79 - 124
Bromochloromethane	50.0	50.3		ug/L		101	77 - 122
Bromoform	50.0	55.3		ug/L		111	69 - 135
Bromodichloromethane	50.0	52.3		ug/L		105	77 - 129
Bromomethane	50.0	53.1		ug/L		106	20 - 180
Carbon disulfide	50.0	50.3		ug/L		101	73 - 127
Carbon tetrachloride	50.0	52.7		ug/L		105	75 - 130
Chlorobenzene	50.0	48.7		ug/L		97	80 - 120
Chloroethane	50.0	52.4		ug/L		105	50 - 151
Chloroform	50.0	51.4		ug/L		103	79 - 122
Chloromethane	50.0	56.0		ug/L		112	63 - 126
cis-1,2-Dichloroethene	50.0	53.1		ug/L		106	80 - 122
cis-1,3-Dichloropropene	50.0	55.1		ug/L		110	80 - 133
Dibromochloromethane	50.0	53.7		ug/L		107	71 - 136
Dibromomethane	50.0	49.3		ug/L		99	80 - 122
Dichlorodifluoromethane	50.0	48.7		ug/L		97	51 - 140
Ethylbenzene	50.0	52.0		ug/L		104	80 - 120
Hexachlorobutadiene	50.0	55.2		ug/L		110	77 - 129
Isopropylbenzene	50.0	55.6		ug/L		111	80 - 120
m-Xylene & p-Xylene	50.0	53.3		ug/L		107	80 - 120
Methyl tert-butyl ether	50.0	53.7		ug/L		107	74 - 135
Methylene Chloride	50.0	50.6		ug/L		101	76 - 129
Naphthalene	50.0	64.8		ug/L		130	69 - 148
4-Methyl-2-pentanone	250	287		ug/L		115	75 - 135
2-Butanone	250	251		ug/L		100	75 - 133
1,2-Dibromoethane	50.0	49.8		ug/L		100	77 - 131
n-Butylbenzene	50.0	52.6		ug/L		105	78 - 124
N-Propylbenzene	50.0	53.9		ug/L		108	80 - 120
o-Xylene	50.0	52.9		ug/L		106	80 - 120
p-Isopropyltoluene	50.0	55.3		ug/L		111	80 - 120
sec-Butylbenzene	50.0	55.1		ug/L		110	76 - 125
Styrene	50.0	55.2		ug/L		110	80 - 122
tert-Butylbenzene	50.0	53.6		ug/L		107	80 - 120
Tetrachloroethene	50.0	50.5		ug/L		101	77 - 123
Toluene	50.0	50.0		ug/L		100	80 - 122
trans-1,2-Dichloroethene	50.0	49.3		ug/L		99	78 - 123
trans-1,3-Dichloropropene	50.0	55.1		ug/L		110	74 - 140
Trichloroethene	50.0	51.0		ug/L		102	80 - 123

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

Lab Sample ID: LCS 680-414262/4
Matrix: Water
Analysis Batch: 414262

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	50.1		ug/L		100	58 - 145
Vinyl acetate	100	138		ug/L		138	15 - 190
Vinyl chloride	50.0	52.3		ug/L		105	68 - 132
Xylenes, Total	100	106		ug/L		106	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Dibromofluoromethane (Surr)	*103*		*70 - 130*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: LCSD 680-414262/5
Matrix: Water
Analysis Batch: 414262

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	54.2		ug/L		108	80 - 120	4	20
1,1,1-Trichloroethane	50.0	51.4		ug/L		103	74 - 128	5	20
1,1,2,2-Tetrachloroethane	50.0	52.5		ug/L		105	72 - 128	5	20
1,1,2-Trichloroethane	50.0	48.4		ug/L		97	79 - 125	2	20
1,1-Dichloroethane	50.0	49.4		ug/L		99	80 - 120	3	20
1,1-Dichloroethene	50.0	47.9		ug/L		96	74 - 125	3	20
1,1-Dichloropropene	50.0	49.5		ug/L		99	78 - 127	2	20
1,2,3-Trichlorobenzene	50.0	72.0		ug/L		144	61 - 151	12	40
1,2,3-Trichloropropane	50.0	53.3		ug/L		107	70 - 132	3	30
1,2,4-Trichlorobenzene	50.0	65.7		ug/L		131	77 - 131	4	20
1,2,4-Trimethylbenzene	50.0	56.1		ug/L		112	80 - 124	1	20
1,2-Dibromo-3-Chloropropane	50.0	65.3		ug/L		131	59 - 141	3	30
1,2-Dichlorobenzene	50.0	51.2		ug/L		102	80 - 120	2	20
1,2-Dichloroethane	50.0	51.3		ug/L		103	75 - 130	0	20
1,2-Dichloroethene, Total	100	99.7		ug/L		100	80 - 120	3	20
1,2-Dichloropropane	50.0	49.3		ug/L		99	80 - 123	1	20
1,3,5-Trimethylbenzene	50.0	55.7		ug/L		111	80 - 120	0	20
1,3-Dichlorobenzene	50.0	50.8		ug/L		102	80 - 120	0	20
1,3-Dichloropropane	50.0	48.8		ug/L		98	78 - 127	2	20
1,4-Dichlorobenzene	50.0	55.7		ug/L		111	80 - 120	3	20
2,2-Dichloropropane	50.0	57.6		ug/L		115	72 - 133	5	20
2-Chlorotoluene	50.0	51.8		ug/L		104	77 - 121	3	20
2-Hexanone	250	287		ug/L		115	70 - 141	1	40
4-Chlorotoluene	50.0	51.8		ug/L		104	80 - 120	2	20
Acetone	250	236		ug/L		94	60 - 154	0	40
Benzene	50.0	49.8		ug/L		100	73 - 131	2	30
Bromobenzene	50.0	51.5		ug/L		103	79 - 124	2	20
Bromochloromethane	50.0	50.1		ug/L		100	77 - 122	0	20
Bromoform	50.0	55.4		ug/L		111	69 - 135	0	20
Bromodichloromethane	50.0	52.2		ug/L		104	77 - 129	0	20
Bromomethane	50.0	51.0		ug/L		102	20 - 180	4	40
Carbon disulfide	50.0	48.6		ug/L		97	73 - 127	3	20

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

Lab Sample ID: LCSD 680-414262/5
Matrix: Water
Analysis Batch: 414262

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride			50.0	51.9		ug/L		104	75 - 130	1	20
Chlorobenzene			50.0	49.2		ug/L		98	80 - 120	1	20
Chloroethane			50.0	52.1		ug/L		104	50 - 151	1	30
Chloroform			50.0	50.2		ug/L		100	79 - 122	2	20
Chloromethane			50.0	55.2		ug/L		110	63 - 126	1	30
cis-1,2-Dichloroethene			50.0	52.0		ug/L		104	80 - 122	2	20
cis-1,3-Dichloropropene			50.0	53.4		ug/L		107	80 - 133	3	20
Dibromochloromethane			50.0	54.0		ug/L		108	71 - 136	1	20
Dibromomethane			50.0	50.0		ug/L		100	80 - 122	1	20
Dichlorodifluoromethane			50.0	46.2		ug/L		92	51 - 140	5	40
Ethylbenzene			50.0	52.3		ug/L		105	80 - 120	1	20
Hexachlorobutadiene			50.0	57.7		ug/L		115	77 - 129	4	30
Isopropylbenzene			50.0	55.0		ug/L		110	80 - 120	1	20
m-Xylene & p-Xylene			50.0	52.9		ug/L		106	80 - 120	1	20
Methyl tert-butyl ether			50.0	53.2		ug/L		106	74 - 135	1	20
Methylene Chloride			50.0	49.2		ug/L		98	76 - 129	3	20
Naphthalene			50.0	75.0	*	ug/L		150	69 - 148	15	40
4-Methyl-2-pentanone			250	285		ug/L		114	75 - 135	0	30
2-Butanone			250	240		ug/L		96	75 - 133	4	30
1,2-Dibromoethane			50.0	50.3		ug/L		101	77 - 131	1	30
n-Butylbenzene			50.0	51.8		ug/L		104	78 - 124	1	20
N-Propylbenzene			50.0	53.6		ug/L		107	80 - 120	0	20
o-Xylene			50.0	53.1		ug/L		106	80 - 120	0	20
p-Isopropyltoluene			50.0	56.1		ug/L		112	80 - 120	1	20
sec-Butylbenzene			50.0	54.9		ug/L		110	76 - 125	0	30
Styrene			50.0	55.3		ug/L		111	80 - 122	0	20
tert-Butylbenzene			50.0	53.7		ug/L		107	80 - 120	0	20
Tetrachloroethene			50.0	48.8		ug/L		98	77 - 123	3	20
Toluene			50.0	50.4		ug/L		101	80 - 122	1	20
trans-1,2-Dichloroethene			50.0	47.7		ug/L		95	78 - 123	3	20
trans-1,3-Dichloropropene			50.0	54.6		ug/L		109	74 - 140	1	20
Trichloroethene			50.0	49.9		ug/L		100	80 - 123	2	20
Trichlorofluoromethane			50.0	48.5		ug/L		97	58 - 145	3	30
Vinyl acetate			100	133		ug/L		133	15 - 190	4	50
Vinyl chloride			50.0	50.3		ug/L		101	68 - 132	4	30
Xylenes, Total			100	106		ug/L		106	80 - 120	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*
Dibromofluoromethane (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

GC/MS VOA

Analysis Batch: 413396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-119707-9	MWW-53	Total/NA	Water	8260B	
680-119707-10	MWW-38	Total/NA	Water	8260B	
680-119707-11	MWW-33	Total/NA	Water	8260B	
680-119707-12	Dup-01	Total/NA	Water	8260B	
680-119707-14	MWW-15D	Total/NA	Water	8260B	
680-119707-15	MWW-45	Total/NA	Water	8260B	
680-119707-16	MWW-51D	Total/NA	Water	8260B	
680-119707-17	MWW-34	Total/NA	Water	8260B	
680-119707-18	MWW-43	Total/NA	Water	8260B	
LCS 680-413396/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-413396/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-413396/9	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 413474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-119707-1	MWW-46I	Total/NA	Water	8260B	
680-119707-2	MWW-48	Total/NA	Water	8260B	
680-119707-3	MWW-47I	Total/NA	Water	8260B	
680-119707-4	MWW-57I	Total/NA	Water	8260B	
680-119707-5	MWW-49D	Total/NA	Water	8260B	
680-119707-6	MWW-52	Total/NA	Water	8260B	
LCS 680-413474/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-413474/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-413474/9	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 413575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-119707-13	MWW-37	Total/NA	Water	8260B	
LCS 680-413575/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-413575/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-413575/12	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 414262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-119707-7	MWW-50D	Total/NA	Water	8260B	
680-119707-8	RW-2	Total/NA	Water	8260B	
LCS 680-414262/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-414262/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-414262/9	Method Blank	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-46I — Lab Sample ID: 680-119707-1

Date Collected: 12/01/15 13:00 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	413474	12/08/15 16:51	CEJ	TAL SAV

Client Sample ID: MWW-48 — Lab Sample ID: 680-119707-2

Date Collected: 12/01/15 15:56 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	413474	12/08/15 17:13	CEJ	TAL SAV

Client Sample ID: MWW-47I — Lab Sample ID: 680-119707-3

Date Collected: 12/01/15 11:47 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	413474	12/08/15 17:36	CEJ	TAL SAV

Client Sample ID: MWW-57I — Lab Sample ID: 680-119707-4

Date Collected: 12/01/15 14:42 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	413474	12/08/15 17:59	CEJ	TAL SAV

Client Sample ID: MWW-49D — Lab Sample ID: 680-119707-5

Date Collected: 12/01/15 12:25 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	413474	12/08/15 18:22	CEJ	TAL SAV

Client Sample ID: MWW-52 — Lab Sample ID: 680-119707-6

Date Collected: 12/01/15 16:20 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	413474	12/08/15 18:45	CEJ	TAL SAV

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-50D — Lab Sample ID: 680-119707-7

Date Collected: 12/02/15 11:15 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	414262	12/14/15 14:56	RWB	TAL SAV

Client Sample ID: RW-2 — Lab Sample ID: 680-119707-8

Date Collected: 12/02/15 14:30 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	414262	12/14/15 15:17	RWB	TAL SAV

Client Sample ID: MWW-53 — Lab Sample ID: 680-119707-9

Date Collected: 12/02/15 10:52 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	413396	12/08/15 13:16	CEJ	TAL SAV

Client Sample ID: MWW-38 — Lab Sample ID: 680-119707-10

Date Collected: 12/02/15 12:15 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	413396	12/08/15 14:42	CEJ	TAL SAV

Client Sample ID: MWW-33 — Lab Sample ID: 680-119707-11

Date Collected: 12/02/15 16:15 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		200	413396	12/08/15 13:37	CEJ	TAL SAV

Client Sample ID: Dup-01 — Lab Sample ID: 680-119707-12

Date Collected: 12/02/15 00:00 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		200	413396	12/08/15 13:59	CEJ	TAL SAV

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Client Sample ID: MWW-37 — Lab Sample ID: 680-119707-13

Date Collected: 12/02/15 15:50 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	413575	12/09/15 17:32	RWB	TAL SAV

Client Sample ID: MWW-15D — Lab Sample ID: 680-119707-14

Date Collected: 12/03/15 09:30 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	413396	12/08/15 16:51	CEJ	TAL SAV

Client Sample ID: MWW-45 — Lab Sample ID: 680-119707-15

Date Collected: 12/03/15 10:12 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	413396	12/08/15 17:12	CEJ	TAL SAV

Client Sample ID: MWW-51D — Lab Sample ID: 680-119707-16

Date Collected: 12/03/15 12:00 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	413396	12/08/15 15:46	CEJ	TAL SAV

Client Sample ID: MWW-34 — Lab Sample ID: 680-119707-17

Date Collected: 12/03/15 13:24 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	413396	12/08/15 16:08	CEJ	TAL SAV

Client Sample ID: MWW-43 — Lab Sample ID: 680-119707-18

Date Collected: 12/03/15 14:35 — **Matrix: Water**
Date Received: 12/04/15 09:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	413396	12/08/15 16:29	CEJ	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jim Shilliday	Site Contact: Dave Twamley	Date:	COC No:
ARCADIS	Tel/Fax: 919-854-1282	Lab Contact: Jerry Lanier	Carrier: Fed Ex	1 of 2 COCs
801 Corporate Center Drive, Suite 300	Analysis Turnaround Time			Job No.
Raleigh, NC 27607	Calendar (C) or Work Days (W) _____			
919-854-1282	TAT if different from Below _____			
919-854-5448	■ 2 weeks			SDG No.
Project Name: Brenntag Durham - Annual GW Monitoring	☐ 1 week			
Site: Brenntag Durham Facility	☐ 2 days			
P O # NC000368.0025.00001	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs + Acetone (Method 8260B)	Sample Specific Notes:
MWW-46I	12/01/15	1300	Grab	GW	3	N	X	
MWW-48	12/01/15	15:56	↓	↓	↓		X	
MWW-47I	12/01/15	11:47	↓	↓	↓		X	
MWW-57I	12/01/15	14:42	↓	↓	↓		X	
MWW-49D	12/01/15	12:25	↓	↓	↓		X	
MWW-52	12/01/15	16:20	↓	↓	↓		X	
MWW-50D	12/02/15	11:15	↓	↓	↓		X	
RW-2	12/02/15	14:30	↓	↓	↓		X	
MWW-53	12/02/15	10:52	↓	↓	↓		X	
MWW-38	12/02/15	12:15	↓	↓	↓		X	
MWW-33	12/02/15	16:15	↓	↓	↓		X	
Dup-01	12/02/15	--	↓	↓	↓		X	
							2	

680-119707 Chain of Custody

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

Possible Hazard Identification
☐ *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:

2.0/2.4

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	ARCADIS	12/03/15 16:15	Fed Ex	- -	12/03/15 16:15
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[signature]	TA	12/4/15 0909
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				-	

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jim Shilliday	Site Contact: Dave Twamley	Date:	COC No:
ARCADIS	Tel/Fax: 919-854-1282	Lab Contact: Jerry Lanier	Carrier: Fed Ex	2 of 2 COCs
801 Corporate Center Drive, Suite 300	Analysis Turnaround Time			Job No.
Raleigh, NC 27607	Calendar (C) or Work Days (W) _____			
919-854-1282	TAT if different from Below _____			
919-854-5448	■ 2 weeks			SDG No.
Project Name: Brenntag Durham - Annual GW Monitoring	☐ 1 week			
Site: Brenntag Durham Facility	☐ 2 days			
P O # NC000368.0025.00001	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample:	VOCs + Acetone (Method 8260B)	Sample Specific Notes:
MWW-37	12/03/15	15:50	Grab	GW	3	N	X	
MWW-15D	12/03/15	09:30	↓	↓	↓		X	
MWW-45	12/03/15	10:12	↓	↓	↓		X	
MWW-51D	12/03/15	12:00	↓	↓	↓		X	
MWW-34	12/03/15	13:24	↓	↓	↓		X	
MWW-43	12/03/15	14:35	↓	↓	↓		X	
							2	

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

Possible Hazard Identification
☐ *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:

2.0/2.4

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	ARCADIS	12/03/15 16:15	Fed Ex	--	12/03/15 16:15
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TA	Date/Time: 12/4/15 0909
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-119707-1

Login Number: 119707
List Number: 1
Creator: Kirkland, Keyon A

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham Annual GW Monitoring

TestAmerica Job ID: 680-119707-1

Laboratory: TestAmerica Savannah

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

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-17
A2LA	ISO/IEC 17025		399.01	02-28-17
Alabama	State Program	4	41450	06-30-16
Arkansas DEQ	State Program	6	88-0692	01-31-16 *
California	State Program	9	2939	07-31-16
Colorado	State Program	8	N/A	12-31-15 *
Connecticut	State Program	1	PH-0161	03-31-17
Florida	NELAP	4	E87052	06-30-16
GA Dept. of Agriculture	State Program	4	N/A	06-12-17
Georgia	State Program	4	803	06-30-16
Guam	State Program	9	14-004r	04-16-16
Hawaii	State Program	9	N/A	06-30-16
Illinois	NELAP	5	200022	11-30-15 *
Indiana	State Program	5	N/A	06-30-16
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-15 *
Kentucky (UST)	State Program	4	18	06-30-16
Kentucky (WW)	State Program	4	90084	12-31-15 *
Louisiana	NELAP	6	30690	06-30-16
Louisiana (DW)	NELAP	6	LA150014	12-31-15 *
Maine	State Program	1	GA00006	09-24-16
Maryland	State Program	3	250	12-31-15 *
Massachusetts	State Program	1	M-GA006	06-30-16
Michigan	State Program	5	9925	03-05-16
Mississippi	State Program	4	N/A	06-30-15 *
Montana	State Program	8	CERT0081	12-31-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-16
New Jersey	NELAP	2	GA769	06-30-16
New Mexico	State Program	6	N/A	06-30-16
New York	NELAP	2	10842	03-31-16
North Carolina (DW)	State Program	4	13701	07-31-16
North Carolina (WW/SW)	State Program	4	269	12-31-15 *
Oklahoma	State Program	6	9984	08-31-16
Pennsylvania	NELAP	3	68-00474	06-30-16
Puerto Rico	State Program	2	GA00006	12-31-15 *
South Carolina	State Program	4	98001	06-30-16
Tennessee	State Program	4	TN02961	06-30-16
Texas	NELAP	6	T104704185-14-7	11-30-16
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-16
Washington	State Program	10	C805	06-10-16
West Virginia (DW)	State Program	3	9950C	12-31-15 *
West Virginia DEP	State Program	3	094	06-30-16
Wisconsin	State Program	5	999819810	08-31-16
Wyoming	State Program	8	8TMS-L	06-30-16

* Certification renewal pending - certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-120130-1
Client Project/Site: Brenntag Durham - Annual GW Monitoring

For:
ARCADIS U.S., Inc.
801 Corporate Center Drive
Suite 300
Raleigh, North Carolina 27607-5073

Attn: Mr. Jim Shilliday

Authorized for release by:
12/30/2015 1:48:06 PM

Jerry Lanier, Project Manager I
(912)354-7858 e.3410
jerry.lanier@testamericainc.com

LINKS

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Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 680-120130-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Brenntag Durham - Annual GW Monitoring

Report Number: 680-120130-1

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 the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 12/16/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.6 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples RW-10 (680-120130-1), RW-7 (680-120130-2), RW-8 (680-120130-3), RW-6 (680-120130-4), RW-5 (680-120130-5), RW-4 (680-120130-6) and RW-1 (680-120130-7) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 12/23/2015, 12/24/2015 and 12/28/2015.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-416068 recovered outside control limits for the following analytes: Chloromethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

The following analytes recovered outside control limits for the LCSD associated with analytical batch 680-416068: 1,2,4-Trichlorobenzene and Naphthalene. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-416269 recovered outside control limits for the following analytes: 2,2-Dichloropropane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Refer to the QC report for details.

Samples RW-10 (680-120130-1)[25X], RW-10 (680-120130-1)[50X], RW-7 (680-120130-2)[20X], RW-7 (680-120130-2)[200X], RW-8 (680-120130-3)[100X], RW-8 (680-120130-3)[50X], RW-6 (680-120130-4)[250X], RW-5 (680-120130-5)[10X], RW-5 (680-120130-5)[5X], RW-4 (680-120130-6)[2X], RW-4 (680-120130-6)[20X] and RW-1 (680-120130-7)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 680-416068, and 680-415839.

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

Job ID: 680-120130-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-120130-1	RW-10	Water	12/15/15 09:35	12/16/15 09:17
680-120130-2	RW-7	Water	12/15/15 10:25	12/16/15 09:17
680-120130-3	RW-8	Water	12/15/15 10:35	12/16/15 09:17
680-120130-4	RW-6	Water	12/15/15 10:45	12/16/15 09:17
680-120130-5	RW-5	Water	12/15/15 11:20	12/16/15 09:17
680-120130-6	RW-4	Water	12/15/15 11:40	12/16/15 09:17
680-120130-7	RW-1	Water	12/15/15 12:00	12/16/15 09:17

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV

Protocol References:

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

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD is outside acceptance limits.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-10 — Lab Sample ID: 680-120130-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	49		25		ug/L	25		8260B	Total/NA
1,1-Dichloroethane	230		25		ug/L	25		8260B	Total/NA
1,1-Dichloroethene	210		25		ug/L	25		8260B	Total/NA
1,2,4-Trimethylbenzene	58		25		ug/L	25		8260B	Total/NA
1,2-Dichloroethene, Total	4600		50		ug/L	25		8260B	Total/NA
Chloroethane	1300		130		ug/L	25		8260B	Total/NA
cis-1,2-Dichloroethene	4600		25		ug/L	25		8260B	Total/NA
Ethylbenzene	620		25		ug/L	25		8260B	Total/NA
m-Xylene & p-Xylene	2100		25		ug/L	25		8260B	Total/NA
Methylene Chloride	190		130		ug/L	25		8260B	Total/NA
Naphthalene	200		130		ug/L	25		8260B	Total/NA
o-Xylene	840		25		ug/L	25		8260B	Total/NA
Tetrachloroethene	130		25		ug/L	25		8260B	Total/NA
Toluene	8200		50		ug/L	50		8260B	Total/NA
Trichloroethene	220		25		ug/L	25		8260B	Total/NA
Vinyl chloride	3200		25		ug/L	25		8260B	Total/NA
Xylenes, Total	2900		25		ug/L	25		8260B	Total/NA

Client Sample ID: RW-7 — Lab Sample ID: 680-120130-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	2000		20		ug/L	20		8260B	Total/NA
1,2,4-Trimethylbenzene	340		20		ug/L	20		8260B	Total/NA
1,2-Dichloroethane	34		20		ug/L	20		8260B	Total/NA
1,2-Dichloroethene, Total	18000		40		ug/L	20		8260B	Total/NA
1,2-Dichloropropane	43		20		ug/L	20		8260B	Total/NA
1,3,5-Trimethylbenzene	100		20		ug/L	20		8260B	Total/NA
Benzene	68		20		ug/L	20		8260B	Total/NA
Chloroethane	2000		100		ug/L	20		8260B	Total/NA
Ethylbenzene	2200		20		ug/L	20		8260B	Total/NA
Isopropylbenzene	28		20		ug/L	20		8260B	Total/NA
Naphthalene	230	*	100		ug/L	20		8260B	Total/NA
4-Methyl-2-pentanone	3300		200		ug/L	20		8260B	Total/NA
2-Butanone	13000		200		ug/L	20		8260B	Total/NA
N-Propylbenzene	30		20		ug/L	20		8260B	Total/NA
o-Xylene	3300		20		ug/L	20		8260B	Total/NA
Tetrachloroethene	630		20		ug/L	20		8260B	Total/NA
Trichloroethene	520		20		ug/L	20		8260B	Total/NA
Vinyl chloride	2400		20		ug/L	20		8260B	Total/NA
Xylenes, Total	11000		20		ug/L	20		8260B	Total/NA
1,1,1-Trichloroethane - DL	20000		200		ug/L	200		8260B	Total/NA
1,1-Dichloroethane - DL	5800		200		ug/L	200		8260B	Total/NA
Acetone - DL	64000		2000		ug/L	200		8260B	Total/NA
cis-1,2-Dichloroethene - DL	21000		200		ug/L	200		8260B	Total/NA
m-Xylene & p-Xylene - DL	8100		200		ug/L	200		8260B	Total/NA
Methylene Chloride - DL	8500		1000		ug/L	200		8260B	Total/NA
Toluene - DL	22000		200		ug/L	200		8260B	Total/NA

Client Sample ID: RW-8 — Lab Sample ID: 680-120130-3

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-8 (Continued) — Lab Sample ID: 680-120130-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	200		50		ug/L	50		8260B	Total/NA
1,1-Dichloroethane	520		50		ug/L	50		8260B	Total/NA
1,1-Dichloroethene	230		50		ug/L	50		8260B	Total/NA
1,2-Dichloroethene, Total	11000		100		ug/L	50		8260B	Total/NA
Acetone	1600		500		ug/L	50		8260B	Total/NA
Chloroethane	550		250		ug/L	50		8260B	Total/NA
Ethylbenzene	130		50		ug/L	50		8260B	Total/NA
m-Xylene & p-Xylene	310		50		ug/L	50		8260B	Total/NA
o-Xylene	260		50		ug/L	50		8260B	Total/NA
Toluene	880		50		ug/L	50		8260B	Total/NA
Trichloroethene	72		50		ug/L	50		8260B	Total/NA
Vinyl chloride	4500		50		ug/L	50		8260B	Total/NA
Xylenes, Total	570		50		ug/L	50		8260B	Total/NA
cis-1,2-Dichloroethene - DL	10000		100		ug/L	100		8260B	Total/NA

Client Sample ID: RW-6 — Lab Sample ID: 680-120130-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	44000		2500		ug/L	250		8260B	Total/NA

Client Sample ID: RW-5 — Lab Sample ID: 680-120130-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	27		5.0		ug/L	5		8260B	Total/NA
1,2,4-Trimethylbenzene	50		5.0		ug/L	5		8260B	Total/NA
1,2-Dichloroethene, Total	44		10		ug/L	5		8260B	Total/NA
1,3,5-Trimethylbenzene	16		5.0		ug/L	5		8260B	Total/NA
Acetone	160		50		ug/L	5		8260B	Total/NA
Benzene	8.7		5.0		ug/L	5		8260B	Total/NA
Chloroethane	260		25		ug/L	5		8260B	Total/NA
cis-1,2-Dichloroethene	36		5.0		ug/L	5		8260B	Total/NA
Ethylbenzene	280		5.0		ug/L	5		8260B	Total/NA
Isopropylbenzene	6.7		5.0		ug/L	5		8260B	Total/NA
m-Xylene & p-Xylene	840		5.0		ug/L	5		8260B	Total/NA
Naphthalene	36		25		ug/L	5		8260B	Total/NA
N-Propylbenzene	5.5		5.0		ug/L	5		8260B	Total/NA
o-Xylene	480		5.0		ug/L	5		8260B	Total/NA
Toluene	1900		10		ug/L	10		8260B	Total/NA
trans-1,2-Dichloroethene	7.5		5.0		ug/L	5		8260B	Total/NA
Vinyl chloride	38		5.0		ug/L	5		8260B	Total/NA
Xylenes, Total	1300		5.0		ug/L	5		8260B	Total/NA

Client Sample ID: RW-4 — Lab Sample ID: 680-120130-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	110		2.0		ug/L	2		8260B	Total/NA
1,1,2-Trichloroethane	22		2.0		ug/L	2		8260B	Total/NA
1,1-Dichloroethane	79		2.0		ug/L	2		8260B	Total/NA
1,1-Dichloroethene	120		2.0		ug/L	2		8260B	Total/NA
Acetone	30		20		ug/L	2		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-4 (Continued) — Lab Sample ID: 680-120130-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbon tetrachloride	19		2.0		ug/L	2		8260B	Total/NA
Chloroform	4.2		2.0		ug/L	2		8260B	Total/NA
Ethylbenzene	2.3		2.0		ug/L	2		8260B	Total/NA
trans-1,2-Dichloroethene	4.6		2.0		ug/L	2		8260B	Total/NA
Vinyl chloride	120		2.0		ug/L	2		8260B	Total/NA
1,2-Dichloroethene, Total - DL	1800		40		ug/L	20		8260B	Total/NA
cis-1,2-Dichloroethene - DL	1800		20		ug/L	20		8260B	Total/NA
Tetrachloroethene - DL	1200		20		ug/L	20		8260B	Total/NA
Trichloroethene - DL	520		20		ug/L	20		8260B	Total/NA

Client Sample ID: RW-1 — Lab Sample ID: 680-120130-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	54		5.0		ug/L	5		8260B	Total/NA
1,1,2-Trichloroethane	5.9		5.0		ug/L	5		8260B	Total/NA
1,1-Dichloroethane	65		5.0		ug/L	5		8260B	Total/NA
1,1-Dichloroethene	110		5.0		ug/L	5		8260B	Total/NA
1,2-Dichloroethene, Total	740		10		ug/L	5		8260B	Total/NA
cis-1,2-Dichloroethene	740		5.0		ug/L	5		8260B	Total/NA
Ethylbenzene	11		5.0		ug/L	5		8260B	Total/NA
m-Xylene & p-Xylene	7.9		5.0		ug/L	5		8260B	Total/NA
o-Xylene	8.6		5.0		ug/L	5		8260B	Total/NA
Tetrachloroethene	270		5.0		ug/L	5		8260B	Total/NA
Toluene	8.7		5.0		ug/L	5		8260B	Total/NA
Trichloroethene	160		5.0		ug/L	5		8260B	Total/NA
Vinyl chloride	100		5.0		ug/L	5		8260B	Total/NA
Xylenes, Total	17		5.0		ug/L	5		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-10

Date Collected: 12/15/15 09:35
Date Received: 12/16/15 09:17

Lab Sample ID: 680-120130-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	25	U	25		ug/L			12/23/15 14:38	25
1,1,1-Trichloroethane	**49**		25		ug/L			12/23/15 14:38	25
1,1,2,2-Tetrachloroethane	25	U	25		ug/L			12/23/15 14:38	25
1,1,2-Trichloroethane	25	U	25		ug/L			12/23/15 14:38	25
1,1-Dichloroethane	**230**		25		ug/L			12/23/15 14:38	25
1,1-Dichloroethene	**210**		25		ug/L			12/23/15 14:38	25
1,1-Dichloropropene	25	U	25		ug/L			12/23/15 14:38	25
1,2,3-Trichlorobenzene	130	U	130		ug/L			12/23/15 14:38	25
1,2,3-Trichloropropane	25	U	25		ug/L			12/23/15 14:38	25
1,2,4-Trichlorobenzene	130	U	130		ug/L			12/23/15 14:38	25
1,2,4-Trimethylbenzene	**58**		25		ug/L			12/23/15 14:38	25
1,2-Dibromo-3-Chloropropane	130	U	130		ug/L			12/23/15 14:38	25
1,2-Dichlorobenzene	25	U	25		ug/L			12/23/15 14:38	25
1,2-Dichloroethane	25	U	25		ug/L			12/23/15 14:38	25
1,2-Dichloroethene, Total	**4600**		50		ug/L			12/23/15 14:38	25
1,2-Dichloropropane	25	U	25		ug/L			12/23/15 14:38	25
1,3,5-Trimethylbenzene	25	U	25		ug/L			12/23/15 14:38	25
1,3-Dichlorobenzene	25	U	25		ug/L			12/23/15 14:38	25
1,3-Dichloropropane	25	U	25		ug/L			12/23/15 14:38	25
1,4-Dichlorobenzene	25	U	25		ug/L			12/23/15 14:38	25
2,2-Dichloropropane	25	U	25		ug/L			12/23/15 14:38	25
2-Chlorotoluene	25	U	25		ug/L			12/23/15 14:38	25
2-Hexanone	250	U	250		ug/L			12/23/15 14:38	25
4-Chlorotoluene	25	U	25		ug/L			12/23/15 14:38	25
Acetone	250	U	250		ug/L			12/23/15 14:38	25
Benzene	25	U	25		ug/L			12/23/15 14:38	25
Bromobenzene	25	U	25		ug/L			12/23/15 14:38	25
Bromochloromethane	25	U	25		ug/L			12/23/15 14:38	25
Bromoform	25	U	25		ug/L			12/23/15 14:38	25
Bromodichloromethane	25	U	25		ug/L			12/23/15 14:38	25
Bromomethane	130	U	130		ug/L			12/23/15 14:38	25
Carbon disulfide	50	U	50		ug/L			12/23/15 14:38	25
Carbon tetrachloride	25	U	25		ug/L			12/23/15 14:38	25
Chlorobenzene	25	U	25		ug/L			12/23/15 14:38	25
Chloroethane	**1300**		130		ug/L			12/23/15 14:38	25
Chloroform	25	U	25		ug/L			12/23/15 14:38	25
Chloromethane	25	U	25		ug/L			12/23/15 14:38	25
cis-1,2-Dichloroethene	**4600**		25		ug/L			12/23/15 14:38	25
cis-1,3-Dichloropropene	25	U	25		ug/L			12/23/15 14:38	25
Dibromochloromethane	25	U	25		ug/L			12/23/15 14:38	25
Dibromomethane	25	U	25		ug/L			12/23/15 14:38	25
Dichlorodifluoromethane	25	U	25		ug/L			12/23/15 14:38	25
Ethylbenzene	**620**		25		ug/L			12/23/15 14:38	25
Hexachlorobutadiene	130	U	130		ug/L			12/23/15 14:38	25
Isopropylbenzene	25	U	25		ug/L			12/23/15 14:38	25
m-Xylene & p-Xylene	**2100**		25		ug/L			12/23/15 14:38	25
Methyl tert-butyl ether	250	U	250		ug/L			12/23/15 14:38	25
Methylene Chloride	**190**		130		ug/L			12/23/15 14:38	25
Naphthalene	**200**		130		ug/L			12/23/15 14:38	25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-10

Date Collected: 12/15/15 09:35
Date Received: 12/16/15 09:17

Lab Sample ID: 680-120130-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	250	U	250		ug/L			12/23/15 14:38	25
2-Butanone	250	U	250		ug/L			12/23/15 14:38	25
1,2-Dibromoethane	25	U	25		ug/L			12/23/15 14:38	25
n-Butylbenzene	25	U	25		ug/L			12/23/15 14:38	25
N-Propylbenzene	25	U	25		ug/L			12/23/15 14:38	25
o-Xylene	**840**		25		ug/L			12/23/15 14:38	25
p-Isopropyltoluene	25	U	25		ug/L			12/23/15 14:38	25
sec-Butylbenzene	25	U	25		ug/L			12/23/15 14:38	25
Styrene	25	U	25		ug/L			12/23/15 14:38	25
tert-Butylbenzene	25	U	25		ug/L			12/23/15 14:38	25
Tetrachloroethene	**130**		25		ug/L			12/23/15 14:38	25
Toluene	**8200**		50		ug/L			12/24/15 15:23	50
trans-1,2-Dichloroethene	25	U	25		ug/L			12/23/15 14:38	25
trans-1,3-Dichloropropene	25	U	25		ug/L			12/23/15 14:38	25
Trichloroethene	**220**		25		ug/L			12/23/15 14:38	25
Trichlorofluoromethane	25	U	25		ug/L			12/23/15 14:38	25
Vinyl acetate	50	U	50		ug/L			12/23/15 14:38	25
Vinyl chloride	**3200**		25		ug/L			12/23/15 14:38	25
Xylenes, Total	**2900**		25		ug/L			12/23/15 14:38	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*70 - 130*		*12/23/15 14:38*	*25*
Toluene-d8 (Surr)	*109*		*70 - 130*		*12/24/15 15:23*	*50*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 130*		*12/23/15 14:38*	*25*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*12/24/15 15:23*	*50*
Dibromofluoromethane (Surr)	*97*		*70 - 130*		*12/23/15 14:38*	*25*
Dibromofluoromethane (Surr)	*106*		*70 - 130*		*12/24/15 15:23*	*50*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*12/23/15 14:38*	*25*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*		*12/24/15 15:23*	*50*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-7

Date Collected: 12/15/15 10:25
Date Received: 12/16/15 09:17

Lab Sample ID: 680-120130-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	20	U	20		ug/L			12/24/15 14:40	20
1,1,2,2-Tetrachloroethane	20	U	20		ug/L			12/24/15 14:40	20
1,1,2-Trichloroethane	20	U	20		ug/L			12/24/15 14:40	20
1,1-Dichloroethene	**2000**		20		ug/L			12/24/15 14:40	20
1,1-Dichloropropene	20	U	20		ug/L			12/24/15 14:40	20
1,2,3-Trichlorobenzene	100	U	100		ug/L			12/24/15 14:40	20
1,2,3-Trichloropropane	20	U	20		ug/L			12/24/15 14:40	20
1,2,4-Trichlorobenzene	100	U *	100		ug/L			12/24/15 14:40	20
1,2,4-Trimethylbenzene	**340**		20		ug/L			12/24/15 14:40	20
1,2-Dibromo-3-Chloropropane	100	U	100		ug/L			12/24/15 14:40	20
1,2-Dichlorobenzene	20	U	20		ug/L			12/24/15 14:40	20
1,2-Dichloroethane	**34**		20		ug/L			12/24/15 14:40	20
1,2-Dichloroethene, Total	**18000**		40		ug/L			12/24/15 14:40	20
1,2-Dichloropropane	**43**		20		ug/L			12/24/15 14:40	20
1,3,5-Trimethylbenzene	**100**		20		ug/L			12/24/15 14:40	20
1,3-Dichlorobenzene	20	U	20		ug/L			12/24/15 14:40	20
1,3-Dichloropropane	20	U	20		ug/L			12/24/15 14:40	20
1,4-Dichlorobenzene	20	U	20		ug/L			12/24/15 14:40	20
2,2-Dichloropropane	20	U	20		ug/L			12/24/15 14:40	20
2-Chlorotoluene	20	U	20		ug/L			12/24/15 14:40	20
2-Hexanone	200	U	200		ug/L			12/24/15 14:40	20
4-Chlorotoluene	20	U	20		ug/L			12/24/15 14:40	20
Benzene	**68**		20		ug/L			12/24/15 14:40	20
Bromobenzene	20	U	20		ug/L			12/24/15 14:40	20
Bromochloromethane	20	U	20		ug/L			12/24/15 14:40	20
Bromoform	20	U	20		ug/L			12/24/15 14:40	20
Bromodichloromethane	20	U	20		ug/L			12/24/15 14:40	20
Bromomethane	100	U	100		ug/L			12/24/15 14:40	20
Carbon disulfide	40	U	40		ug/L			12/24/15 14:40	20
Carbon tetrachloride	20	U	20		ug/L			12/24/15 14:40	20
Chlorobenzene	20	U	20		ug/L			12/24/15 14:40	20
Chloroethane	**2000**		100		ug/L			12/24/15 14:40	20
Chloroform	20	U	20		ug/L			12/24/15 14:40	20
Chloromethane	20	U *	20		ug/L			12/24/15 14:40	20
cis-1,3-Dichloropropene	20	U	20		ug/L			12/24/15 14:40	20
Dibromochloromethane	20	U	20		ug/L			12/24/15 14:40	20
Dibromomethane	20	U	20		ug/L			12/24/15 14:40	20
Dichlorodifluoromethane	20	U	20		ug/L			12/24/15 14:40	20
Ethylbenzene	**2200**		20		ug/L			12/24/15 14:40	20
Hexachlorobutadiene	100	U	100		ug/L			12/24/15 14:40	20
Isopropylbenzene	**28**		20		ug/L			12/24/15 14:40	20
Methyl tert-butyl ether	200	U	200		ug/L			12/24/15 14:40	20
Naphthalene	**230**	*	100		ug/L			12/24/15 14:40	20
4-Methyl-2-pentanone	**3300**		200		ug/L			12/24/15 14:40	20
2-Butanone	**13000**		200		ug/L			12/24/15 14:40	20
1,2-Dibromoethane	20	U	20		ug/L			12/24/15 14:40	20
n-Butylbenzene	20	U	20		ug/L			12/24/15 14:40	20
N-Propylbenzene	**30**		20		ug/L			12/24/15 14:40	20
o-Xylene	**3300**		20		ug/L			12/24/15 14:40	20

Client Sample ID: RW-7

Lab Sample ID: 680-120130-2

Date Collected: 12/15/15 10:25

Matrix: Water

Date Received: 12/16/15 09:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
p-Isopropyltoluene	20	U	20		ug/L			12/24/15 14:40	20
sec-Butylbenzene	20	U	20		ug/L			12/24/15 14:40	20
Styrene	20	U	20		ug/L			12/24/15 14:40	20
tert-Butylbenzene	20	U	20		ug/L			12/24/15 14:40	20
Tetrachloroethene	**630**		20		ug/L			12/24/15 14:40	20
trans-1,2-Dichloroethene	20	U	20		ug/L			12/24/15 14:40	20
trans-1,3-Dichloropropene	20	U	20		ug/L			12/24/15 14:40	20
Trichloroethene	**520**		20		ug/L			12/24/15 14:40	20
Trichlorofluoromethane	20	U	20		ug/L			12/24/15 14:40	20
Vinyl acetate	40	U *	40		ug/L			12/24/15 14:40	20
Vinyl chloride	**2400**		20		ug/L			12/24/15 14:40	20
Xylenes, Total	**11000**		20		ug/L			12/24/15 14:40	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*108*		*70 - 130*		*12/24/15 14:40*	*20*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*12/24/15 14:40*	*20*
Dibromofluoromethane (Surr)	*101*		*70 - 130*		*12/24/15 14:40*	*20*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*		*12/24/15 14:40*	*20*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**20000**		200		ug/L			12/23/15 16:00	200
1,1-Dichloroethane	**5800**		200		ug/L			12/23/15 16:00	200
Acetone	**64000**		2000		ug/L			12/23/15 16:00	200
cis-1,2-Dichloroethene	**21000**		200		ug/L			12/23/15 16:00	200
m-Xylene & p-Xylene	**8100**		200		ug/L			12/23/15 16:00	200
Methylene Chloride	**8500**		1000		ug/L			12/23/15 16:00	200
Toluene	**22000**		200		ug/L			12/23/15 16:00	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*107*		*70 - 130*		*12/23/15 16:00*	*200*
1,2-Dichloroethane-d4 (Surr)	*112*		*70 - 130*		*12/23/15 16:00*	*200*
Dibromofluoromethane (Surr)	*110*		*70 - 130*		*12/23/15 16:00*	*200*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*12/23/15 16:00*	*200*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-8

Date Collected: 12/15/15 10:35
Date Received: 12/16/15 09:17

Lab Sample ID: 680-120130-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	50	U	50		ug/L			12/24/15 15:45	50
1,1,1-Trichloroethane	**200**		50		ug/L			12/24/15 15:45	50
1,1,2,2-Tetrachloroethane	50	U	50		ug/L			12/24/15 15:45	50
1,1,2-Trichloroethane	50	U	50		ug/L			12/24/15 15:45	50
1,1-Dichloroethane	**520**		50		ug/L			12/24/15 15:45	50
1,1-Dichloroethene	**230**		50		ug/L			12/24/15 15:45	50
1,1-Dichloropropene	50	U	50		ug/L			12/24/15 15:45	50
1,2,3-Trichlorobenzene	250	U	250		ug/L			12/24/15 15:45	50
1,2,3-Trichloropropane	50	U	50		ug/L			12/24/15 15:45	50
1,2,4-Trichlorobenzene	250	U *	250		ug/L			12/24/15 15:45	50
1,2,4-Trimethylbenzene	50	U	50		ug/L			12/24/15 15:45	50
1,2-Dibromo-3-Chloropropane	250	U	250		ug/L			12/24/15 15:45	50
1,2-Dichlorobenzene	50	U	50		ug/L			12/24/15 15:45	50
1,2-Dichloroethane	50	U	50		ug/L			12/24/15 15:45	50
1,2-Dichloroethene, Total	**11000**		100		ug/L			12/24/15 15:45	50
1,2-Dichloropropane	50	U	50		ug/L			12/24/15 15:45	50
1,3,5-Trimethylbenzene	50	U	50		ug/L			12/24/15 15:45	50
1,3-Dichlorobenzene	50	U	50		ug/L			12/24/15 15:45	50
1,3-Dichloropropane	50	U	50		ug/L			12/24/15 15:45	50
1,4-Dichlorobenzene	50	U	50		ug/L			12/24/15 15:45	50
2,2-Dichloropropane	50	U	50		ug/L			12/24/15 15:45	50
2-Chlorotoluene	50	U	50		ug/L			12/24/15 15:45	50
2-Hexanone	500	U	500		ug/L			12/24/15 15:45	50
4-Chlorotoluene	50	U	50		ug/L			12/24/15 15:45	50
Acetone	**1600**		500		ug/L			12/24/15 15:45	50
Benzene	50	U	50		ug/L			12/24/15 15:45	50
Bromobenzene	50	U	50		ug/L			12/24/15 15:45	50
Bromochloromethane	50	U	50		ug/L			12/24/15 15:45	50
Bromoform	50	U	50		ug/L			12/24/15 15:45	50
Bromodichloromethane	50	U	50		ug/L			12/24/15 15:45	50
Bromomethane	250	U	250		ug/L			12/24/15 15:45	50
Carbon disulfide	100	U	100		ug/L			12/24/15 15:45	50
Carbon tetrachloride	50	U	50		ug/L			12/24/15 15:45	50
Chlorobenzene	50	U	50		ug/L			12/24/15 15:45	50
Chloroethane	**550**		250		ug/L			12/24/15 15:45	50
Chloroform	50	U	50		ug/L			12/24/15 15:45	50
Chloromethane	50	U *	50		ug/L			12/24/15 15:45	50
cis-1,3-Dichloropropene	50	U	50		ug/L			12/24/15 15:45	50
Dibromochloromethane	50	U	50		ug/L			12/24/15 15:45	50
Dibromomethane	50	U	50		ug/L			12/24/15 15:45	50
Dichlorodifluoromethane	50	U	50		ug/L			12/24/15 15:45	50
Ethylbenzene	**130**		50		ug/L			12/24/15 15:45	50
Hexachlorobutadiene	250	U	250		ug/L			12/24/15 15:45	50
Isopropylbenzene	50	U	50		ug/L			12/24/15 15:45	50
m-Xylene & p-Xylene	**310**		50		ug/L			12/24/15 15:45	50
Methyl tert-butyl ether	500	U	500		ug/L			12/24/15 15:45	50
Methylene Chloride	250	U	250		ug/L			12/24/15 15:45	50
Naphthalene	250	U *	250		ug/L			12/24/15 15:45	50
4-Methyl-2-pentanone	500	U	500		ug/L			12/24/15 15:45	50

Client Sample ID: RW-8

Lab Sample ID: 680-120130-3

Date Collected: 12/15/15 10:35

Matrix: Water

Date Received: 12/16/15 09:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone	500	U	500		ug/L			12/24/15 15:45	50
1,2-Dibromoethane	50	U	50		ug/L			12/24/15 15:45	50
n-Butylbenzene	50	U	50		ug/L			12/24/15 15:45	50
N-Propylbenzene	50	U	50		ug/L			12/24/15 15:45	50
o-Xylene	**260**		50		ug/L			12/24/15 15:45	50
p-Isopropyltoluene	50	U	50		ug/L			12/24/15 15:45	50
sec-Butylbenzene	50	U	50		ug/L			12/24/15 15:45	50
Styrene	50	U	50		ug/L			12/24/15 15:45	50
tert-Butylbenzene	50	U	50		ug/L			12/24/15 15:45	50
Tetrachloroethene	50	U	50		ug/L			12/24/15 15:45	50
Toluene	**880**		50		ug/L			12/24/15 15:45	50
trans-1,2-Dichloroethene	50	U	50		ug/L			12/24/15 15:45	50
trans-1,3-Dichloropropene	50	U	50		ug/L			12/24/15 15:45	50
Trichloroethene	**72**		50		ug/L			12/24/15 15:45	50
Trichlorofluoromethane	50	U	50		ug/L			12/24/15 15:45	50
Vinyl acetate	100	U *	100		ug/L			12/24/15 15:45	50
Vinyl chloride	**4500**		50		ug/L			12/24/15 15:45	50
Xylenes, Total	**570**		50		ug/L			12/24/15 15:45	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*112*		*70 - 130*		*12/24/15 15:45*	*50*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*12/24/15 15:45*	*50*
Dibromofluoromethane (Surr)	*107*		*70 - 130*		*12/24/15 15:45*	*50*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*		*12/24/15 15:45*	*50*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	**10000**		100		ug/L			12/28/15 13:39	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*70 - 130*		*12/28/15 13:39*	*100*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*		*12/28/15 13:39*	*100*
Dibromofluoromethane (Surr)	*104*		*70 - 130*		*12/28/15 13:39*	*100*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*12/28/15 13:39*	*100*

Client Sample ID: RW-6

Lab Sample ID: 680-120130-4

Date Collected: 12/15/15 10:45
Matrix: Water
Date Received: 12/16/15 09:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	250	U	250		ug/L			12/23/15 16:20	250
1,1,1-Trichloroethane	250	U	250		ug/L			12/23/15 16:20	250
1,1,2,2-Tetrachloroethane	250	U	250		ug/L			12/23/15 16:20	250
1,1,2-Trichloroethane	250	U	250		ug/L			12/23/15 16:20	250
1,1-Dichloroethane	250	U	250		ug/L			12/23/15 16:20	250
1,1-Dichloroethene	250	U	250		ug/L			12/23/15 16:20	250
1,1-Dichloropropene	250	U	250		ug/L			12/23/15 16:20	250
1,2,3-Trichlorobenzene	1300	U	1300		ug/L			12/23/15 16:20	250
1,2,3-Trichloropropane	250	U	250		ug/L			12/23/15 16:20	250
1,2,4-Trichlorobenzene	1300	U	1300		ug/L			12/23/15 16:20	250
1,2,4-Trimethylbenzene	250	U	250		ug/L			12/23/15 16:20	250
1,2-Dibromo-3-Chloropropane	1300	U	1300		ug/L			12/23/15 16:20	250
1,2-Dichlorobenzene	250	U	250		ug/L			12/23/15 16:20	250
1,2-Dichloroethane	250	U	250		ug/L			12/23/15 16:20	250
1,2-Dichloroethene, Total	500	U	500		ug/L			12/23/15 16:20	250
1,2-Dichloropropane	250	U	250		ug/L			12/23/15 16:20	250
1,3,5-Trimethylbenzene	250	U	250		ug/L			12/23/15 16:20	250
1,3-Dichlorobenzene	250	U	250		ug/L			12/23/15 16:20	250
1,3-Dichloropropane	250	U	250		ug/L			12/23/15 16:20	250
1,4-Dichlorobenzene	250	U	250		ug/L			12/23/15 16:20	250
2,2-Dichloropropane	250	U	250		ug/L			12/23/15 16:20	250
2-Chlorotoluene	250	U	250		ug/L			12/23/15 16:20	250
2-Hexanone	2500	U	2500		ug/L			12/23/15 16:20	250
4-Chlorotoluene	250	U	250		ug/L			12/23/15 16:20	250
Acetone	**44000**		2500		ug/L			12/23/15 16:20	250
Benzene	250	U	250		ug/L			12/23/15 16:20	250
Bromobenzene	250	U	250		ug/L			12/23/15 16:20	250
Bromochloromethane	250	U	250		ug/L			12/23/15 16:20	250
Bromoform	250	U	250		ug/L			12/23/15 16:20	250
Bromodichloromethane	250	U	250		ug/L			12/23/15 16:20	250
Bromomethane	1300	U	1300		ug/L			12/23/15 16:20	250
Carbon disulfide	500	U	500		ug/L			12/23/15 16:20	250
Carbon tetrachloride	250	U	250		ug/L			12/23/15 16:20	250
Chlorobenzene	250	U	250		ug/L			12/23/15 16:20	250
Chloroethane	1300	U	1300		ug/L			12/23/15 16:20	250
Chloroform	250	U	250		ug/L			12/23/15 16:20	250
Chloromethane	250	U	250		ug/L			12/23/15 16:20	250
cis-1,2-Dichloroethene	250	U	250		ug/L			12/23/15 16:20	250
cis-1,3-Dichloropropene	250	U	250		ug/L			12/23/15 16:20	250
Dibromochloromethane	250	U	250		ug/L			12/23/15 16:20	250
Dibromomethane	250	U	250		ug/L			12/23/15 16:20	250
Dichlorodifluoromethane	250	U	250		ug/L			12/23/15 16:20	250
Ethylbenzene	250	U	250		ug/L			12/23/15 16:20	250
Hexachlorobutadiene	1300	U	1300		ug/L			12/23/15 16:20	250
Isopropylbenzene	250	U	250		ug/L			12/23/15 16:20	250
m-Xylene & p-Xylene	250	U	250		ug/L			12/23/15 16:20	250
Methyl tert-butyl ether	2500	U	2500		ug/L			12/23/15 16:20	250
Methylene Chloride	1300	U	1300		ug/L			12/23/15 16:20	250
Naphthalene	1300	U	1300		ug/L			12/23/15 16:20	250

Client Sample ID: RW-6

Lab Sample ID: 680-120130-4

Date Collected: 12/15/15 10:45

Matrix: Water

Date Received: 12/16/15 09:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	2500	U	2500		ug/L			12/23/15 16:20	250
2-Butanone	2500	U	2500		ug/L			12/23/15 16:20	250
1,2-Dibromoethane	250	U	250		ug/L			12/23/15 16:20	250
n-Butylbenzene	250	U	250		ug/L			12/23/15 16:20	250
N-Propylbenzene	250	U	250		ug/L			12/23/15 16:20	250
o-Xylene	250	U	250		ug/L			12/23/15 16:20	250
p-Isopropyltoluene	250	U	250		ug/L			12/23/15 16:20	250
sec-Butylbenzene	250	U	250		ug/L			12/23/15 16:20	250
Styrene	250	U	250		ug/L			12/23/15 16:20	250
tert-Butylbenzene	250	U	250		ug/L			12/23/15 16:20	250
Tetrachloroethene	250	U	250		ug/L			12/23/15 16:20	250
Toluene	250	U	250		ug/L			12/23/15 16:20	250
trans-1,2-Dichloroethene	250	U	250		ug/L			12/23/15 16:20	250
trans-1,3-Dichloropropene	250	U	250		ug/L			12/23/15 16:20	250
Trichloroethene	250	U	250		ug/L			12/23/15 16:20	250
Trichlorofluoromethane	250	U	250		ug/L			12/23/15 16:20	250
Vinyl acetate	500	U	500		ug/L			12/23/15 16:20	250
Vinyl chloride	250	U	250		ug/L			12/23/15 16:20	250
Xylenes, Total	250	U	250		ug/L			12/23/15 16:20	250

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*70 - 130*		*12/23/15 16:20*	*250*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 130*		*12/23/15 16:20*	*250*
Dibromofluoromethane (Surr)	*108*		*70 - 130*		*12/23/15 16:20*	*250*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*12/23/15 16:20*	*250*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-5

Date Collected: 12/15/15 11:20
Date Received: 12/16/15 09:17

Lab Sample ID: 680-120130-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
1,1,1-Trichloroethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
1,1,2,2-Tetrachloroethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
1,1,2-Trichloroethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
1,1-Dichloroethane	**27**		5.0		ug/L			12/23/15 15:19	5
1,1-Dichloroethene	5.0	U	5.0		ug/L			12/23/15 15:19	5
1,1-Dichloropropene	5.0	U	5.0		ug/L			12/23/15 15:19	5
1,2,3-Trichlorobenzene	25	U	25		ug/L			12/23/15 15:19	5
1,2,3-Trichloropropane	5.0	U	5.0		ug/L			12/23/15 15:19	5
1,2,4-Trichlorobenzene	25	U	25		ug/L			12/23/15 15:19	5
1,2,4-Trimethylbenzene	**50**		5.0		ug/L			12/23/15 15:19	5
1,2-Dibromo-3-Chloropropane	25	U	25		ug/L			12/23/15 15:19	5
1,2-Dichlorobenzene	5.0	U	5.0		ug/L			12/23/15 15:19	5
1,2-Dichloroethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
1,2-Dichloroethene, Total	**44**		10		ug/L			12/23/15 15:19	5
1,2-Dichloropropane	5.0	U	5.0		ug/L			12/23/15 15:19	5
1,3,5-Trimethylbenzene	**16**		5.0		ug/L			12/23/15 15:19	5
1,3-Dichlorobenzene	5.0	U	5.0		ug/L			12/23/15 15:19	5
1,3-Dichloropropane	5.0	U	5.0		ug/L			12/23/15 15:19	5
1,4-Dichlorobenzene	5.0	U	5.0		ug/L			12/23/15 15:19	5
2,2-Dichloropropane	5.0	U	5.0		ug/L			12/23/15 15:19	5
2-Chlorotoluene	5.0	U	5.0		ug/L			12/23/15 15:19	5
2-Hexanone	50	U	50		ug/L			12/23/15 15:19	5
4-Chlorotoluene	5.0	U	5.0		ug/L			12/23/15 15:19	5
Acetone	**160**		50		ug/L			12/23/15 15:19	5
Benzene	**8.7**		5.0		ug/L			12/23/15 15:19	5
Bromobenzene	5.0	U	5.0		ug/L			12/23/15 15:19	5
Bromochloromethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
Bromoform	5.0	U	5.0		ug/L			12/23/15 15:19	5
Bromodichloromethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
Bromomethane	25	U	25		ug/L			12/23/15 15:19	5
Carbon disulfide	10	U	10		ug/L			12/23/15 15:19	5
Carbon tetrachloride	5.0	U	5.0		ug/L			12/23/15 15:19	5
Chlorobenzene	5.0	U	5.0		ug/L			12/23/15 15:19	5
Chloroethane	**260**		25		ug/L			12/23/15 15:19	5
Chloroform	5.0	U	5.0		ug/L			12/23/15 15:19	5
Chloromethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
cis-1,2-Dichloroethene	**36**		5.0		ug/L			12/23/15 15:19	5
cis-1,3-Dichloropropene	5.0	U	5.0		ug/L			12/23/15 15:19	5
Dibromochloromethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
Dibromomethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
Dichlorodifluoromethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
Ethylbenzene	**280**		5.0		ug/L			12/23/15 15:19	5
Hexachlorobutadiene	25	U	25		ug/L			12/23/15 15:19	5
Isopropylbenzene	**6.7**		5.0		ug/L			12/23/15 15:19	5
m-Xylene & p-Xylene	**840**		5.0		ug/L			12/23/15 15:19	5
Methyl tert-butyl ether	50	U	50		ug/L			12/23/15 15:19	5
Methylene Chloride	25	U	25		ug/L			12/23/15 15:19	5
Naphthalene	**36**		25		ug/L			12/23/15 15:19	5

Client Sample ID: RW-5

Lab Sample ID: 680-120130-5

Date Collected: 12/15/15 11:20

Matrix: Water

Date Received: 12/16/15 09:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	50	U	50		ug/L			12/23/15 15:19	5
2-Butanone	50	U	50		ug/L			12/23/15 15:19	5
1,2-Dibromoethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
n-Butylbenzene	5.0	U	5.0		ug/L			12/23/15 15:19	5
N-Propylbenzene	**5.5**		5.0		ug/L			12/23/15 15:19	5
o-Xylene	**480**		5.0		ug/L			12/23/15 15:19	5
p-Isopropyltoluene	5.0	U	5.0		ug/L			12/23/15 15:19	5
sec-Butylbenzene	5.0	U	5.0		ug/L			12/23/15 15:19	5
Styrene	5.0	U	5.0		ug/L			12/23/15 15:19	5
tert-Butylbenzene	5.0	U	5.0		ug/L			12/23/15 15:19	5
Tetrachloroethene	5.0	U	5.0		ug/L			12/23/15 15:19	5
Toluene	**1900**		10		ug/L			12/24/15 16:06	10
trans-1,2-Dichloroethene	**7.5**		5.0		ug/L			12/23/15 15:19	5
trans-1,3-Dichloropropene	5.0	U	5.0		ug/L			12/23/15 15:19	5
Trichloroethene	5.0	U	5.0		ug/L			12/23/15 15:19	5
Trichlorofluoromethane	5.0	U	5.0		ug/L			12/23/15 15:19	5
Vinyl acetate	10	U	10		ug/L			12/23/15 15:19	5
Vinyl chloride	**38**		5.0		ug/L			12/23/15 15:19	5
Xylenes, Total	**1300**		5.0		ug/L			12/23/15 15:19	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*70 - 130*		*12/23/15 15:19*	*5*
Toluene-d8 (Surr)	*110*		*70 - 130*		*12/24/15 16:06*	*10*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*		*12/23/15 15:19*	*5*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*12/24/15 16:06*	*10*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*12/23/15 15:19*	*5*
Dibromofluoromethane (Surr)	*109*		*70 - 130*		*12/24/15 16:06*	*10*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*12/23/15 15:19*	*5*
4-Bromofluorobenzene (Surr)	*119*		*70 - 130*		*12/24/15 16:06*	*10*

Client Sample ID: RW-4

Lab Sample ID: 680-120130-6

Date Collected: 12/15/15 11:40
Matrix: Water
Date Received: 12/16/15 09:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	2.0	U	2.0		ug/L			12/23/15 16:41	2
1,1,1-Trichloroethane	**110**		2.0		ug/L			12/23/15 16:41	2
1,1,2,2-Tetrachloroethane	2.0	U	2.0		ug/L			12/23/15 16:41	2
1,1,2-Trichloroethane	**22**		2.0		ug/L			12/23/15 16:41	2
1,1-Dichloroethane	**79**		2.0		ug/L			12/23/15 16:41	2
1,1-Dichloroethene	**120**		2.0		ug/L			12/23/15 16:41	2
1,1-Dichloropropene	2.0	U	2.0		ug/L			12/23/15 16:41	2
1,2,3-Trichlorobenzene	10	U	10		ug/L			12/23/15 16:41	2
1,2,3-Trichloropropane	2.0	U	2.0		ug/L			12/23/15 16:41	2
1,2,4-Trichlorobenzene	10	U	10		ug/L			12/23/15 16:41	2
1,2,4-Trimethylbenzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
1,2-Dibromo-3-Chloropropane	10	U	10		ug/L			12/23/15 16:41	2
1,2-Dichlorobenzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
1,2-Dichloroethane	2.0	U	2.0		ug/L			12/23/15 16:41	2
1,2-Dichloropropane	2.0	U	2.0		ug/L			12/23/15 16:41	2
1,3,5-Trimethylbenzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
1,3-Dichlorobenzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
1,3-Dichloropropane	2.0	U	2.0		ug/L			12/23/15 16:41	2
1,4-Dichlorobenzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
2,2-Dichloropropane	2.0	U	2.0		ug/L			12/23/15 16:41	2
2-Chlorotoluene	2.0	U	2.0		ug/L			12/23/15 16:41	2
2-Hexanone	20	U	20		ug/L			12/23/15 16:41	2
4-Chlorotoluene	2.0	U	2.0		ug/L			12/23/15 16:41	2
Acetone	**30**		20		ug/L			12/23/15 16:41	2
Benzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
Bromobenzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
Bromochloromethane	2.0	U	2.0		ug/L			12/23/15 16:41	2
Bromoform	2.0	U	2.0		ug/L			12/23/15 16:41	2
Bromodichloromethane	2.0	U	2.0		ug/L			12/23/15 16:41	2
Bromomethane	10	U	10		ug/L			12/23/15 16:41	2
Carbon disulfide	4.0	U	4.0		ug/L			12/23/15 16:41	2
Carbon tetrachloride	**19**		2.0		ug/L			12/23/15 16:41	2
Chlorobenzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
Chloroethane	10	U	10		ug/L			12/23/15 16:41	2
Chloroform	**4.2**		2.0		ug/L			12/23/15 16:41	2
Chloromethane	2.0	U	2.0		ug/L			12/23/15 16:41	2
cis-1,3-Dichloropropene	2.0	U	2.0		ug/L			12/23/15 16:41	2
Dibromochloromethane	2.0	U	2.0		ug/L			12/23/15 16:41	2
Dibromomethane	2.0	U	2.0		ug/L			12/23/15 16:41	2
Dichlorodifluoromethane	2.0	U	2.0		ug/L			12/23/15 16:41	2
Ethylbenzene	**2.3**		2.0		ug/L			12/23/15 16:41	2
Hexachlorobutadiene	10	U	10		ug/L			12/23/15 16:41	2
Isopropylbenzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
m-Xylene & p-Xylene	2.0	U	2.0		ug/L			12/23/15 16:41	2
Methyl tert-butyl ether	20	U	20		ug/L			12/23/15 16:41	2
Methylene Chloride	10	U	10		ug/L			12/23/15 16:41	2
Naphthalene	10	U	10		ug/L			12/23/15 16:41	2
4-Methyl-2-pentanone	20	U	20		ug/L			12/23/15 16:41	2
2-Butanone	20	U	20		ug/L			12/23/15 16:41	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-4

Date Collected: 12/15/15 11:40
Date Received: 12/16/15 09:17

Lab Sample ID: 680-120130-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	2.0	U	2.0		ug/L			12/23/15 16:41	2
n-Butylbenzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
N-Propylbenzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
o-Xylene	2.0	U	2.0		ug/L			12/23/15 16:41	2
p-Isopropyltoluene	2.0	U	2.0		ug/L			12/23/15 16:41	2
sec-Butylbenzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
Styrene	2.0	U	2.0		ug/L			12/23/15 16:41	2
tert-Butylbenzene	2.0	U	2.0		ug/L			12/23/15 16:41	2
Toluene	2.0	U	2.0		ug/L			12/23/15 16:41	2
trans-1,2-Dichloroethene	**4.6**		2.0		ug/L			12/23/15 16:41	2
trans-1,3-Dichloropropene	2.0	U	2.0		ug/L			12/23/15 16:41	2
Trichlorofluoromethane	2.0	U	2.0		ug/L			12/23/15 16:41	2
Vinyl acetate	4.0	U	4.0		ug/L			12/23/15 16:41	2
Vinyl chloride	**120**		2.0		ug/L			12/23/15 16:41	2
Xylenes, Total	2.0	U	2.0		ug/L			12/23/15 16:41	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*70 - 130*		*12/23/15 16:41*	*2*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*12/23/15 16:41*	*2*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*12/23/15 16:41*	*2*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*12/23/15 16:41*	*2*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethene, Total	**1800**		40		ug/L			12/28/15 13:17	20
cis-1,2-Dichloroethene	**1800**		20		ug/L			12/28/15 13:17	20
Tetrachloroethene	**1200**		20		ug/L			12/28/15 13:17	20
Trichloroethene	**520**		20		ug/L			12/28/15 13:17	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*70 - 130*		*12/28/15 13:17*	*20*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 130*		*12/28/15 13:17*	*20*
Dibromofluoromethane (Surr)	*109*		*70 - 130*		*12/28/15 13:17*	*20*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*12/28/15 13:17*	*20*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-1

Date Collected: 12/15/15 12:00
Date Received: 12/16/15 09:17

Lab Sample ID: 680-120130-7

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	5.0	U	5.0		ug/L			12/23/15 15:39	5
1,1,1-Trichloroethane	**54**		5.0		ug/L			12/23/15 15:39	5
1,1,2,2-Tetrachloroethane	5.0	U	5.0		ug/L			12/23/15 15:39	5
1,1,2-Trichloroethane	**5.9**		5.0		ug/L			12/23/15 15:39	5
1,1-Dichloroethane	**65**		5.0		ug/L			12/23/15 15:39	5
1,1-Dichloroethene	**110**		5.0		ug/L			12/23/15 15:39	5
1,1-Dichloropropene	5.0	U	5.0		ug/L			12/23/15 15:39	5
1,2,3-Trichlorobenzene	25	U	25		ug/L			12/23/15 15:39	5
1,2,3-Trichloropropane	5.0	U	5.0		ug/L			12/23/15 15:39	5
1,2,4-Trichlorobenzene	25	U	25		ug/L			12/23/15 15:39	5
1,2,4-Trimethylbenzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
1,2-Dibromo-3-Chloropropane	25	U	25		ug/L			12/23/15 15:39	5
1,2-Dichlorobenzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
1,2-Dichloroethane	5.0	U	5.0		ug/L			12/23/15 15:39	5
1,2-Dichloroethene, Total	**740**		10		ug/L			12/23/15 15:39	5
1,2-Dichloropropane	5.0	U	5.0		ug/L			12/23/15 15:39	5
1,3,5-Trimethylbenzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
1,3-Dichlorobenzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
1,3-Dichloropropane	5.0	U	5.0		ug/L			12/23/15 15:39	5
1,4-Dichlorobenzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
2,2-Dichloropropane	5.0	U	5.0		ug/L			12/23/15 15:39	5
2-Chlorotoluene	5.0	U	5.0		ug/L			12/23/15 15:39	5
2-Hexanone	50	U	50		ug/L			12/23/15 15:39	5
4-Chlorotoluene	5.0	U	5.0		ug/L			12/23/15 15:39	5
Acetone	50	U	50		ug/L			12/23/15 15:39	5
Benzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
Bromobenzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
Bromochloromethane	5.0	U	5.0		ug/L			12/23/15 15:39	5
Bromoform	5.0	U	5.0		ug/L			12/23/15 15:39	5
Bromodichloromethane	5.0	U	5.0		ug/L			12/23/15 15:39	5
Bromomethane	25	U	25		ug/L			12/23/15 15:39	5
Carbon disulfide	10	U	10		ug/L			12/23/15 15:39	5
Carbon tetrachloride	5.0	U	5.0		ug/L			12/23/15 15:39	5
Chlorobenzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
Chloroethane	25	U	25		ug/L			12/23/15 15:39	5
Chloroform	5.0	U	5.0		ug/L			12/23/15 15:39	5
Chloromethane	5.0	U	5.0		ug/L			12/23/15 15:39	5
cis-1,2-Dichloroethene	**740**		5.0		ug/L			12/23/15 15:39	5
cis-1,3-Dichloropropene	5.0	U	5.0		ug/L			12/23/15 15:39	5
Dibromochloromethane	5.0	U	5.0		ug/L			12/23/15 15:39	5
Dibromomethane	5.0	U	5.0		ug/L			12/23/15 15:39	5
Dichlorodifluoromethane	5.0	U	5.0		ug/L			12/23/15 15:39	5
Ethylbenzene	**11**		5.0		ug/L			12/23/15 15:39	5
Hexachlorobutadiene	25	U	25		ug/L			12/23/15 15:39	5
Isopropylbenzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
m-Xylene & p-Xylene	**7.9**		5.0		ug/L			12/23/15 15:39	5
Methyl tert-butyl ether	50	U	50		ug/L			12/23/15 15:39	5
Methylene Chloride	25	U	25		ug/L			12/23/15 15:39	5
Naphthalene	25	U	25		ug/L			12/23/15 15:39	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-1

Lab Sample ID: 680-120130-7

Date Collected: 12/15/15 12:00
Matrix: Water
Date Received: 12/16/15 09:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	50	U	50		ug/L			12/23/15 15:39	5
2-Butanone	50	U	50		ug/L			12/23/15 15:39	5
1,2-Dibromoethane	5.0	U	5.0		ug/L			12/23/15 15:39	5
n-Butylbenzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
N-Propylbenzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
o-Xylene	**8.6**		5.0		ug/L			12/23/15 15:39	5
p-Isopropyltoluene	5.0	U	5.0		ug/L			12/23/15 15:39	5
sec-Butylbenzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
Styrene	5.0	U	5.0		ug/L			12/23/15 15:39	5
tert-Butylbenzene	5.0	U	5.0		ug/L			12/23/15 15:39	5
Tetrachloroethene	**270**		5.0		ug/L			12/23/15 15:39	5
Toluene	**8.7**		5.0		ug/L			12/23/15 15:39	5
trans-1,2-Dichloroethene	5.0	U	5.0		ug/L			12/23/15 15:39	5
trans-1,3-Dichloropropene	5.0	U	5.0		ug/L			12/23/15 15:39	5
Trichloroethene	**160**		5.0		ug/L			12/23/15 15:39	5
Trichlorofluoromethane	5.0	U	5.0		ug/L			12/23/15 15:39	5
Vinyl acetate	10	U	10		ug/L			12/23/15 15:39	5
Vinyl chloride	**100**		5.0		ug/L			12/23/15 15:39	5
Xylenes, Total	**17**		5.0		ug/L			12/23/15 15:39	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*70 - 130*		*12/23/15 15:39*	*5*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*		*12/23/15 15:39*	*5*
Dibromofluoromethane (Surr)	*101*		*70 - 130*		*12/23/15 15:39*	*5*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*12/23/15 15:39*	*5*

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	DBFM	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
680-120130-1	RW-10	105	90	97	96
680-120130-1	RW-10	109	99	106	118
680-120130-2 - DL	RW-7	107	112	110	95
680-120130-2	RW-7	108	99	101	114
680-120130-3	RW-8	112	103	107	120
680-120130-3 - DL	RW-8	103	104	104	104
680-120130-4	RW-6	104	111	108	96
680-120130-5	RW-5	104	95	100	95
680-120130-5	RW-5	110	103	109	119
680-120130-6	RW-4	104	98	100	96
680-120130-6 - DL	RW-4	101	111	109	100
680-120130-7	RW-1	103	95	101	98
LCS 680-415839/4	Lab Control Sample	108	108	105	94
LCS 680-416068/4	Lab Control Sample	101	93	100	115
LCS 680-416269/4	Lab Control Sample	94	96	90	101
LCSD 680-415839/5	Lab Control Sample Dup	107	101	102	95
LCSD 680-416068/5	Lab Control Sample Dup	104	95	100	115
LCSD 680-416269/5	Lab Control Sample Dup	95	92	94	102
MB 680-415839/9	Method Blank	104	105	106	99
MB 680-416068/11	Method Blank	113	94	102	120
MB 680-416269/9	Method Blank	107	100	103	102

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)

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

Lab Sample ID: MB 680-415839/9
Matrix: Water
Analysis Batch: 415839

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/23/15 10:11	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/23/15 10:11	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/23/15 10:11	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/23/15 10:11	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/23/15 10:11	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/23/15 10:11	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/23/15 10:11	1
2-Hexanone	10	U	10		ug/L			12/23/15 10:11	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/23/15 10:11	1
Acetone	10	U	10		ug/L			12/23/15 10:11	1
Benzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
Bromobenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
Bromochloromethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
Bromoform	1.0	U	1.0		ug/L			12/23/15 10:11	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
Bromomethane	5.0	U	5.0		ug/L			12/23/15 10:11	1
Carbon disulfide	2.0	U	2.0		ug/L			12/23/15 10:11	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/23/15 10:11	1
Chlorobenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
Chloroethane	5.0	U	5.0		ug/L			12/23/15 10:11	1
Chloroform	1.0	U	1.0		ug/L			12/23/15 10:11	1
Chloromethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/23/15 10:11	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/23/15 10:11	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
Dibromomethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
Ethylbenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/23/15 10:11	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/23/15 10:11	1
Methyl tert-butyl ether	10	U	10		ug/L			12/23/15 10:11	1
Methylene Chloride	5.0	U	5.0		ug/L			12/23/15 10:11	1

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

Lab Sample ID: MB 680-415839/9
Matrix: Water
Analysis Batch: 415839

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	5.0	U	5.0		ug/L			12/23/15 10:11	1
4-Methyl-2-pentanone	10	U	10		ug/L			12/23/15 10:11	1
2-Butanone	10	U	10		ug/L			12/23/15 10:11	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
o-Xylene	1.0	U	1.0		ug/L			12/23/15 10:11	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/23/15 10:11	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
Styrene	1.0	U	1.0		ug/L			12/23/15 10:11	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/23/15 10:11	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/23/15 10:11	1
Toluene	1.0	U	1.0		ug/L			12/23/15 10:11	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/23/15 10:11	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/23/15 10:11	1
Trichloroethene	1.0	U	1.0		ug/L			12/23/15 10:11	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/23/15 10:11	1
Vinyl acetate	2.0	U	2.0		ug/L			12/23/15 10:11	1
Vinyl chloride	1.0	U	1.0		ug/L			12/23/15 10:11	1
Xylenes, Total	1.0	U	1.0		ug/L			12/23/15 10:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*70 - 130*		*12/23/15 10:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*		*12/23/15 10:11*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 130*		*12/23/15 10:11*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*12/23/15 10:11*	*1*

Lab Sample ID: LCS 680-415839/4
Matrix: Water
Analysis Batch: 415839

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	54.5		ug/L		109	80 - 120
1,1,1-Trichloroethane	50.0	50.4		ug/L		101	74 - 128
1,1,2,2-Tetrachloroethane	50.0	56.6		ug/L		113	72 - 128
1,1,2-Trichloroethane	50.0	57.1		ug/L		114	79 - 125
1,1-Dichloroethane	50.0	45.3		ug/L		91	80 - 120
1,1-Dichloroethene	50.0	46.4		ug/L		93	74 - 125
1,1-Dichloropropene	50.0	49.6		ug/L		99	78 - 127
1,2,3-Trichlorobenzene	50.0	42.1		ug/L		84	61 - 151
1,2,3-Trichloropropane	50.0	56.9		ug/L		114	70 - 132
1,2,4-Trichlorobenzene	50.0	41.3		ug/L		83	77 - 131
1,2,4-Trimethylbenzene	50.0	57.3		ug/L		115	80 - 124
1,2-Dibromo-3-Chloropropane	50.0	41.8		ug/L		84	59 - 141
1,2-Dichlorobenzene	50.0	50.1		ug/L		100	80 - 120
1,2-Dichloroethane	50.0	53.9		ug/L		108	75 - 130
1,2-Dichloroethene, Total	100	101		ug/L		101	80 - 120
1,2-Dichloropropane	50.0	50.0		ug/L		100	80 - 123

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

Lab Sample ID: LCS 680-415839/4
Matrix: Water
Analysis Batch: 415839

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	56.1		ug/L		112	80 - 120
1,3-Dichlorobenzene	50.0	48.5		ug/L		97	80 - 120
1,3-Dichloropropane	50.0	55.6		ug/L		111	78 - 127
1,4-Dichlorobenzene	50.0	48.2		ug/L		96	80 - 120
2,2-Dichloropropane	50.0	52.1		ug/L		104	72 - 133
2-Chlorotoluene	50.0	54.4		ug/L		109	77 - 121
2-Hexanone	250	306		ug/L		122	70 - 141
4-Chlorotoluene	50.0	55.7		ug/L		111	80 - 120
Acetone	250	289		ug/L		116	60 - 154
Benzene	50.0	49.8		ug/L		100	73 - 131
Bromobenzene	50.0	53.8		ug/L		108	79 - 124
Bromochloromethane	50.0	54.5		ug/L		109	77 - 122
Bromoform	50.0	48.0		ug/L		96	69 - 135
Bromodichloromethane	50.0	55.2		ug/L		110	77 - 129
Bromomethane	50.0	50.3		ug/L		101	20 - 180
Carbon disulfide	50.0	54.8		ug/L		110	73 - 127
Carbon tetrachloride	50.0	52.0		ug/L		104	75 - 130
Chlorobenzene	50.0	49.5		ug/L		99	80 - 120
Chloroethane	50.0	51.5		ug/L		103	50 - 151
Chloroform	50.0	50.1		ug/L		100	79 - 122
Chloromethane	50.0	34.3		ug/L		69	63 - 126
cis-1,2-Dichloroethene	50.0	50.9		ug/L		102	80 - 122
cis-1,3-Dichloropropene	50.0	55.4		ug/L		111	80 - 133
Dibromochloromethane	50.0	50.7		ug/L		101	71 - 136
Dibromomethane	50.0	53.9		ug/L		108	80 - 122
Dichlorodifluoromethane	50.0	57.2		ug/L		114	51 - 140
Ethylbenzene	50.0	50.4		ug/L		101	80 - 120
Hexachlorobutadiene	50.0	48.4		ug/L		97	77 - 129
Isopropylbenzene	50.0	53.3		ug/L		107	80 - 120
m-Xylene & p-Xylene	50.0	52.1		ug/L		104	80 - 120
Methyl tert-butyl ether	50.0	55.2		ug/L		110	74 - 135
Methylene Chloride	50.0	63.3		ug/L		127	76 - 129
Naphthalene	50.0	41.9		ug/L		84	69 - 148
4-Methyl-2-pentanone	250	305		ug/L		122	75 - 135
2-Butanone	250	293		ug/L		117	75 - 133
1,2-Dibromoethane	50.0	57.3		ug/L		115	77 - 131
n-Butylbenzene	50.0	49.7		ug/L		99	78 - 124
N-Propylbenzene	50.0	55.1		ug/L		110	80 - 120
o-Xylene	50.0	53.0		ug/L		106	80 - 120
p-Isopropyltoluene	50.0	49.5		ug/L		99	80 - 120
sec-Butylbenzene	50.0	55.9		ug/L		112	76 - 125
Styrene	50.0	54.3		ug/L		109	80 - 122
tert-Butylbenzene	50.0	56.2		ug/L		112	80 - 120
Tetrachloroethene	50.0	53.5		ug/L		107	77 - 123
Toluene	50.0	53.0		ug/L		106	80 - 122
trans-1,2-Dichloroethene	50.0	50.2		ug/L		100	78 - 123
trans-1,3-Dichloropropene	50.0	60.4		ug/L		121	74 - 140
Trichloroethene	50.0	49.4		ug/L		99	80 - 123

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

Lab Sample ID: LCS 680-415839/4
Matrix: Water
Analysis Batch: 415839

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	52.7		ug/L		105	58 - 145
Vinyl acetate	100	130		ug/L		130	15 - 190
Vinyl chloride	50.0	54.4		ug/L		109	68 - 132
Xylenes, Total	100	105		ug/L		105	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*108*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*
Dibromofluoromethane (Surr)	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: LCSD 680-415839/5
Matrix: Water
Analysis Batch: 415839

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	54.4		ug/L		109	80 - 120	0	20
1,1,1-Trichloroethane	50.0	51.9		ug/L		104	74 - 128	3	20
1,1,2,2-Tetrachloroethane	50.0	53.8		ug/L		108	72 - 128	5	20
1,1,2-Trichloroethane	50.0	53.2		ug/L		106	79 - 125	7	20
1,1-Dichloroethane	50.0	48.2		ug/L		96	80 - 120	6	20
1,1-Dichloroethene	50.0	49.4		ug/L		99	74 - 125	6	20
1,1-Dichloropropene	50.0	50.2		ug/L		100	78 - 127	1	20
1,2,3-Trichlorobenzene	50.0	42.1		ug/L		84	61 - 151	0	40
1,2,3-Trichloropropane	50.0	54.5		ug/L		109	70 - 132	4	30
1,2,4-Trichlorobenzene	50.0	41.4		ug/L		83	77 - 131	0	20
1,2,4-Trimethylbenzene	50.0	57.2		ug/L		114	80 - 124	0	20
1,2-Dibromo-3-Chloropropane	50.0	41.3		ug/L		83	59 - 141	1	30
1,2-Dichlorobenzene	50.0	49.6		ug/L		99	80 - 120	1	20
1,2-Dichloroethane	50.0	49.9		ug/L		100	75 - 130	8	20
1,2-Dichloroethene, Total	100	102		ug/L		102	80 - 120	0	20
1,2-Dichloropropane	50.0	49.5		ug/L		99	80 - 123	1	20
1,3,5-Trimethylbenzene	50.0	57.4		ug/L		115	80 - 120	2	20
1,3-Dichlorobenzene	50.0	49.0		ug/L		98	80 - 120	1	20
1,3-Dichloropropane	50.0	52.2		ug/L		104	78 - 127	6	20
1,4-Dichlorobenzene	50.0	47.7		ug/L		95	80 - 120	1	20
2,2-Dichloropropane	50.0	52.6		ug/L		105	72 - 133	1	20
2-Chlorotoluene	50.0	55.1		ug/L		110	77 - 121	1	20
2-Hexanone	250	279		ug/L		112	70 - 141	9	40
4-Chlorotoluene	50.0	56.2		ug/L		112	80 - 120	1	20
Acetone	250	257		ug/L		103	60 - 154	12	40
Benzene	50.0	49.0		ug/L		98	73 - 131	2	30
Bromobenzene	50.0	53.6		ug/L		107	79 - 124	0	20
Bromochloromethane	50.0	52.3		ug/L		105	77 - 122	4	20
Bromoform	50.0	45.0		ug/L		90	69 - 135	6	20
Bromodichloromethane	50.0	52.3		ug/L		105	77 - 129	5	20
Bromomethane	50.0	56.2		ug/L		112	20 - 180	11	40
Carbon disulfide	50.0	60.7		ug/L		121	73 - 127	10	20

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

Lab Sample ID: LCSD 680-415839/5
Matrix: Water
Analysis Batch: 415839

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride			50.0	53.7		ug/L		107	75 - 130	3	20
Chlorobenzene			50.0	49.9		ug/L		100	80 - 120	1	20
Chloroethane			50.0	55.5		ug/L		111	50 - 151	7	30
Chloroform			50.0	48.8		ug/L		98	79 - 122	2	20
Chloromethane			50.0	37.7		ug/L		75	63 - 126	9	30
cis-1,2-Dichloroethene			50.0	50.5		ug/L		101	80 - 122	1	20
cis-1,3-Dichloropropene			50.0	53.1		ug/L		106	80 - 133	4	20
Dibromochloromethane			50.0	47.5		ug/L		95	71 - 136	7	20
Dibromomethane			50.0	50.0		ug/L		100	80 - 122	7	20
Dichlorodifluoromethane			50.0	59.1		ug/L		118	51 - 140	3	40
Ethylbenzene			50.0	51.2		ug/L		102	80 - 120	2	20
Hexachlorobutadiene			50.0	50.7		ug/L		101	77 - 129	5	30
Isopropylbenzene			50.0	54.7		ug/L		109	80 - 120	3	20
m-Xylene & p-Xylene			50.0	53.1		ug/L		106	80 - 120	2	20
Methyl tert-butyl ether			50.0	50.8		ug/L		102	74 - 135	8	20
Methylene Chloride			50.0	61.6		ug/L		123	76 - 129	3	20
Naphthalene			50.0	40.8		ug/L		82	69 - 148	3	40
4-Methyl-2-pentanone			250	282		ug/L		113	75 - 135	8	30
2-Butanone			250	244		ug/L		98	75 - 133	18	30
1,2-Dibromoethane			50.0	53.8		ug/L		108	77 - 131	6	30
n-Butylbenzene			50.0	52.1		ug/L		104	78 - 124	5	20
N-Propylbenzene			50.0	56.4		ug/L		113	80 - 120	2	20
o-Xylene			50.0	53.5		ug/L		107	80 - 120	1	20
p-Isopropyltoluene			50.0	52.2		ug/L		104	80 - 120	5	20
sec-Butylbenzene			50.0	58.2		ug/L		116	76 - 125	4	30
Styrene			50.0	54.4		ug/L		109	80 - 122	0	20
tert-Butylbenzene			50.0	58.0		ug/L		116	80 - 120	3	20
Tetrachloroethene			50.0	54.2		ug/L		108	77 - 123	1	20
Toluene			50.0	53.0		ug/L		106	80 - 122	0	20
trans-1,2-Dichloroethene			50.0	51.0		ug/L		102	78 - 123	2	20
trans-1,3-Dichloropropene			50.0	56.1		ug/L		112	74 - 140	7	20
Trichloroethene			50.0	50.3		ug/L		101	80 - 123	2	20
Trichlorofluoromethane			50.0	56.7		ug/L		113	58 - 145	7	30
Vinyl acetate			100	133		ug/L		133	15 - 190	3	50
Vinyl chloride			50.0	57.6		ug/L		115	68 - 132	6	30
Xylenes, Total			100	107		ug/L		107	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*107*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*

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

Lab Sample ID: MB 680-416068/11
Matrix: Water
Analysis Batch: 416068

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/24/15 10:42	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/24/15 10:42	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/24/15 10:42	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/24/15 10:42	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/24/15 10:42	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/24/15 10:42	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/24/15 10:42	1
2-Hexanone	10	U	10		ug/L			12/24/15 10:42	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/24/15 10:42	1
Acetone	10	U	10		ug/L			12/24/15 10:42	1
Benzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
Bromobenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
Bromochloromethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
Bromoform	1.0	U	1.0		ug/L			12/24/15 10:42	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
Bromomethane	5.0	U	5.0		ug/L			12/24/15 10:42	1
Carbon disulfide	2.0	U	2.0		ug/L			12/24/15 10:42	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/24/15 10:42	1
Chlorobenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
Chloroethane	5.0	U	5.0		ug/L			12/24/15 10:42	1
Chloroform	1.0	U	1.0		ug/L			12/24/15 10:42	1
Chloromethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/24/15 10:42	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/24/15 10:42	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
Dibromomethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
Ethylbenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/24/15 10:42	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/24/15 10:42	1
Methyl tert-butyl ether	10	U	10		ug/L			12/24/15 10:42	1
Methylene Chloride	5.0	U	5.0		ug/L			12/24/15 10:42	1

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

Lab Sample ID: MB 680-416068/11
Matrix: Water
Analysis Batch: 416068

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	5.0	U	5.0		ug/L			12/24/15 10:42	1
4-Methyl-2-pentanone	10	U	10		ug/L			12/24/15 10:42	1
2-Butanone	10	U	10		ug/L			12/24/15 10:42	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
o-Xylene	1.0	U	1.0		ug/L			12/24/15 10:42	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/24/15 10:42	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
Styrene	1.0	U	1.0		ug/L			12/24/15 10:42	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/24/15 10:42	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/24/15 10:42	1
Toluene	1.0	U	1.0		ug/L			12/24/15 10:42	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/24/15 10:42	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/24/15 10:42	1
Trichloroethene	1.0	U	1.0		ug/L			12/24/15 10:42	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/24/15 10:42	1
Vinyl acetate	2.0	U	2.0		ug/L			12/24/15 10:42	1
Vinyl chloride	1.0	U	1.0		ug/L			12/24/15 10:42	1
Xylenes, Total	1.0	U	1.0		ug/L			12/24/15 10:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*113*		*70 - 130*		*12/24/15 10:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*		*12/24/15 10:42*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*12/24/15 10:42*	*1*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*		*12/24/15 10:42*	*1*

Lab Sample ID: LCS 680-416068/4
Matrix: Water
Analysis Batch: 416068

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	48.8		ug/L		98	80 - 120
1,1,1-Trichloroethane	50.0	50.3		ug/L		101	74 - 128
1,1,2,2-Tetrachloroethane	50.0	47.1		ug/L		94	72 - 128
1,1,2-Trichloroethane	50.0	48.2		ug/L		96	79 - 125
1,1-Dichloroethane	50.0	50.9		ug/L		102	80 - 120
1,1-Dichloroethene	50.0	53.1		ug/L		106	74 - 125
1,1-Dichloropropene	50.0	52.3		ug/L		105	78 - 127
1,2,3-Trichlorobenzene	50.0	58.4		ug/L		117	61 - 151
1,2,3-Trichloropropane	50.0	47.2		ug/L		94	70 - 132
1,2,4-Trichlorobenzene	50.0	59.4		ug/L		119	77 - 131
1,2,4-Trimethylbenzene	50.0	53.0		ug/L		106	80 - 124
1,2-Dibromo-3-Chloropropane	50.0	57.4		ug/L		115	59 - 141
1,2-Dichlorobenzene	50.0	50.8		ug/L		102	80 - 120
1,2-Dichloroethane	50.0	45.1		ug/L		90	75 - 130
1,2-Dichloroethene, Total	100	104		ug/L		104	80 - 120
1,2-Dichloropropane	50.0	52.1		ug/L		104	80 - 123

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

Lab Sample ID: LCS 680-416068/4
Matrix: Water
Analysis Batch: 416068

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	53.4		ug/L		107	80 - 120
1,3-Dichlorobenzene	50.0	52.8		ug/L		106	80 - 120
1,3-Dichloropropane	50.0	48.8		ug/L		98	78 - 127
1,4-Dichlorobenzene	50.0	54.3		ug/L		109	80 - 120
2,2-Dichloropropane	50.0	57.9		ug/L		116	72 - 133
2-Chlorotoluene	50.0	49.3		ug/L		99	77 - 121
2-Hexanone	250	265		ug/L		106	70 - 141
4-Chlorotoluene	50.0	49.3		ug/L		99	80 - 120
Acetone	250	217		ug/L		87	60 - 154
Benzene	50.0	53.6		ug/L		107	73 - 131
Bromobenzene	50.0	47.0		ug/L		94	79 - 124
Bromochloromethane	50.0	47.6		ug/L		95	77 - 122
Bromoform	50.0	46.2		ug/L		92	69 - 135
Bromodichloromethane	50.0	49.8		ug/L		100	77 - 129
Bromomethane	50.0	43.7		ug/L		87	20 - 180
Carbon disulfide	50.0	53.7		ug/L		107	73 - 127
Carbon tetrachloride	50.0	50.7		ug/L		101	75 - 130
Chlorobenzene	50.0	48.2		ug/L		96	80 - 120
Chloroethane	50.0	58.1		ug/L		116	50 - 151
Chloroform	50.0	48.7		ug/L		97	79 - 122
Chloromethane	50.0	64.6	*	ug/L		129	63 - 126
cis-1,2-Dichloroethene	50.0	53.1		ug/L		106	80 - 122
cis-1,3-Dichloropropene	50.0	54.6		ug/L		109	80 - 133
Dibromochloromethane	50.0	49.7		ug/L		99	71 - 136
Dibromomethane	50.0	47.2		ug/L		94	80 - 122
Dichlorodifluoromethane	50.0	57.8		ug/L		116	51 - 140
Ethylbenzene	50.0	51.8		ug/L		104	80 - 120
Hexachlorobutadiene	50.0	51.2		ug/L		102	77 - 129
Isopropylbenzene	50.0	55.0		ug/L		110	80 - 120
m-Xylene & p-Xylene	50.0	52.4		ug/L		105	80 - 120
Methyl tert-butyl ether	50.0	49.6		ug/L		99	74 - 135
Methylene Chloride	50.0	50.9		ug/L		102	76 - 129
Naphthalene	50.0	73.5		ug/L		147	69 - 148
4-Methyl-2-pentanone	250	268		ug/L		107	75 - 135
2-Butanone	250	234		ug/L		94	75 - 133
1,2-Dibromoethane	50.0	46.7		ug/L		93	77 - 131
n-Butylbenzene	50.0	56.4		ug/L		113	78 - 124
N-Propylbenzene	50.0	53.1		ug/L		106	80 - 120
o-Xylene	50.0	51.2		ug/L		102	80 - 120
p-Isopropyltoluene	50.0	59.1		ug/L		118	80 - 120
sec-Butylbenzene	50.0	53.3		ug/L		107	76 - 125
Styrene	50.0	54.3		ug/L		109	80 - 122
tert-Butylbenzene	50.0	51.3		ug/L		103	80 - 120
Tetrachloroethene	50.0	49.2		ug/L		98	77 - 123
Toluene	50.0	52.8		ug/L		106	80 - 122
trans-1,2-Dichloroethene	50.0	50.5		ug/L		101	78 - 123
trans-1,3-Dichloropropene	50.0	51.5		ug/L		103	74 - 140
Trichloroethene	50.0	51.0		ug/L		102	80 - 123

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

Lab Sample ID: LCS 680-416068/4
Matrix: Water
Analysis Batch: 416068

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	51.7		ug/L		103	58 - 145
Vinyl acetate	100	167		ug/L		167	15 - 190
Vinyl chloride	50.0	59.4		ug/L		119	68 - 132
Xylenes, Total	100	104		ug/L		104	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*101*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*

Lab Sample ID: LCSD 680-416068/5
Matrix: Water
Analysis Batch: 416068

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	50.9		ug/L		102	80 - 120	4	20
1,1,1-Trichloroethane	50.0	50.2		ug/L		100	74 - 128	0	20
1,1,2,2-Tetrachloroethane	50.0	47.9		ug/L		96	72 - 128	2	20
1,1,2-Trichloroethane	50.0	45.5		ug/L		91	79 - 125	6	20
1,1-Dichloroethane	50.0	52.1		ug/L		104	80 - 120	2	20
1,1-Dichloroethene	50.0	53.2		ug/L		106	74 - 125	0	20
1,1-Dichloropropene	50.0	49.6		ug/L		99	78 - 127	5	20
1,2,3-Trichlorobenzene	50.0	72.9		ug/L		146	61 - 151	22	40
1,2,3-Trichloropropane	50.0	48.2		ug/L		96	70 - 132	2	30
1,2,4-Trichlorobenzene	50.0	67.5	*	ug/L		135	77 - 131	13	20
1,2,4-Trimethylbenzene	50.0	53.4		ug/L		107	80 - 124	1	20
1,2-Dibromo-3-Chloropropane	50.0	59.7		ug/L		119	59 - 141	4	30
1,2-Dichlorobenzene	50.0	51.6		ug/L		103	80 - 120	2	20
1,2-Dichloroethane	50.0	46.3		ug/L		93	75 - 130	3	20
1,2-Dichloroethene, Total	100	103		ug/L		103	80 - 120	0	20
1,2-Dichloropropane	50.0	51.9		ug/L		104	80 - 123	0	20
1,3,5-Trimethylbenzene	50.0	53.4		ug/L		107	80 - 120	0	20
1,3-Dichlorobenzene	50.0	52.8		ug/L		106	80 - 120	0	20
1,3-Dichloropropane	50.0	47.1		ug/L		94	78 - 127	3	20
1,4-Dichlorobenzene	50.0	55.5		ug/L		111	80 - 120	2	20
2,2-Dichloropropane	50.0	58.6		ug/L		117	72 - 133	1	20
2-Chlorotoluene	50.0	48.9		ug/L		98	77 - 121	1	20
2-Hexanone	250	260		ug/L		104	70 - 141	2	40
4-Chlorotoluene	50.0	50.1		ug/L		100	80 - 120	1	20
Acetone	250	240		ug/L		96	60 - 154	10	40
Benzene	50.0	51.5		ug/L		103	73 - 131	4	30
Bromobenzene	50.0	48.8		ug/L		98	79 - 124	4	20
Bromochloromethane	50.0	49.3		ug/L		99	77 - 122	3	20
Bromoform	50.0	51.5		ug/L		103	69 - 135	11	20
Bromodichloromethane	50.0	49.9		ug/L		100	77 - 129	0	20
Bromomethane	50.0	48.6		ug/L		97	20 - 180	11	40
Carbon disulfide	50.0	53.9		ug/L		108	73 - 127	0	20

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

Lab Sample ID: LCSD 680-416068/5
Matrix: Water
Analysis Batch: 416068

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride			50.0	50.5		ug/L		101	75 - 130	0	20
Chlorobenzene			50.0	47.6		ug/L		95	80 - 120	1	20
Chloroethane			50.0	61.4		ug/L		123	50 - 151	5	30
Chloroform			50.0	49.5		ug/L		99	79 - 122	2	20
Chloromethane			50.0	65.2	*	ug/L		130	63 - 126	1	30
cis-1,2-Dichloroethene			50.0	53.3		ug/L		107	80 - 122	0	20
cis-1,3-Dichloropropene			50.0	52.2		ug/L		104	80 - 133	4	20
Dibromochloromethane			50.0	49.5		ug/L		99	71 - 136	1	20
Dibromomethane			50.0	48.5		ug/L		97	80 - 122	3	20
Dichlorodifluoromethane			50.0	57.2		ug/L		114	51 - 140	1	40
Ethylbenzene			50.0	51.0		ug/L		102	80 - 120	1	20
Hexachlorobutadiene			50.0	56.1		ug/L		112	77 - 129	9	30
Isopropylbenzene			50.0	54.6		ug/L		109	80 - 120	1	20
m-Xylene & p-Xylene			50.0	52.9		ug/L		106	80 - 120	1	20
Methyl tert-butyl ether			50.0	52.2		ug/L		104	74 - 135	5	20
Methylene Chloride			50.0	52.9		ug/L		106	76 - 129	4	20
Naphthalene			50.0	82.8	*	ug/L		166	69 - 148	12	40
4-Methyl-2-pentanone			250	260		ug/L		104	75 - 135	3	30
2-Butanone			250	241		ug/L		96	75 - 133	3	30
1,2-Dibromoethane			50.0	46.3		ug/L		93	77 - 131	1	30
n-Butylbenzene			50.0	53.7		ug/L		107	78 - 124	5	20
N-Propylbenzene			50.0	53.3		ug/L		107	80 - 120	0	20
o-Xylene			50.0	53.6		ug/L		107	80 - 120	4	20
p-Isopropyltoluene			50.0	57.5		ug/L		115	80 - 120	3	20
sec-Butylbenzene			50.0	52.3		ug/L		105	76 - 125	2	30
Styrene			50.0	55.1		ug/L		110	80 - 122	1	20
tert-Butylbenzene			50.0	53.4		ug/L		107	80 - 120	4	20
Tetrachloroethene			50.0	48.4		ug/L		97	77 - 123	2	20
Toluene			50.0	50.6		ug/L		101	80 - 122	4	20
trans-1,2-Dichloroethene			50.0	50.2		ug/L		100	78 - 123	1	20
trans-1,3-Dichloropropene			50.0	51.5		ug/L		103	74 - 140	0	20
Trichloroethene			50.0	51.7		ug/L		103	80 - 123	1	20
Trichlorofluoromethane			50.0	53.6		ug/L		107	58 - 145	4	30
Vinyl acetate			100	175		ug/L		175	15 - 190	5	50
Vinyl chloride			50.0	60.4		ug/L		121	68 - 132	2	30
Xylenes, Total			100	107		ug/L		107	80 - 120	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*104*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*

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

Lab Sample ID: MB 680-416269/9
Matrix: Water
Analysis Batch: 416269

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/28/15 11:01	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/28/15 11:01	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/28/15 11:01	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,2-Dichloroethene, Total	2.0	U	2.0		ug/L			12/28/15 11:01	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,3-Dichloropropane	1.0	U	1.0		ug/L			12/28/15 11:01	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/28/15 11:01	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/28/15 11:01	1
2-Hexanone	10	U	10		ug/L			12/28/15 11:01	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/28/15 11:01	1
Acetone	10	U	10		ug/L			12/28/15 11:01	1
Benzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
Bromobenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
Bromochloromethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
Bromoform	1.0	U	1.0		ug/L			12/28/15 11:01	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
Bromomethane	5.0	U	5.0		ug/L			12/28/15 11:01	1
Carbon disulfide	2.0	U	2.0		ug/L			12/28/15 11:01	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/28/15 11:01	1
Chlorobenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
Chloroethane	5.0	U	5.0		ug/L			12/28/15 11:01	1
Chloroform	1.0	U	1.0		ug/L			12/28/15 11:01	1
Chloromethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/28/15 11:01	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/28/15 11:01	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
Dibromomethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
Ethylbenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
Hexachlorobutadiene	5.0	U	5.0		ug/L			12/28/15 11:01	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
m-Xylene & p-Xylene	1.0	U	1.0		ug/L			12/28/15 11:01	1
Methyl tert-butyl ether	10	U	10		ug/L			12/28/15 11:01	1
Methylene Chloride	5.0	U	5.0		ug/L			12/28/15 11:01	1

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

Lab Sample ID: MB 680-416269/9
Matrix: Water
Analysis Batch: 416269

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	5.0	U	5.0		ug/L			12/28/15 11:01	1
4-Methyl-2-pentanone	10	U	10		ug/L			12/28/15 11:01	1
2-Butanone	10	U	10		ug/L			12/28/15 11:01	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
n-Butylbenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
N-Propylbenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
o-Xylene	1.0	U	1.0		ug/L			12/28/15 11:01	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/28/15 11:01	1
sec-Butylbenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
Styrene	1.0	U	1.0		ug/L			12/28/15 11:01	1
tert-Butylbenzene	1.0	U	1.0		ug/L			12/28/15 11:01	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/28/15 11:01	1
Toluene	1.0	U	1.0		ug/L			12/28/15 11:01	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/28/15 11:01	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/28/15 11:01	1
Trichloroethene	1.0	U	1.0		ug/L			12/28/15 11:01	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/28/15 11:01	1
Vinyl acetate	2.0	U	2.0		ug/L			12/28/15 11:01	1
Vinyl chloride	1.0	U	1.0		ug/L			12/28/15 11:01	1
Xylenes, Total	1.0	U	1.0		ug/L			12/28/15 11:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*107*		*70 - 130*		*12/28/15 11:01*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*		*12/28/15 11:01*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*		*12/28/15 11:01*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*12/28/15 11:01*	*1*

Lab Sample ID: LCS 680-416269/4
Matrix: Water
Analysis Batch: 416269

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	54.6		ug/L		109	80 - 120
1,1,1-Trichloroethane	50.0	51.5		ug/L		103	74 - 128
1,1,2,2-Tetrachloroethane	50.0	48.0		ug/L		96	72 - 128
1,1,2-Trichloroethane	50.0	50.7		ug/L		101	79 - 125
1,1-Dichloroethane	50.0	44.7		ug/L		89	80 - 120
1,1-Dichloroethene	50.0	42.9		ug/L		86	74 - 125
1,1-Dichloropropene	50.0	50.0		ug/L		100	78 - 127
1,2,3-Trichlorobenzene	50.0	57.0		ug/L		114	61 - 151
1,2,3-Trichloropropane	50.0	50.4		ug/L		101	70 - 132
1,2,4-Trichlorobenzene	50.0	57.1		ug/L		114	77 - 131
1,2,4-Trimethylbenzene	50.0	53.7		ug/L		107	80 - 124
1,2-Dibromo-3-Chloropropane	50.0	47.2		ug/L		94	59 - 141
1,2-Dichlorobenzene	50.0	51.5		ug/L		103	80 - 120
1,2-Dichloroethane	50.0	48.8		ug/L		98	75 - 130
1,2-Dichloroethene, Total	100	89.9		ug/L		90	80 - 120
1,2-Dichloropropane	50.0	48.7		ug/L		97	80 - 123

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

Lab Sample ID: LCS 680-416269/4
Matrix: Water
Analysis Batch: 416269

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	54.5		ug/L		109	80 - 120
1,3-Dichlorobenzene	50.0	51.9		ug/L		104	80 - 120
1,3-Dichloropropane	50.0	50.1		ug/L		100	78 - 127
1,4-Dichlorobenzene	50.0	51.1		ug/L		102	80 - 120
2,2-Dichloropropane	50.0	77.6	*	ug/L		155	72 - 133
2-Chlorotoluene	50.0	51.0		ug/L		102	77 - 121
2-Hexanone	250	249		ug/L		99	70 - 141
4-Chlorotoluene	50.0	51.9		ug/L		104	80 - 120
Acetone	250	185		ug/L		74	60 - 154
Benzene	50.0	48.6		ug/L		97	73 - 131
Bromobenzene	50.0	51.6		ug/L		103	79 - 124
Bromochloromethane	50.0	43.0		ug/L		86	77 - 122
Bromoform	50.0	41.6		ug/L		83	69 - 135
Bromodichloromethane	50.0	52.1		ug/L		104	77 - 129
Bromomethane	50.0	41.0		ug/L		82	20 - 180
Carbon disulfide	50.0	41.2		ug/L		82	73 - 127
Carbon tetrachloride	50.0	46.9		ug/L		94	75 - 130
Chlorobenzene	50.0	49.4		ug/L		99	80 - 120
Chloroethane	50.0	46.9		ug/L		94	50 - 151
Chloroform	50.0	46.6		ug/L		93	79 - 122
Chloromethane	50.0	42.1		ug/L		84	63 - 126
cis-1,2-Dichloroethene	50.0	47.1		ug/L		94	80 - 122
cis-1,3-Dichloropropene	50.0	58.0		ug/L		116	80 - 133
Dibromochloromethane	50.0	55.4		ug/L		111	71 - 136
Dibromomethane	50.0	47.9		ug/L		96	80 - 122
Dichlorodifluoromethane	50.0	49.0		ug/L		98	51 - 140
Ethylbenzene	50.0	50.3		ug/L		101	80 - 120
Hexachlorobutadiene	50.0	55.6		ug/L		111	77 - 129
Isopropylbenzene	50.0	53.7		ug/L		107	80 - 120
m-Xylene & p-Xylene	50.0	50.9		ug/L		102	80 - 120
Methyl tert-butyl ether	50.0	44.4		ug/L		89	74 - 135
Methylene Chloride	50.0	40.0		ug/L		80	76 - 129
Naphthalene	50.0	60.5		ug/L		121	69 - 148
4-Methyl-2-pentanone	250	249		ug/L		99	75 - 135
2-Butanone	250	196		ug/L		78	75 - 133
1,2-Dibromoethane	50.0	52.4		ug/L		105	77 - 131
n-Butylbenzene	50.0	57.2		ug/L		114	78 - 124
N-Propylbenzene	50.0	54.9		ug/L		110	80 - 120
o-Xylene	50.0	50.9		ug/L		102	80 - 120
p-Isopropyltoluene	50.0	56.2		ug/L		112	80 - 120
sec-Butylbenzene	50.0	55.3		ug/L		111	76 - 125
Styrene	50.0	51.4		ug/L		103	80 - 122
tert-Butylbenzene	50.0	55.4		ug/L		111	80 - 120
Tetrachloroethene	50.0	54.9		ug/L		110	77 - 123
Toluene	50.0	52.3		ug/L		105	80 - 122
trans-1,2-Dichloroethene	50.0	42.8		ug/L		86	78 - 123
trans-1,3-Dichloropropene	50.0	49.4		ug/L		99	74 - 140
Trichloroethene	50.0	53.1		ug/L		106	80 - 123

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

Lab Sample ID: LCS 680-416269/4
Matrix: Water
Analysis Batch: 416269

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	50.0		ug/L		100	58 - 145
Vinyl acetate	100	153		ug/L		153	15 - 190
Vinyl chloride	50.0	45.3		ug/L		91	68 - 132
Xylenes, Total	100	102		ug/L		102	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*94*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Dibromofluoromethane (Surr)	*90*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 680-416269/5
Matrix: Water
Analysis Batch: 416269

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	54.2		ug/L		108	80 - 120	1	20
1,1,1-Trichloroethane	50.0	55.0		ug/L		110	74 - 128	7	20
1,1,2,2-Tetrachloroethane	50.0	48.3		ug/L		97	72 - 128	1	20
1,1,2-Trichloroethane	50.0	50.1		ug/L		100	79 - 125	1	20
1,1-Dichloroethane	50.0	48.0		ug/L		96	80 - 120	7	20
1,1-Dichloroethene	50.0	49.0		ug/L		98	74 - 125	13	20
1,1-Dichloropropene	50.0	51.0		ug/L		102	78 - 127	2	20
1,2,3-Trichlorobenzene	50.0	62.5		ug/L		125	61 - 151	9	40
1,2,3-Trichloropropane	50.0	51.4		ug/L		103	70 - 132	2	30
1,2,4-Trichlorobenzene	50.0	59.6		ug/L		119	77 - 131	4	20
1,2,4-Trimethylbenzene	50.0	54.1		ug/L		108	80 - 124	1	20
1,2-Dibromo-3-Chloropropane	50.0	47.7		ug/L		95	59 - 141	1	30
1,2-Dichlorobenzene	50.0	52.2		ug/L		104	80 - 120	1	20
1,2-Dichloroethane	50.0	48.1		ug/L		96	75 - 130	1	20
1,2-Dichloroethene, Total	100	99.0		ug/L		99	80 - 120	10	20
1,2-Dichloropropane	50.0	48.2		ug/L		96	80 - 123	1	20
1,3,5-Trimethylbenzene	50.0	55.0		ug/L		110	80 - 120	1	20
1,3-Dichlorobenzene	50.0	52.1		ug/L		104	80 - 120	0	20
1,3-Dichloropropane	50.0	49.2		ug/L		98	78 - 127	2	20
1,4-Dichlorobenzene	50.0	51.1		ug/L		102	80 - 120	0	20
2,2-Dichloropropane	50.0	80.3	*	ug/L		161	72 - 133	3	20
2-Chlorotoluene	50.0	51.4		ug/L		103	77 - 121	1	20
2-Hexanone	250	248		ug/L		99	70 - 141	0	40
4-Chlorotoluene	50.0	51.1		ug/L		102	80 - 120	1	20
Acetone	250	210		ug/L		84	60 - 154	13	40
Benzene	50.0	48.4		ug/L		97	73 - 131	0	30
Bromobenzene	50.0	52.0		ug/L		104	79 - 124	1	20
Bromochloromethane	50.0	47.4		ug/L		95	77 - 122	10	20
Bromoform	50.0	43.2		ug/L		86	69 - 135	4	20
Bromodichloromethane	50.0	51.1		ug/L		102	77 - 129	2	20
Bromomethane	50.0	45.9		ug/L		92	20 - 180	11	40
Carbon disulfide	50.0	47.9		ug/L		96	73 - 127	15	20

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

Lab Sample ID: LCSD 680-416269/5
Matrix: Water
Analysis Batch: 416269

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride			50.0	48.3		ug/L		97	75 - 130	3	20
Chlorobenzene			50.0	49.2		ug/L		98	80 - 120	0	20
Chloroethane			50.0	51.6		ug/L		103	50 - 151	10	30
Chloroform			50.0	49.3		ug/L		99	79 - 122	6	20
Chloromethane			50.0	41.4		ug/L		83	63 - 126	2	30
cis-1,2-Dichloroethene			50.0	50.6		ug/L		101	80 - 122	7	20
cis-1,3-Dichloropropene			50.0	56.4		ug/L		113	80 - 133	3	20
Dibromochloromethane			50.0	54.6		ug/L		109	71 - 136	2	20
Dibromomethane			50.0	47.7		ug/L		95	80 - 122	0	20
Dichlorodifluoromethane			50.0	50.2		ug/L		100	51 - 140	2	40
Ethylbenzene			50.0	51.2		ug/L		102	80 - 120	2	20
Hexachlorobutadiene			50.0	59.4		ug/L		119	77 - 129	7	30
Isopropylbenzene			50.0	54.4		ug/L		109	80 - 120	1	20
m-Xylene & p-Xylene			50.0	50.5		ug/L		101	80 - 120	1	20
Methyl tert-butyl ether			50.0	47.4		ug/L		95	74 - 135	7	20
Methylene Chloride			50.0	45.1		ug/L		90	76 - 129	12	20
Naphthalene			50.0	64.9		ug/L		130	69 - 148	7	40
4-Methyl-2-pentanone			250	241		ug/L		96	75 - 135	3	30
2-Butanone			250	215		ug/L		86	75 - 133	9	30
1,2-Dibromoethane			50.0	52.3		ug/L		105	77 - 131	0	30
n-Butylbenzene			50.0	58.3		ug/L		117	78 - 124	2	20
N-Propylbenzene			50.0	55.9		ug/L		112	80 - 120	2	20
o-Xylene			50.0	51.5		ug/L		103	80 - 120	1	20
p-Isopropyltoluene			50.0	56.8		ug/L		114	80 - 120	1	20
sec-Butylbenzene			50.0	56.0		ug/L		112	76 - 125	1	30
Styrene			50.0	52.0		ug/L		104	80 - 122	1	20
tert-Butylbenzene			50.0	56.2		ug/L		112	80 - 120	2	20
Tetrachloroethene			50.0	55.4		ug/L		111	77 - 123	1	20
Toluene			50.0	52.8		ug/L		106	80 - 122	1	20
trans-1,2-Dichloroethene			50.0	48.4		ug/L		97	78 - 123	12	20
trans-1,3-Dichloropropene			50.0	48.0		ug/L		96	74 - 140	3	20
Trichloroethene			50.0	53.1		ug/L		106	80 - 123	0	20
Trichlorofluoromethane			50.0	50.7		ug/L		101	58 - 145	1	30
Vinyl acetate			100	164		ug/L		164	15 - 190	7	50
Vinyl chloride			50.0	45.2		ug/L		90	68 - 132	0	30
Xylenes, Total			100	102		ug/L		102	80 - 120	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*95*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*
Dibromofluoromethane (Surr)	*94*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

GC/MS VOA

Analysis Batch: 415839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-120130-1	RW-10	Total/NA	Water	8260B	
680-120130-2 - DL	RW-7	Total/NA	Water	8260B	
680-120130-4	RW-6	Total/NA	Water	8260B	
680-120130-5	RW-5	Total/NA	Water	8260B	
680-120130-6	RW-4	Total/NA	Water	8260B	
680-120130-7	RW-1	Total/NA	Water	8260B	
LCS 680-415839/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-415839/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-415839/9	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 416068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-120130-1	RW-10	Total/NA	Water	8260B	
680-120130-2	RW-7	Total/NA	Water	8260B	
680-120130-3	RW-8	Total/NA	Water	8260B	
680-120130-5	RW-5	Total/NA	Water	8260B	
LCS 680-416068/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-416068/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-416068/11	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 416269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-120130-3 - DL	RW-8	Total/NA	Water	8260B	
680-120130-6 - DL	RW-4	Total/NA	Water	8260B	
LCS 680-416269/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-416269/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-416269/9	Method Blank	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-10 — Lab Sample ID: 680-120130-1

Date Collected: 12/15/15 09:35
Date Received: 12/16/15 09:17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		25	415839	12/23/15 14:38	CEJ	TAL SAV
Total/NA	Analysis	8260B		50	416068	12/24/15 15:23	RWB	TAL SAV

Client Sample ID: RW-7 — Lab Sample ID: 680-120130-2

Date Collected: 12/15/15 10:25
Date Received: 12/16/15 09:17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	DL	200	415839	12/23/15 16:00	CEJ	TAL SAV
Total/NA	Analysis	8260B		20	416068	12/24/15 14:40	RWB	TAL SAV

Client Sample ID: RW-8 — Lab Sample ID: 680-120130-3

Date Collected: 12/15/15 10:35
Date Received: 12/16/15 09:17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		50	416068	12/24/15 15:45	RWB	TAL SAV
Total/NA	Analysis	8260B	DL	100	416269	12/28/15 13:39	RWB	TAL SAV

Client Sample ID: RW-6 — Lab Sample ID: 680-120130-4

Date Collected: 12/15/15 10:45
Date Received: 12/16/15 09:17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	415839	12/23/15 16:20	CEJ	TAL SAV

Client Sample ID: RW-5 — Lab Sample ID: 680-120130-5

Date Collected: 12/15/15 11:20
Date Received: 12/16/15 09:17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	415839	12/23/15 15:19	CEJ	TAL SAV
Total/NA	Analysis	8260B		10	416068	12/24/15 16:06	RWB	TAL SAV

Client Sample ID: RW-4 — Lab Sample ID: 680-120130-6

Date Collected: 12/15/15 11:40
Date Received: 12/16/15 09:17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	415839	12/23/15 16:41	CEJ	TAL SAV
Total/NA	Analysis	8260B	DL	20	416269	12/28/15 13:17	RWB	TAL SAV

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Client Sample ID: RW-1

Date Collected: 12/15/15 12:00
Date Received: 12/16/15 09:17

Lab Sample ID: 680-120130-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	415839	12/23/15 15:39	CEJ	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
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TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jim Shilliday	Site Contact: Dave Twamley	Date: 12/15/2015	COC No:
ARCADIS	Tel/Fax: 919-854-1282	Lab Contact: Jerry Lanier	Carrier: Fed Ex	1 of 1 COCs
801 Corporate Center Drive, Suite 300	Analysis Turnaround Time			Job No.
Raleigh, NC 27607	Calendar (C) or Work Days (W) _____			
919-854-1282	TAT if different from Below _____			
919-854-5448	■ 2 weeks			SDG No.
Project Name: Brenntag Durham - Annual GW Monitoring	☐ 1 week			
Site: Brenntag Durham Facility	☐ 2 days			
P O # NC000368.0025.00001	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs + Acetone (Method 8260B)	Sample Specific Notes:
RW-10	12/15/15	09:35	Grab	GW	3	N	X	
RW-7		10:25			3	N	X	
RW-8		10:35			3	N	X	
RW-6		10:45			3	N	X	
RW-5		11:20			3	N	X	
RW-4		11:40			3	N	X	
RW-1		12:00			3	N	X	
							2	

680-120130 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *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:

680-120130

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	ARCADIS	12/15/2015 14:00	Fed Ex	- -	12/15/2015 14:00
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TA	Date/Time: 12/16/15 09:17
Relinquished by:	Company:	Date/Time:	Received by: 12/16	Company:	Date/Time:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-120130-1

Login Number: 120130
List Number: 1
Creator: Kicklighter, Marilyn D

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham - Annual GW Monitoring

TestAmerica Job ID: 680-120130-1

Laboratory: TestAmerica Savannah

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

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-17
A2LA	ISO/IEC 17025		399.01	02-28-17
Alabama	State Program	4	41450	06-30-16
Alaska (UST)	State Program	10	UST-104	11-05-16
Arkansas DEQ	State Program	6	88-0692	01-31-16 *
California	State Program	9	2939	07-31-16
Colorado	State Program	8	N/A	12-31-15 *
Connecticut	State Program	1	PH-0161	03-31-17
Florida	NELAP	4	E87052	06-30-16
GA Dept. of Agriculture	State Program	4	N/A	06-12-17
Georgia	State Program	4	803	06-30-16
Guam	State Program	9	14-004r	04-16-16
Hawaii	State Program	9	N/A	06-30-16
Illinois	NELAP	5	200022	11-30-16
Indiana	State Program	5	N/A	06-30-16
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-16
Kentucky (UST)	State Program	4	18	06-30-16
Kentucky (WW)	State Program	4	90084	12-31-15 *
Louisiana	NELAP	6	30690	06-30-16
Louisiana (DW)	NELAP	6	LA160019	12-31-16
Maine	State Program	1	GA00006	09-24-16
Maryland	State Program	3	250	12-31-16
Massachusetts	State Program	1	M-GA006	06-30-16
Michigan	State Program	5	9925	03-05-16
Mississippi	State Program	4	N/A	06-30-16
Montana	State Program	8	CERT0081	12-31-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-16
New Jersey	NELAP	2	GA769	06-30-16
New Mexico	State Program	6	N/A	06-30-16
New York	NELAP	2	10842	03-31-16
North Carolina (DW)	State Program	4	13701	07-31-16
North Carolina (WW/SW)	State Program	4	269	12-31-16
Oklahoma	State Program	6	9984	08-31-16
Pennsylvania	NELAP	3	68-00474	06-30-16
Puerto Rico	State Program	2	GA00006	12-31-16
South Carolina	State Program	4	98001	06-30-16
Tennessee	State Program	4	TN02961	06-30-16
Texas	NELAP	6	T104704185-14-7	11-30-16
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-16
Washington	State Program	10	C805	06-10-16
West Virginia (DW)	State Program	3	9950C	12-31-15 *
West Virginia DEP	State Program	3	094	06-30-16
Wisconsin	State Program	5	999819810	08-31-16
Wyoming	State Program	8	8TMS-L	06-30-16

* Certification renewal pending - certification considered valid.

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-120257-1
Client Project/Site: Brenntag Durham

For:
ARCADIS U.S., Inc.
801 Corporate Center Drive
Suite 300
Raleigh, North Carolina 27607-5073

Attn: Mr. Jim Shilliday

Authorized for release by:
12/31/2015 10:51:24 AM

Jerry Lanier, Project Manager I
(912)354-7858 e.3410
jerry.lanier@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 680-120257-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Brenntag Durham

Report Number: 680-120257-1

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 the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 12/18/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.2º C and 1.8º C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample RW-9 (680-120257-1) was analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 12/29/2015.

The following analyte recovered outside control limits for the LCSD associated with analytical batch 680-416359: Chloromethane. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

Refer to the QC report for details.

Samples RW-9 (680-120257-1)[20X] and RW-9 (680-120257-1)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham

TestAmerica Job ID: 680-120257-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-120257-1	RW-9	Water	12/16/15 13:50	12/18/15 09:28

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham

TestAmerica Job ID: 680-120257-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV

Protocol References:

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

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham

TestAmerica Job ID: 680-120257-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham

TestAmerica Job ID: 680-120257-1

Client Sample ID: RW-9 — Lab Sample ID: 680-120257-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	6.0		5.0		ug/L	5		8260B	Total/NA
Chloroethane	360		25		ug/L	5		8260B	Total/NA
1,1-Dichloroethane	760		5.0		ug/L	5		8260B	Total/NA
1,1-Dichloroethene	630		5.0		ug/L	5		8260B	Total/NA
1,2-Dichloroethene, trans-	10		5.0		ug/L	5		8260B	Total/NA
1,2-Dichloropropane	9.6		5.0		ug/L	5		8260B	Total/NA
Ethylbenzene	37		5.0		ug/L	5		8260B	Total/NA
Methylene Chloride	65		25		ug/L	5		8260B	Total/NA
Tetrachloroethene	650		5.0		ug/L	5		8260B	Total/NA
Toluene	190		5.0		ug/L	5		8260B	Total/NA
1,1,1-Trichloroethane	460		5.0		ug/L	5		8260B	Total/NA
1,1,2-Trichloroethane	15		5.0		ug/L	5		8260B	Total/NA
Trichloroethene	200		5.0		ug/L	5		8260B	Total/NA
Vinyl chloride	720		5.0		ug/L	5		8260B	Total/NA
Xylenes, Total	160		5.0		ug/L	5		8260B	Total/NA
1,2-Dichloroethene, cis- - DL	2900		20		ug/L	20		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham

TestAmerica Job ID: 680-120257-1

Client Sample ID: RW-9

Date Collected: 12/16/15 13:50
Date Received: 12/18/15 09:28

Lab Sample ID: 680-120257-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	50	U	50		ug/L			12/29/15 11:37	5
Benzene	**6.0**		5.0		ug/L			12/29/15 11:37	5
Bromobenzene	5.0	U	5.0		ug/L			12/29/15 11:37	5
Bromochloromethane	5.0	U	5.0		ug/L			12/29/15 11:37	5
Bromodichloromethane	5.0	U	5.0		ug/L			12/29/15 11:37	5
Bromoform	5.0	U	5.0		ug/L			12/29/15 11:37	5
Bromomethane	25	U	25		ug/L			12/29/15 11:37	5
2-Butanone (MEK)	50	U	50		ug/L			12/29/15 11:37	5
Carbon tetrachloride	5.0	U	5.0		ug/L			12/29/15 11:37	5
Chlorobenzene	5.0	U	5.0		ug/L			12/29/15 11:37	5
Chloroethane	**360**		25		ug/L			12/29/15 11:37	5
Chloroform	5.0	U	5.0		ug/L			12/29/15 11:37	5
Chloromethane	5.0	U *	5.0		ug/L			12/29/15 11:37	5
2-Chlorotoluene	5.0	U	5.0		ug/L			12/29/15 11:37	5
4-Chlorotoluene	5.0	U	5.0		ug/L			12/29/15 11:37	5
Dibromochloromethane	5.0	U	5.0		ug/L			12/29/15 11:37	5
1,2-Dibromo-3-Chloropropane	25	U	25		ug/L			12/29/15 11:37	5
1,2-Dibromoethane	5.0	U	5.0		ug/L			12/29/15 11:37	5
Dibromomethane	5.0	U	5.0		ug/L			12/29/15 11:37	5
1,2-Dichlorobenzene	5.0	U	5.0		ug/L			12/29/15 11:37	5
1,3-Dichlorobenzene	5.0	U	5.0		ug/L			12/29/15 11:37	5
1,4-Dichlorobenzene	5.0	U	5.0		ug/L			12/29/15 11:37	5
Dichlorodifluoromethane	5.0	U	5.0		ug/L			12/29/15 11:37	5
1,1-Dichloroethane	**760**		5.0		ug/L			12/29/15 11:37	5
1,2-Dichloroethane	5.0	U	5.0		ug/L			12/29/15 11:37	5
1,1-Dichloroethene	**630**		5.0		ug/L			12/29/15 11:37	5
1,2-Dichloroethene, trans-	**10**		5.0		ug/L			12/29/15 11:37	5
1,2-Dichloropropane	**9.6**		5.0		ug/L			12/29/15 11:37	5
2,2-Dichloropropane	5.0	U	5.0		ug/L			12/29/15 11:37	5
1,1-Dichloropropene	5.0	U	5.0		ug/L			12/29/15 11:37	5
Diisopropyl ether	50	U	50		ug/L			12/29/15 11:37	5
Ethylbenzene	**37**		5.0		ug/L			12/29/15 11:37	5
Hexachloro-1,3-butadiene	25	U	25		ug/L			12/29/15 11:37	5
2-Hexanone	50	U	50		ug/L			12/29/15 11:37	5
Isopropylbenzene	5.0	U	5.0		ug/L			12/29/15 11:37	5
Methylene Chloride	**65**		25		ug/L			12/29/15 11:37	5
4-Methyl-2-pentanone (MIBK)	50	U	50		ug/L			12/29/15 11:37	5
Methyl tert-butyl ether	50	U	50		ug/L			12/29/15 11:37	5
Naphthalene	25	U	25		ug/L			12/29/15 11:37	5
p-Isopropyltoluene	5.0	U	5.0		ug/L			12/29/15 11:37	5
Styrene	5.0	U	5.0		ug/L			12/29/15 11:37	5
1,1,1,2-Tetrachloroethane	5.0	U	5.0		ug/L			12/29/15 11:37	5
1,1,2,2-Tetrachloroethane	5.0	U	5.0		ug/L			12/29/15 11:37	5
Tetrachloroethene	**650**		5.0		ug/L			12/29/15 11:37	5
Toluene	**190**		5.0		ug/L			12/29/15 11:37	5
1,2,3-Trichlorobenzene	25	U	25		ug/L			12/29/15 11:37	5
1,2,4-Trichlorobenzene	25	U	25		ug/L			12/29/15 11:37	5
1,1,1-Trichloroethane	**460**		5.0		ug/L			12/29/15 11:37	5
1,1,2-Trichloroethane	**15**		5.0		ug/L			12/29/15 11:37	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham

TestAmerica Job ID: 680-120257-1

Client Sample ID: RW-9

Date Collected: 12/16/15 13:50
Date Received: 12/18/15 09:28

Lab Sample ID: 680-120257-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**200**		5.0		ug/L			12/29/15 11:37	5
Trichlorofluoromethane	5.0	U	5.0		ug/L			12/29/15 11:37	5
1,2,3-Trichloropropane	5.0	U	5.0		ug/L			12/29/15 11:37	5
1,2,4-Trimethylbenzene	5.0	U	5.0		ug/L			12/29/15 11:37	5
1,3,5-Trimethylbenzene	5.0	U	5.0		ug/L			12/29/15 11:37	5
Vinyl chloride	**720**		5.0		ug/L			12/29/15 11:37	5
Xylenes, Total	**160**		5.0		ug/L			12/29/15 11:37	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*12/29/15 11:37*	*5*
Dibromofluoromethane (Surr)	*106*		*70 - 130*		*12/29/15 11:37*	*5*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 130*		*12/29/15 11:37*	*5*
Toluene-d8 (Surr)	*102*		*70 - 130*		*12/29/15 11:37*	*5*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethene, cis-	**2900**		20		ug/L			12/29/15 17:04	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*12/29/15 17:04*	*20*
Dibromofluoromethane (Surr)	*115*		*70 - 130*		*12/29/15 17:04*	*20*
1,2-Dichloroethane-d4 (Surr)	*123*		*70 - 130*		*12/29/15 17:04*	*20*
Toluene-d8 (Surr)	*104*		*70 - 130*		*12/29/15 17:04*	*20*

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham

TestAmerica Job ID: 680-120257-1

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
680-120257-1	RW-9	98	106	111	102
680-120257-1 - DL	RW-9	97	115	123	104
LCS 680-416359/4	Lab Control Sample	96	104	105	107
LCSD 680-416359/5	Lab Control Sample Dup	98	104	107	106
MB 680-416359/9	Method Blank	98	98	99	102

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

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

Lab Sample ID: MB 680-416359/9
Matrix: Water
Analysis Batch: 416359

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10		ug/L			12/29/15 10:43	1
Benzene	1.0	U	1.0		ug/L			12/29/15 10:43	1
Bromobenzene	1.0	U	1.0		ug/L			12/29/15 10:43	1
Bromochloromethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
Bromodichloromethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
Bromoform	1.0	U	1.0		ug/L			12/29/15 10:43	1
Bromomethane	5.0	U	5.0		ug/L			12/29/15 10:43	1
2-Butanone (MEK)	10	U	10		ug/L			12/29/15 10:43	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/29/15 10:43	1
Chlorobenzene	1.0	U	1.0		ug/L			12/29/15 10:43	1
Chloroethane	5.0	U	5.0		ug/L			12/29/15 10:43	1
Chloroform	1.0	U	1.0		ug/L			12/29/15 10:43	1
Chloromethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
2-Chlorotoluene	1.0	U	1.0		ug/L			12/29/15 10:43	1
4-Chlorotoluene	1.0	U	1.0		ug/L			12/29/15 10:43	1
Dibromochloromethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0		ug/L			12/29/15 10:43	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
Dibromomethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/29/15 10:43	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,2-Dichloroethene, cis-	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,2-Dichloroethene, trans-	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/29/15 10:43	1
2,2-Dichloropropane	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,1-Dichloropropene	1.0	U	1.0		ug/L			12/29/15 10:43	1
Diisopropyl ether	10	U	10		ug/L			12/29/15 10:43	1
Ethylbenzene	1.0	U	1.0		ug/L			12/29/15 10:43	1
Hexachloro-1,3-butadiene	5.0	U	5.0		ug/L			12/29/15 10:43	1
2-Hexanone	10	U	10		ug/L			12/29/15 10:43	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/29/15 10:43	1
Methylene Chloride	5.0	U	5.0		ug/L			12/29/15 10:43	1
4-Methyl-2-pentanone (MIBK)	10	U	10		ug/L			12/29/15 10:43	1
Methyl tert-butyl ether	10	U	10		ug/L			12/29/15 10:43	1
Naphthalene	5.0	U	5.0		ug/L			12/29/15 10:43	1
p-Isopropyltoluene	1.0	U	1.0		ug/L			12/29/15 10:43	1
Styrene	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/29/15 10:43	1
Toluene	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,2,3-Trichlorobenzene	5.0	U	5.0		ug/L			12/29/15 10:43	1
1,2,4-Trichlorobenzene	5.0	U	5.0		ug/L			12/29/15 10:43	1

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

Lab Sample ID: MB 680-416359/9
Matrix: Water
Analysis Batch: 416359

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
Trichloroethene	1.0	U	1.0		ug/L			12/29/15 10:43	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,2,3-Trichloropropane	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,2,4-Trimethylbenzene	1.0	U	1.0		ug/L			12/29/15 10:43	1
1,3,5-Trimethylbenzene	1.0	U	1.0		ug/L			12/29/15 10:43	1
Vinyl chloride	1.0	U	1.0		ug/L			12/29/15 10:43	1
Xylenes, Total	1.0	U	1.0		ug/L			12/29/15 10:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*12/29/15 10:43*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 130*		*12/29/15 10:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*12/29/15 10:43*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*12/29/15 10:43*	*1*

Lab Sample ID: LCS 680-416359/4
Matrix: Water
Analysis Batch: 416359

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	250	296		ug/L		119	60 - 154
Benzene	50.0	49.4		ug/L		99	73 - 131
Bromobenzene	50.0	49.4		ug/L		99	79 - 124
Bromochloromethane	50.0	54.7		ug/L		109	77 - 122
Bromodichloromethane	50.0	54.3		ug/L		109	77 - 129
Bromoform	50.0	45.4		ug/L		91	69 - 135
Bromomethane	50.0	47.5		ug/L		95	20 - 180
2-Butanone (MEK)	250	299		ug/L		120	75 - 133
Carbon tetrachloride	50.0	53.1		ug/L		106	75 - 130
Chlorobenzene	50.0	45.4		ug/L		91	80 - 120
Chloroethane	50.0	46.7		ug/L		93	50 - 151
Chloroform	50.0	50.1		ug/L		100	79 - 122
Chloromethane	50.0	61.9		ug/L		124	63 - 126
2-Chlorotoluene	50.0	50.3		ug/L		101	77 - 121
4-Chlorotoluene	50.0	51.7		ug/L		103	80 - 120
Dibromochloromethane	50.0	48.2		ug/L		96	71 - 136
1,2-Dibromo-3-Chloropropane	50.0	44.2		ug/L		88	59 - 141
1,2-Dibromoethane	50.0	57.0		ug/L		114	77 - 131
Dibromomethane	50.0	53.1		ug/L		106	80 - 122
1,2-Dichlorobenzene	50.0	49.7		ug/L		99	80 - 120
1,3-Dichlorobenzene	50.0	47.8		ug/L		96	80 - 120
1,4-Dichlorobenzene	50.0	47.7		ug/L		95	80 - 120
Dichlorodifluoromethane	50.0	62.6		ug/L		125	51 - 140
1,1-Dichloroethane	50.0	45.6		ug/L		91	80 - 120
1,2-Dichloroethane	50.0	54.1		ug/L		108	75 - 130
1,1-Dichloroethene	50.0	49.3		ug/L		99	74 - 125
1,2-Dichloroethene, cis-	50.0	51.7		ug/L		103	80 - 122

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

Lab Sample ID: LCS 680-416359/4
Matrix: Water
Analysis Batch: 416359

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloroethene, trans-	50.0	52.3		ug/L		105	78 - 123
1,2-Dichloropropane	50.0	51.8		ug/L		104	80 - 123
2,2-Dichloropropane	50.0	50.4		ug/L		101	72 - 133
1,1-Dichloropropene	50.0	49.8		ug/L		100	78 - 127
Ethylbenzene	50.0	46.5		ug/L		93	80 - 120
Hexachloro-1,3-butadiene	50.0	50.1		ug/L		100	77 - 129
2-Hexanone	250	312		ug/L		125	70 - 141
Isopropylbenzene	50.0	50.1		ug/L		100	80 - 120
Methylene Chloride	50.0	63.5		ug/L		127	76 - 129
4-Methyl-2-pentanone (MIBK)	250	310		ug/L		124	75 - 135
Methyl tert-butyl ether	50.0	55.2		ug/L		110	74 - 135
Naphthalene	50.0	42.0		ug/L		84	69 - 148
p-Isopropyltoluene	50.0	49.6		ug/L		99	80 - 120
Styrene	50.0	50.5		ug/L		101	80 - 122
1,1,1,2-Tetrachloroethane	50.0	50.2		ug/L		100	80 - 120
1,1,2,2-Tetrachloroethane	50.0	51.8		ug/L		104	72 - 128
Tetrachloroethene	50.0	51.5		ug/L		103	77 - 123
Toluene	50.0	52.5		ug/L		105	80 - 122
1,2,3-Trichlorobenzene	50.0	42.1		ug/L		84	61 - 151
1,2,4-Trichlorobenzene	50.0	41.5		ug/L		83	77 - 131
1,1,1-Trichloroethane	50.0	50.1		ug/L		100	74 - 128
1,1,2-Trichloroethane	50.0	55.4		ug/L		111	79 - 125
Trichloroethene	50.0	49.7		ug/L		99	80 - 123
Trichlorofluoromethane	50.0	52.5		ug/L		105	58 - 145
1,2,3-Trichloropropane	50.0	54.0		ug/L		108	70 - 132
1,2,4-Trimethylbenzene	50.0	52.0		ug/L		104	80 - 124
1,3,5-Trimethylbenzene	50.0	51.5		ug/L		103	80 - 120
Vinyl chloride	50.0	42.4		ug/L		85	68 - 132
Xylenes, Total	100	97.2		ug/L		97	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
Dibromofluoromethane (Surr)	*104*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*
Toluene-d8 (Surr)	*107*		*70 - 130*

Lab Sample ID: LCSD 680-416359/5
Matrix: Water
Analysis Batch: 416359

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	250	304		ug/L		122	60 - 154	3	40
Benzene	50.0	49.3		ug/L		99	73 - 131	0	30
Bromobenzene	50.0	50.2		ug/L		100	79 - 124	2	20
Bromochloromethane	50.0	55.2		ug/L		110	77 - 122	1	20
Bromodichloromethane	50.0	53.7		ug/L		107	77 - 129	1	20
Bromoform	50.0	45.9		ug/L		92	69 - 135	1	20
Bromomethane	50.0	48.8		ug/L		98	20 - 180	3	40

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

Lab Sample ID: LCSD 680-416359/5
Matrix: Water
Analysis Batch: 416359

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Butanone (MEK)	250	305		ug/L		122	75 - 133	2	30
Carbon tetrachloride	50.0	51.4		ug/L		103	75 - 130	3	20
Chlorobenzene	50.0	46.0		ug/L		92	80 - 120	1	20
Chloroethane	50.0	48.4		ug/L		97	50 - 151	4	30
Chloroform	50.0	50.6		ug/L		101	79 - 122	1	20
Chloromethane	50.0	64.9	*	ug/L		130	63 - 126	5	30
2-Chlorotoluene	50.0	50.5		ug/L		101	77 - 121	0	20
4-Chlorotoluene	50.0	51.6		ug/L		103	80 - 120	0	20
Dibromochloromethane	50.0	48.3		ug/L		97	71 - 136	0	20
1,2-Dibromo-3-Chloropropane	50.0	45.5		ug/L		91	59 - 141	3	30
1,2-Dibromoethane	50.0	57.7		ug/L		115	77 - 131	1	30
Dibromomethane	50.0	52.6		ug/L		105	80 - 122	1	20
1,2-Dichlorobenzene	50.0	50.3		ug/L		101	80 - 120	1	20
1,3-Dichlorobenzene	50.0	48.1		ug/L		96	80 - 120	1	20
1,4-Dichlorobenzene	50.0	48.0		ug/L		96	80 - 120	1	20
Dichlorodifluoromethane	50.0	58.2		ug/L		116	51 - 140	7	40
1,1-Dichloroethane	50.0	44.5		ug/L		89	80 - 120	2	20
1,2-Dichloroethane	50.0	53.9		ug/L		108	75 - 130	0	20
1,1-Dichloroethene	50.0	47.2		ug/L		94	74 - 125	4	20
1,2-Dichloroethene, cis-	50.0	52.0		ug/L		104	80 - 122	1	20
1,2-Dichloroethene, trans-	50.0	51.2		ug/L		102	78 - 123	2	20
1,2-Dichloropropane	50.0	52.2		ug/L		104	80 - 123	1	20
2,2-Dichloropropane	50.0	48.9		ug/L		98	72 - 133	3	20
1,1-Dichloropropene	50.0	48.4		ug/L		97	78 - 127	3	20
Ethylbenzene	50.0	46.4		ug/L		93	80 - 120	0	20
Hexachloro-1,3-butadiene	50.0	49.2		ug/L		98	77 - 129	2	30
2-Hexanone	250	315		ug/L		126	70 - 141	1	40
Isopropylbenzene	50.0	49.1		ug/L		98	80 - 120	2	20
Methylene Chloride	50.0	61.7		ug/L		123	76 - 129	3	20
4-Methyl-2-pentanone (MIBK)	250	316		ug/L		126	75 - 135	2	30
Methyl tert-butyl ether	50.0	56.0		ug/L		112	74 - 135	2	20
Naphthalene	50.0	44.1		ug/L		88	69 - 148	5	40
p-Isopropyltoluene	50.0	50.1		ug/L		100	80 - 120	1	20
Styrene	50.0	50.9		ug/L		102	80 - 122	1	20
1,1,1,2-Tetrachloroethane	50.0	50.5		ug/L		101	80 - 120	1	20
1,1,2,2-Tetrachloroethane	50.0	53.4		ug/L		107	72 - 128	3	20
Tetrachloroethene	50.0	50.4		ug/L		101	77 - 123	2	20
Toluene	50.0	51.9		ug/L		104	80 - 122	1	20
1,2,3-Trichlorobenzene	50.0	44.3		ug/L		89	61 - 151	5	40
1,2,4-Trichlorobenzene	50.0	41.5		ug/L		83	77 - 131	0	20
1,1,1-Trichloroethane	50.0	49.3		ug/L		99	74 - 128	2	20
1,1,2-Trichloroethane	50.0	55.9		ug/L		112	79 - 125	1	20
Trichloroethene	50.0	48.9		ug/L		98	80 - 123	2	20
Trichlorofluoromethane	50.0	49.5		ug/L		99	58 - 145	6	30
1,2,3-Trichloropropane	50.0	56.6		ug/L		113	70 - 132	5	30
1,2,4-Trimethylbenzene	50.0	51.9		ug/L		104	80 - 124	0	20
1,3,5-Trimethylbenzene	50.0	51.4		ug/L		103	80 - 120	0	20
Vinyl chloride	50.0	41.1		ug/L		82	68 - 132	3	30

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

Lab Sample ID: LCSD 680-416359/5
Matrix: Water
Analysis Batch: 416359

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Xylenes, Total			100	96.8		ug/L		97	80 - 120	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
Dibromofluoromethane (Surr)	*104*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*
Toluene-d8 (Surr)	*106*		*70 - 130*

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham

TestAmerica Job ID: 680-120257-1

GC/MS VOA

Analysis Batch: 416359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-120257-1	RW-9	Total/NA	Water	8260B	
680-120257-1 - DL	RW-9	Total/NA	Water	8260B	
LCS 680-416359/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-416359/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-416359/9	Method Blank	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham

TestAmerica Job ID: 680-120257-1

Client Sample ID: RW-9

Date Collected: 12/16/15 13:50
Date Received: 12/18/15 09:28

Lab Sample ID: 680-120257-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	5 mL	5 mL	416359	12/29/15 11:37	CEJ	TAL SAV
	Instrument ID:	CMSA2								
Total/NA	Analysis	8260B	DL	20	5 mL	5 mL	416359	12/29/15 17:04	CEJ	TAL SAV
	Instrument ID:	CMSA2								

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jim Shilliday	Site Contact: Dave Twamley	Date: 12/16/15	COC No:
ARCADIS	Tel/Fax: 919-854-1282	Lab Contact: Jerry Lanier	Carrier: Fed Ex	1 of 1 COCs
801 Corporate Center Drive, Suite 300	Analysis Turnaround Time			Job No.
Raleigh, NC 27607	Calendar (C) or Work Days (W) _____			
919-854-1282	TAT if different from Below _____			
919-854-5448	■ 2 weeks			SDG No.
Project Name: Brenntag Durham - Annual GW Monitoring	☐ 1 week			
Site: Brenntag Durham Facility	☐ 2 days			
P O # NC000368.0025.00001	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs + Acetone (Method 8260B)	Sample Specific Notes:
RW-9	12/16/15	1350	Grab	GW	3	N	X	
							2	

680-120257 Chain of Custody

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

Possible Hazard Identification
☐ *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:

08/12 1.4/18

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	ARCADIS	12-17/15 16:00	Fed EX	—	12/17/15 16:00
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TA	Date/Time: 12/18/15 0928
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-120257-1

Login Number: 120257
List Number: 1
Creator: Kirkland, Keyon A

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Brenntag Durham

TestAmerica Job ID: 680-120257-1

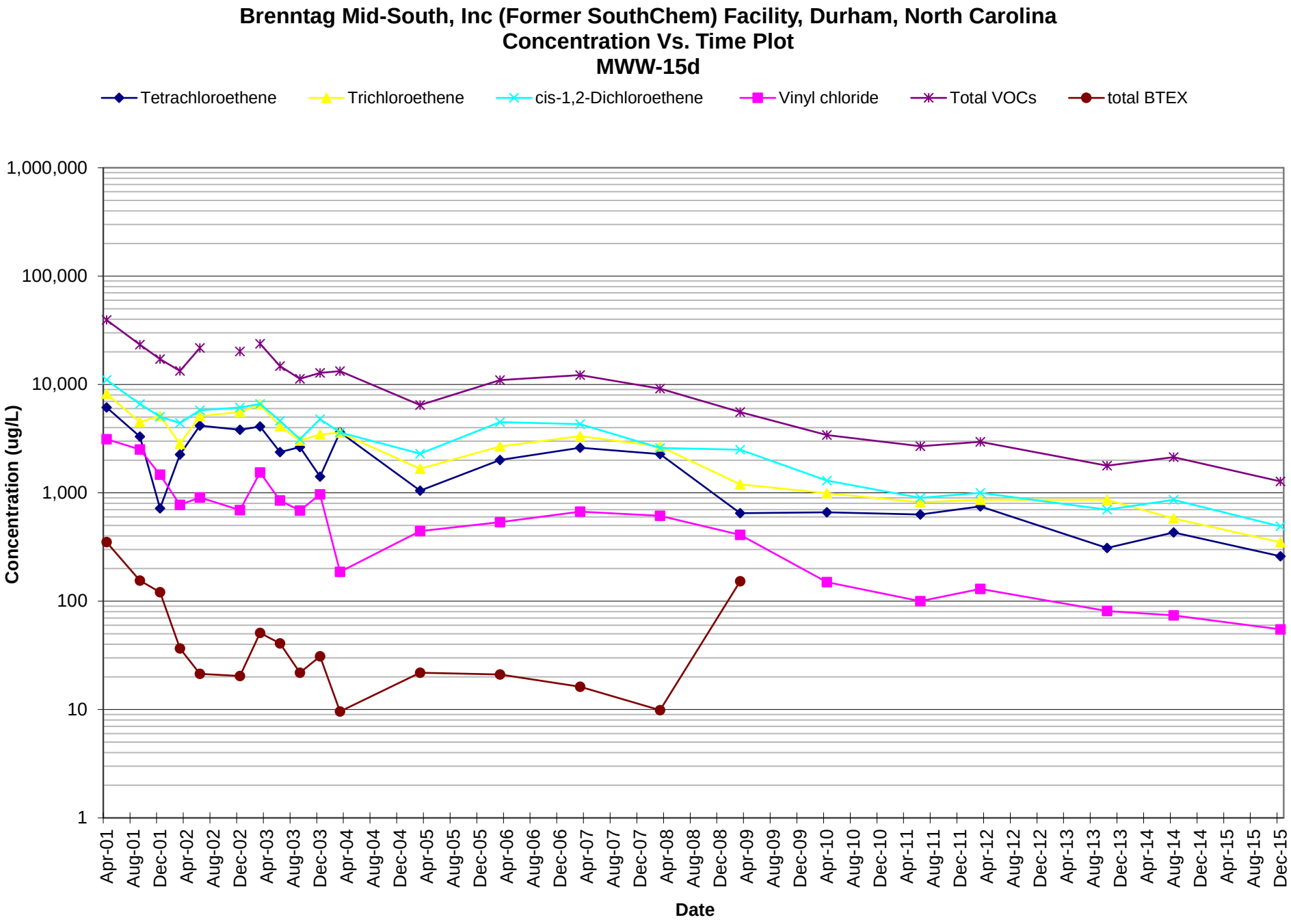
Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
North Carolina (WW/SW)	State Program	4	269	12-31-16

Appendix C

Time-Series Graphs: April 2001 to December 2015


Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
MWW-15d
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
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Apr-04
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Aug-05
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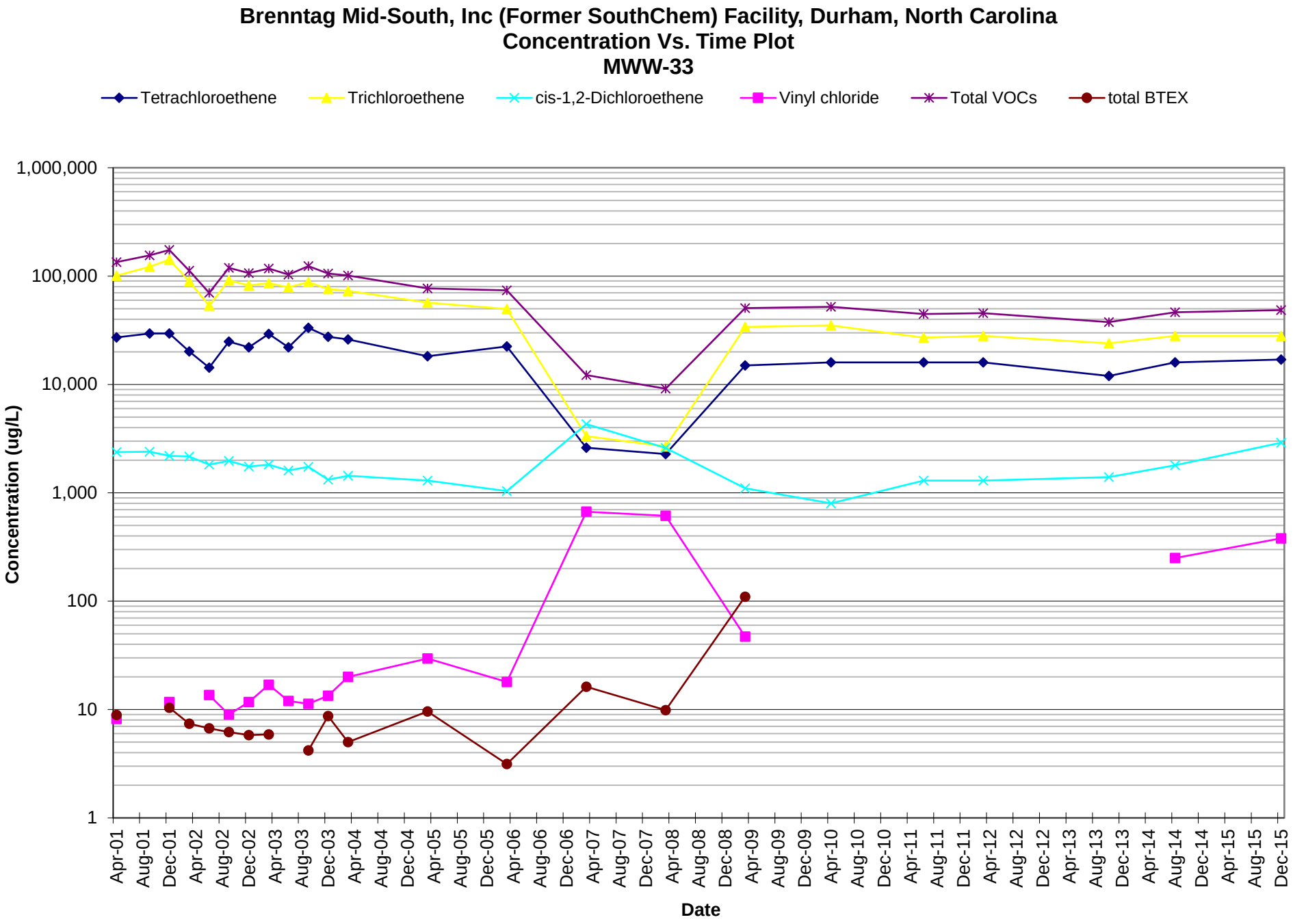
Dec-15


Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
MWW-33
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
Dec-03
Apr-04
Aug-04
Dec-04
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Aug-05
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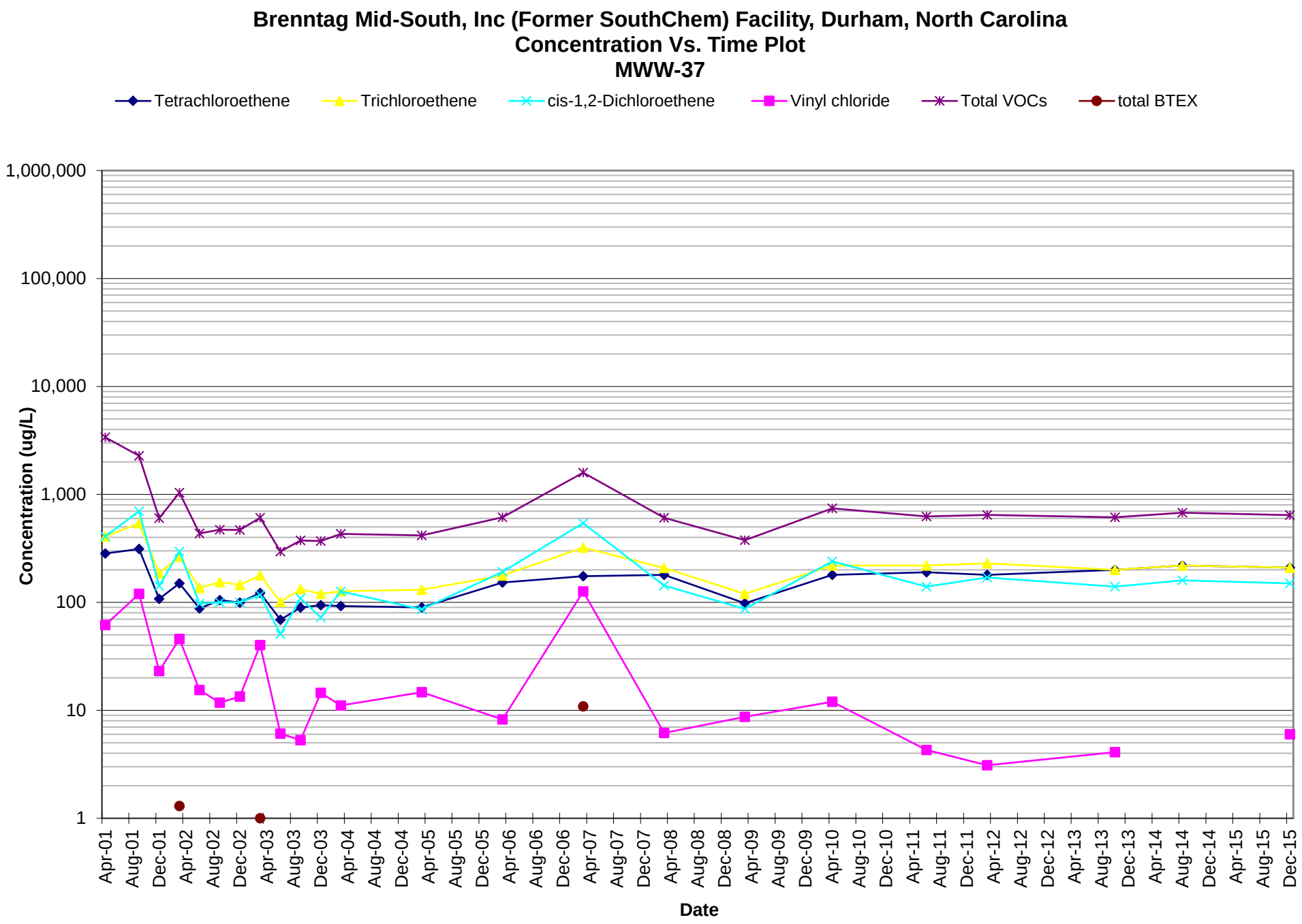
Dec-15


Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
MWW-37
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
Dec-03
Apr-04
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Dec-04
Apr-05
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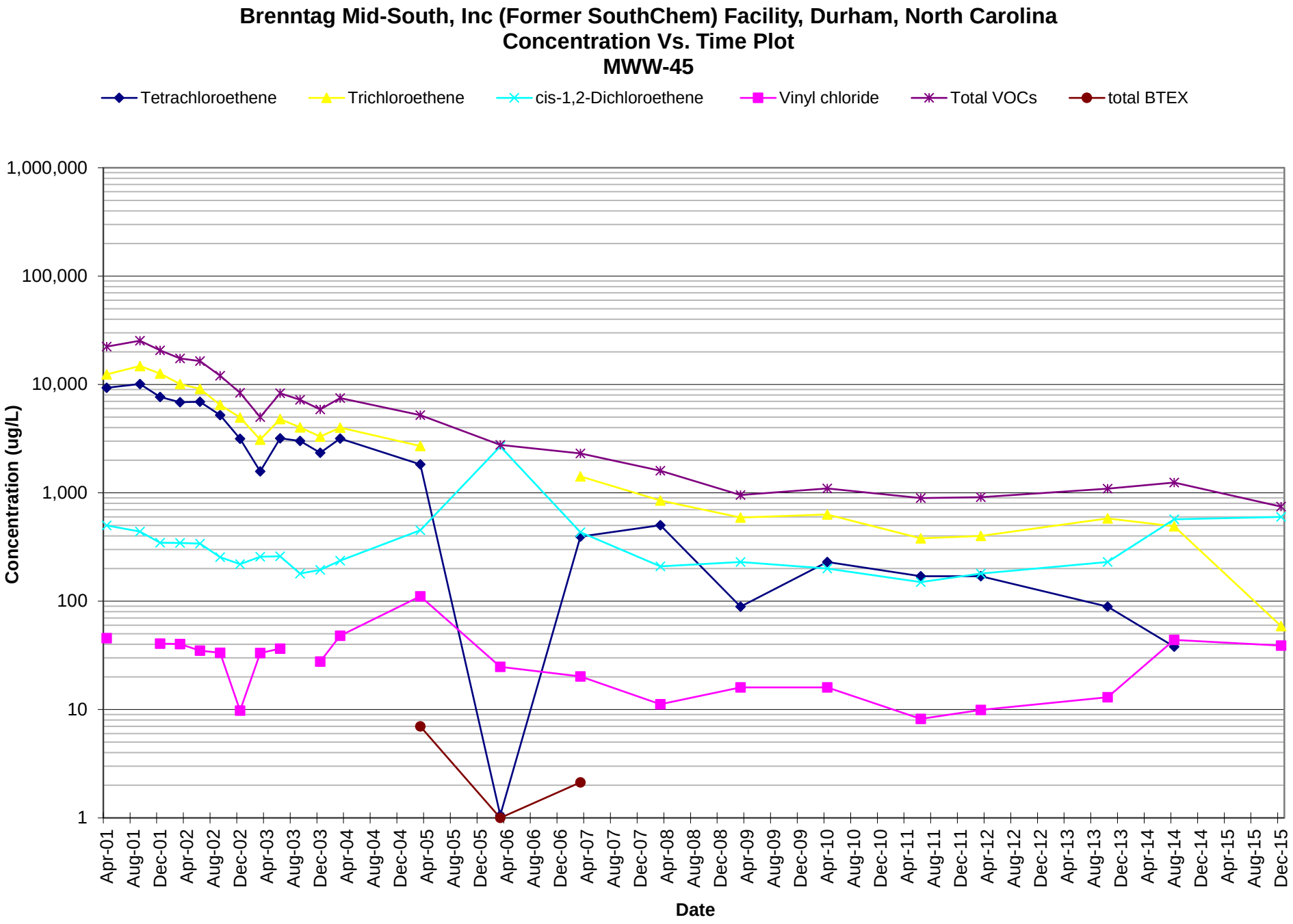
Dec-15


Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
MWW-45
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
Dec-03
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Apr-05
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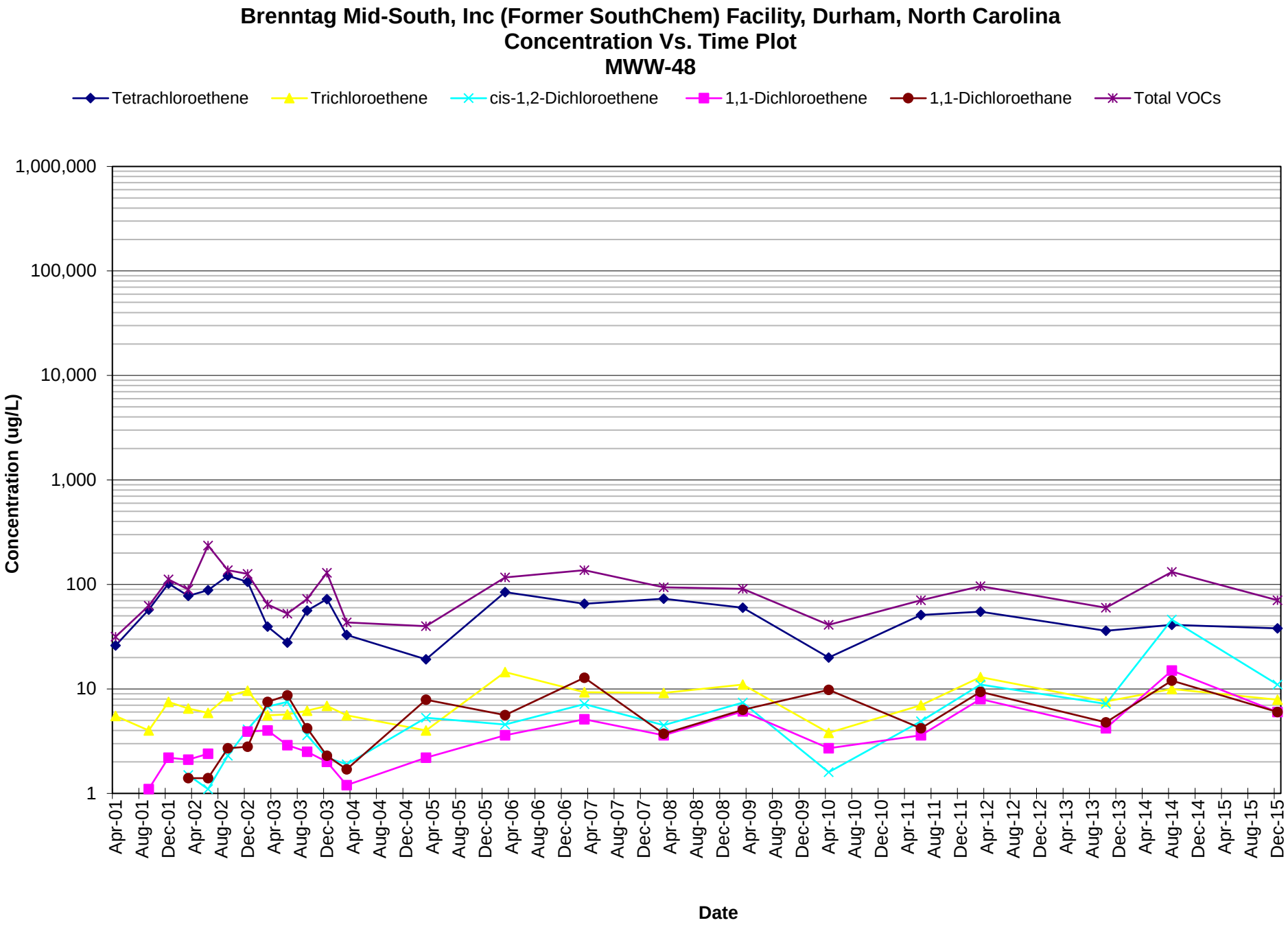
Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
MWW-48
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
1,1-Dichloroethene
1,1-Dichloroethane
Total VOCs
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
Dec-03
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Aug-04
Dec-04
Apr-05
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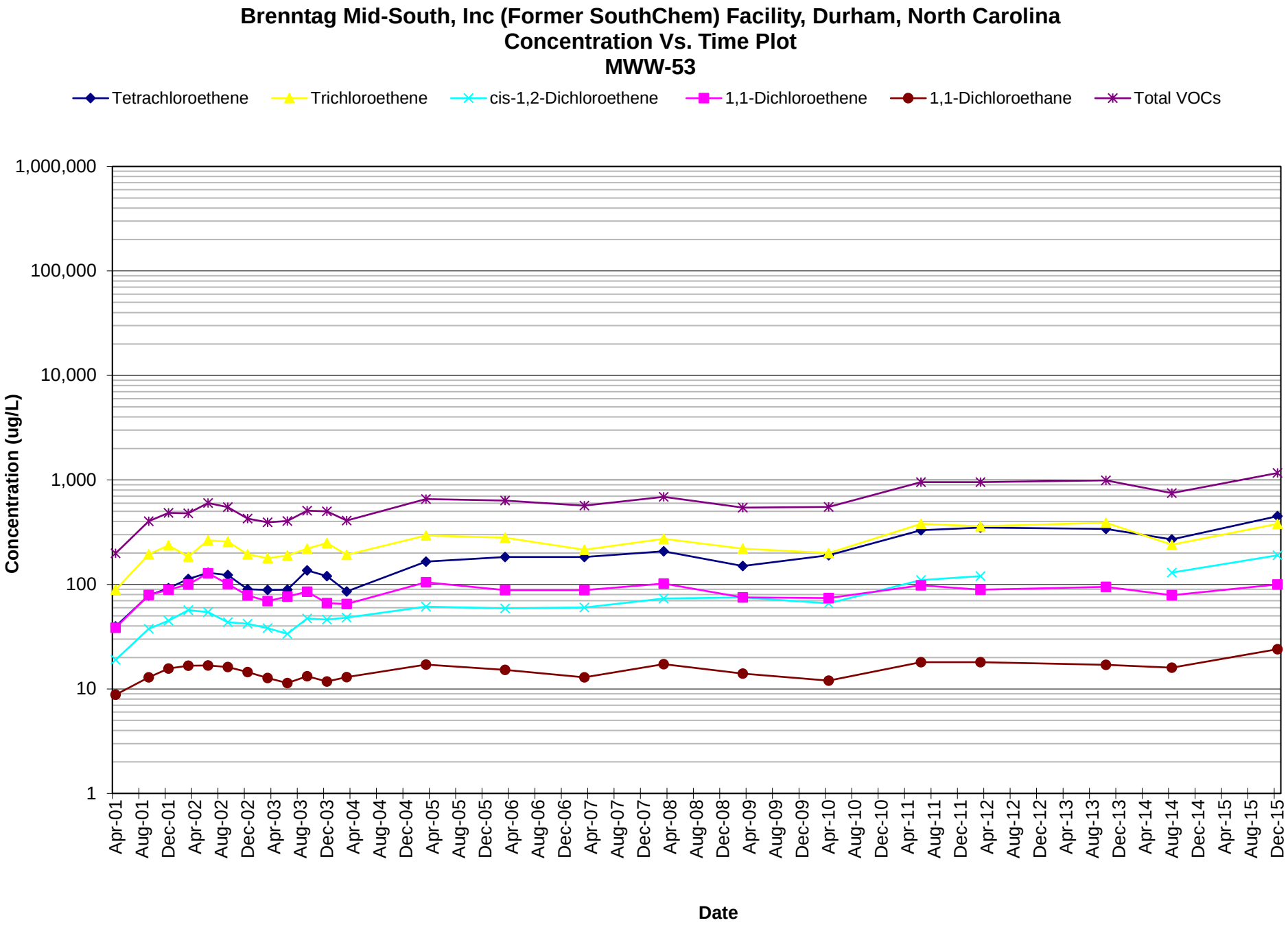
Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
MWW-53
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
1,1-Dichloroethene
1,1-Dichloroethane
Total VOCs
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
Dec-03
Apr-04
Aug-04
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Apr-05
Aug-05
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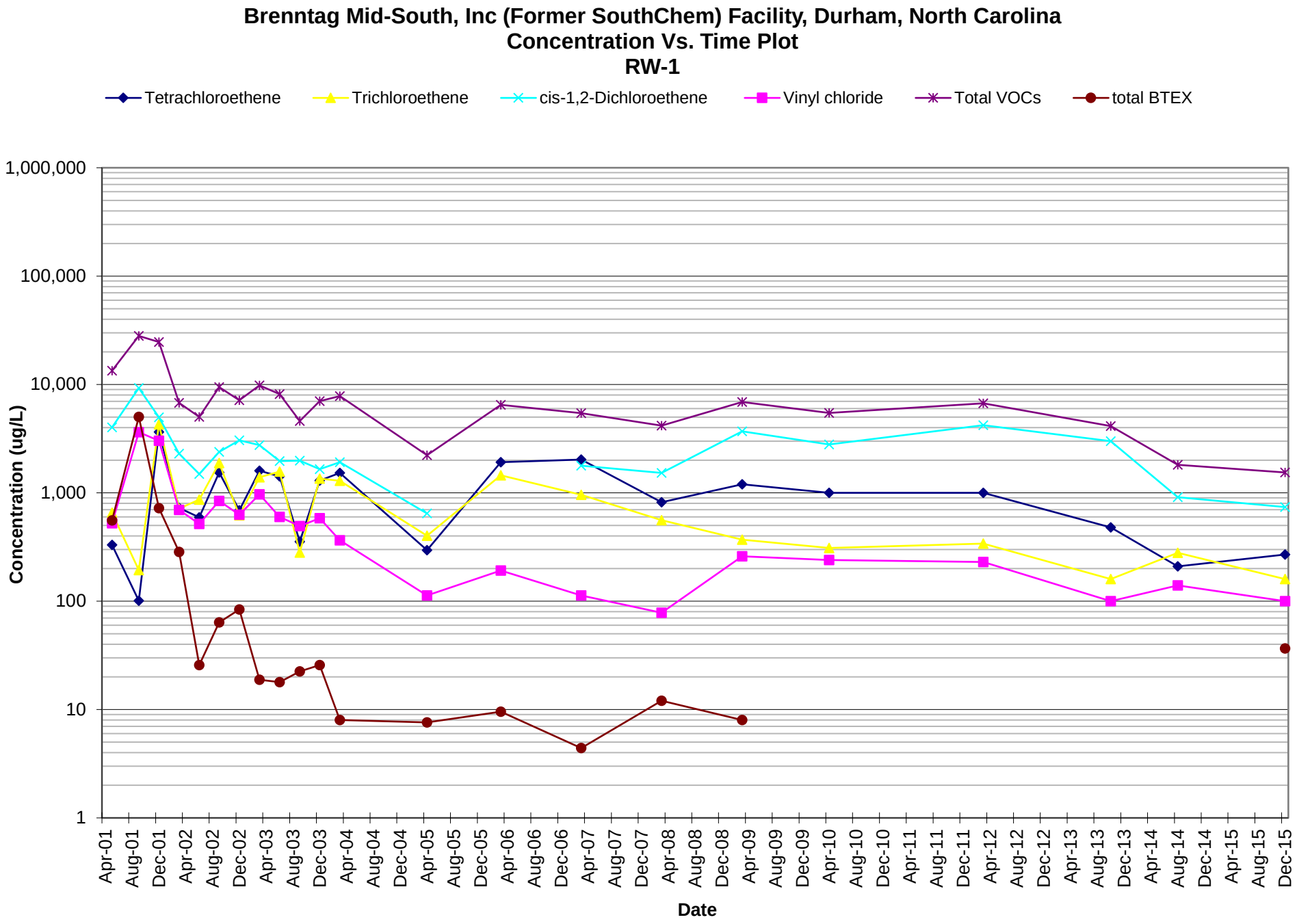
Date


Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
RW-1
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
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Dec-04
Apr-05
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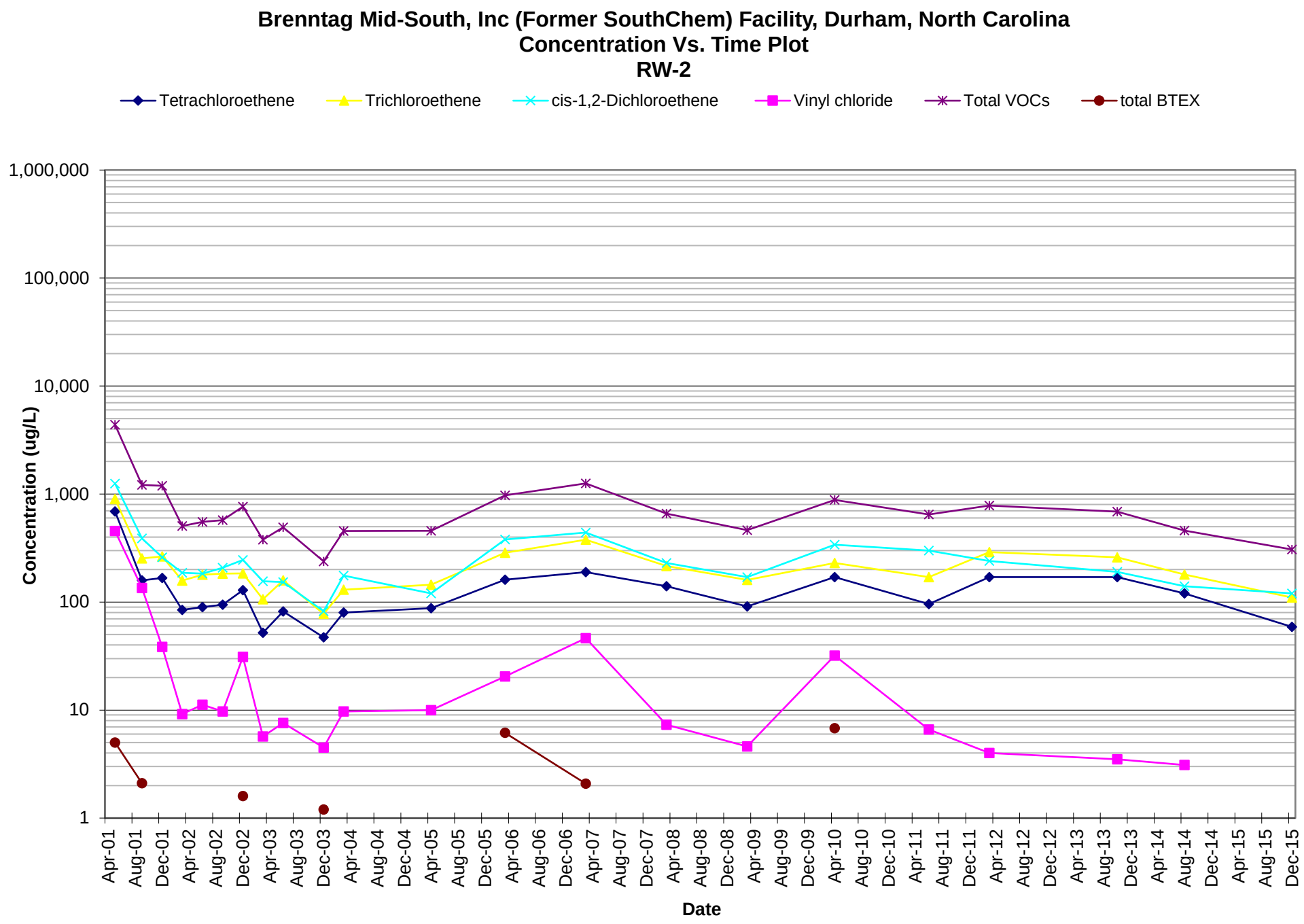
Dec-15


Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
RW-2
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
Dec-03
Apr-04
Aug-04
Dec-04
Apr-05
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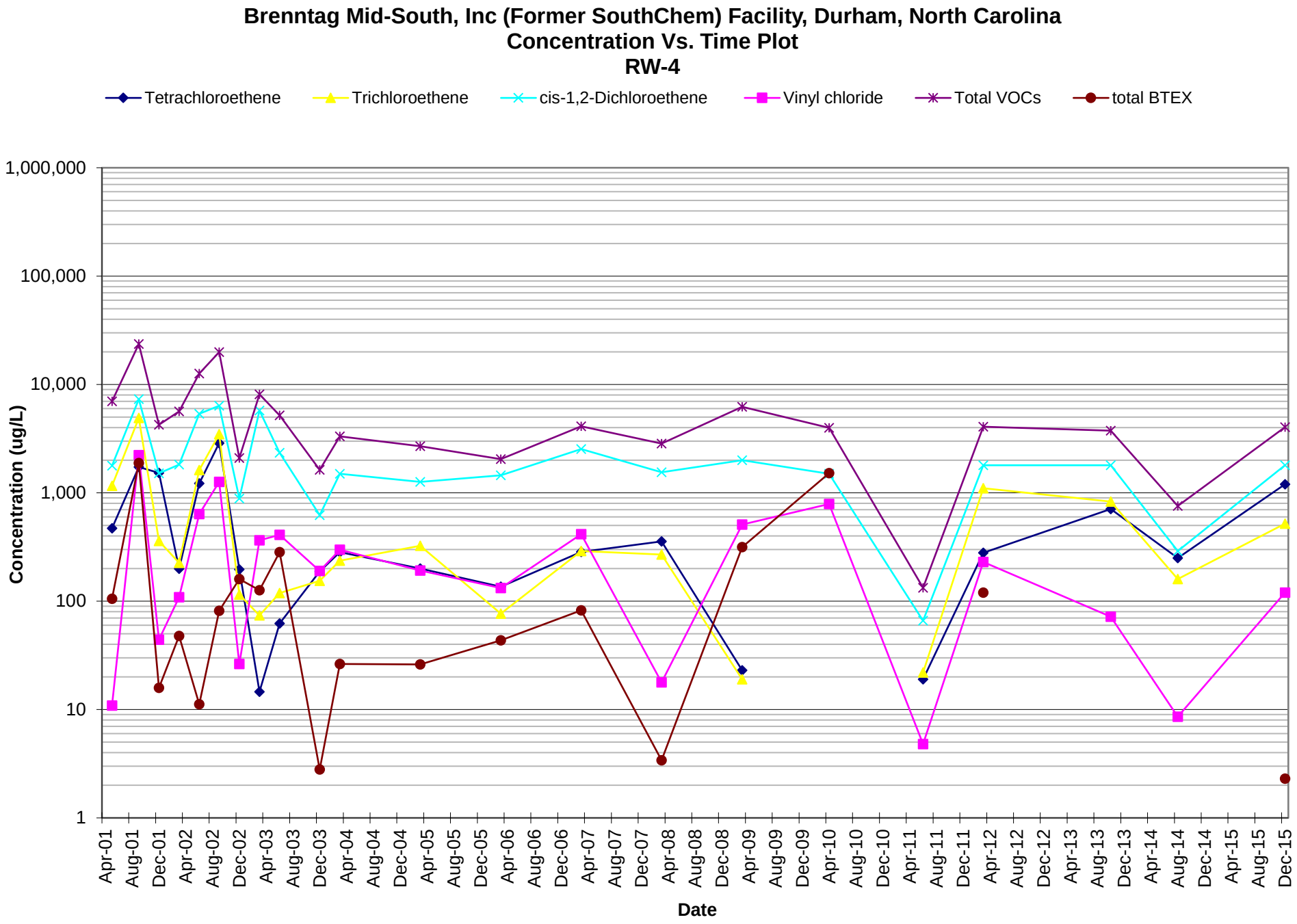
Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
RW-4
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
Dec-03
Apr-04
Aug-04
Dec-04
Apr-05
Aug-05
Dec-05
Apr-06
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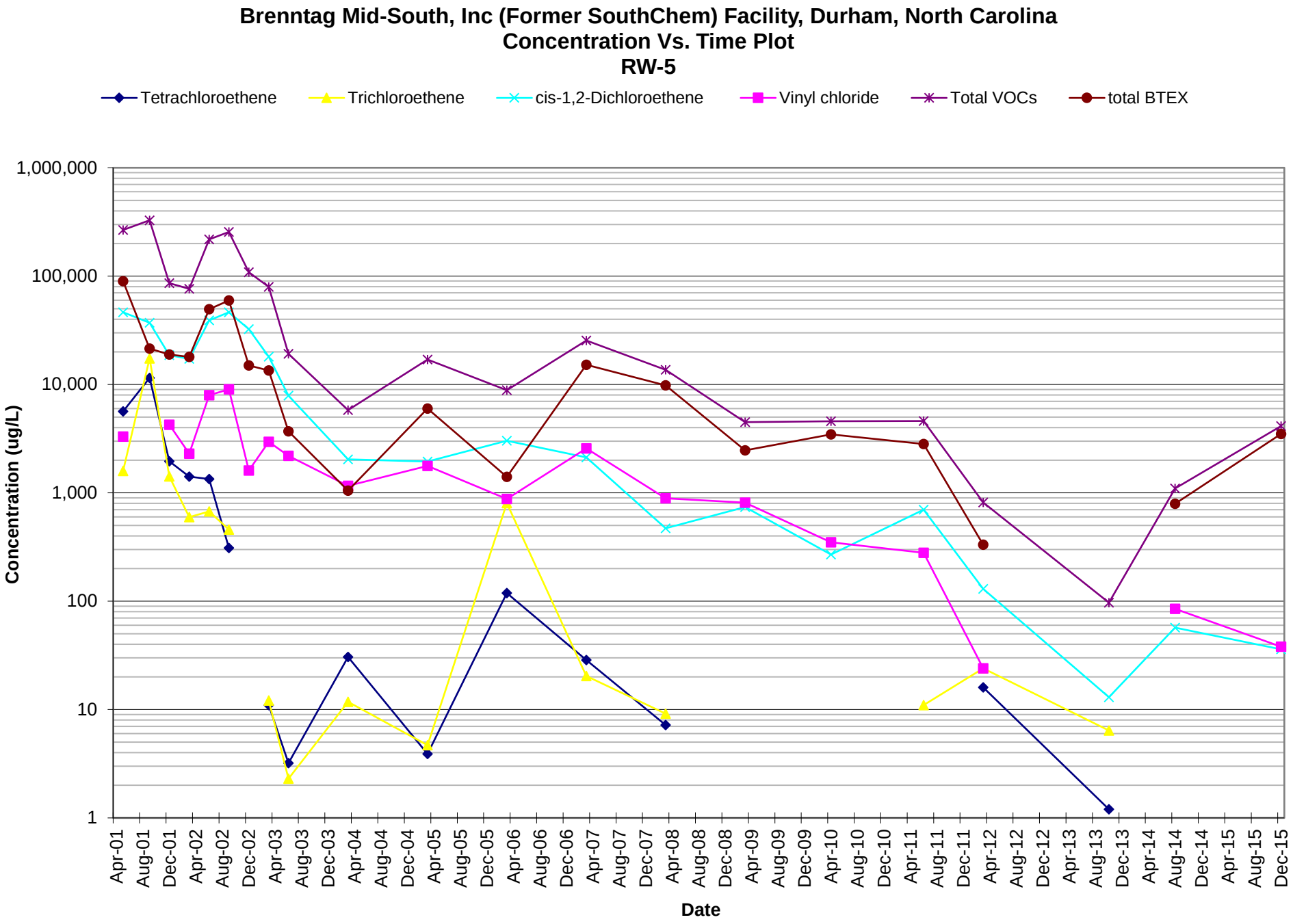
Dec-15


Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
RW-5
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
Dec-03
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Aug-04
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Apr-05
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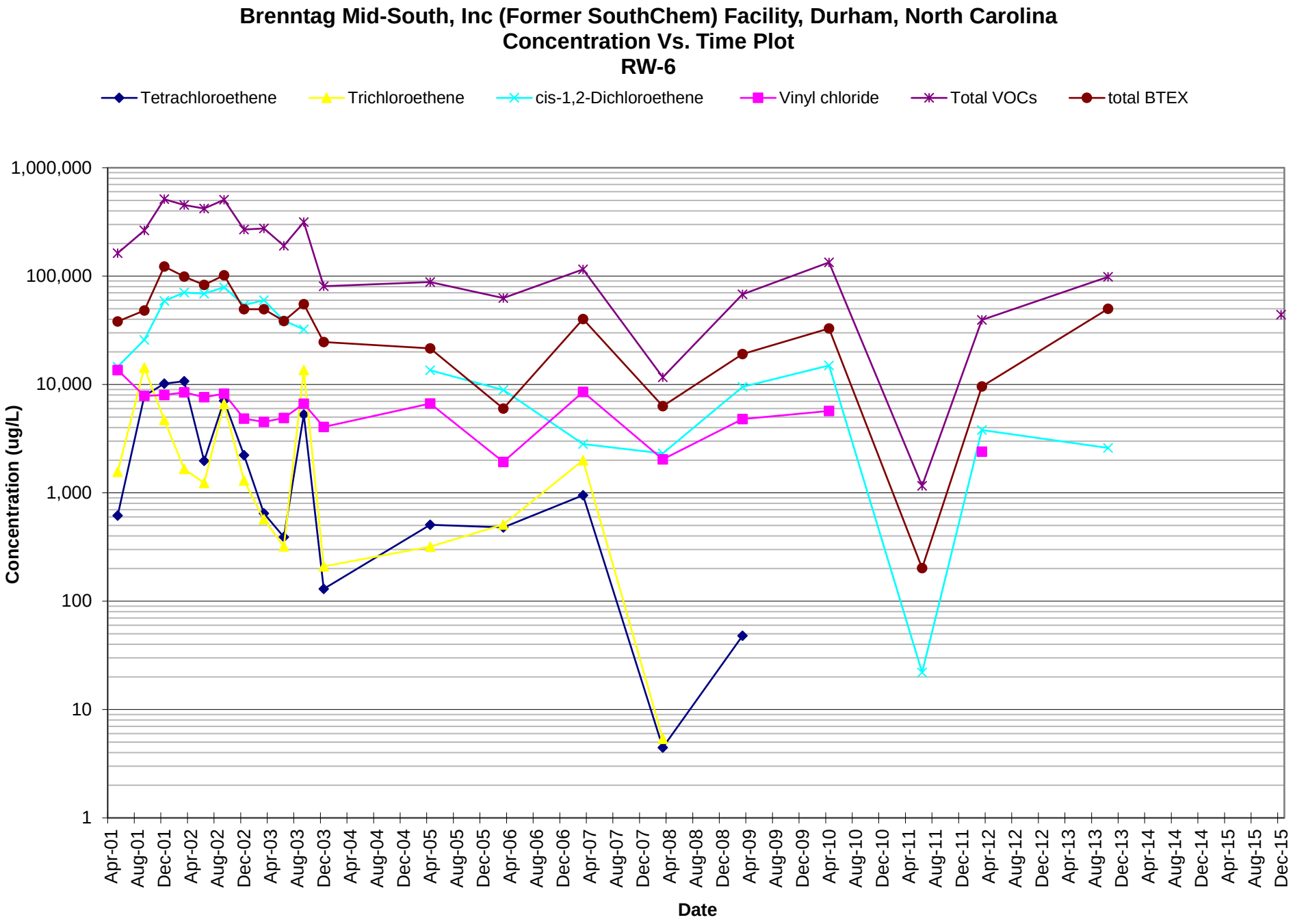
Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
RW-6
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
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Dec-03
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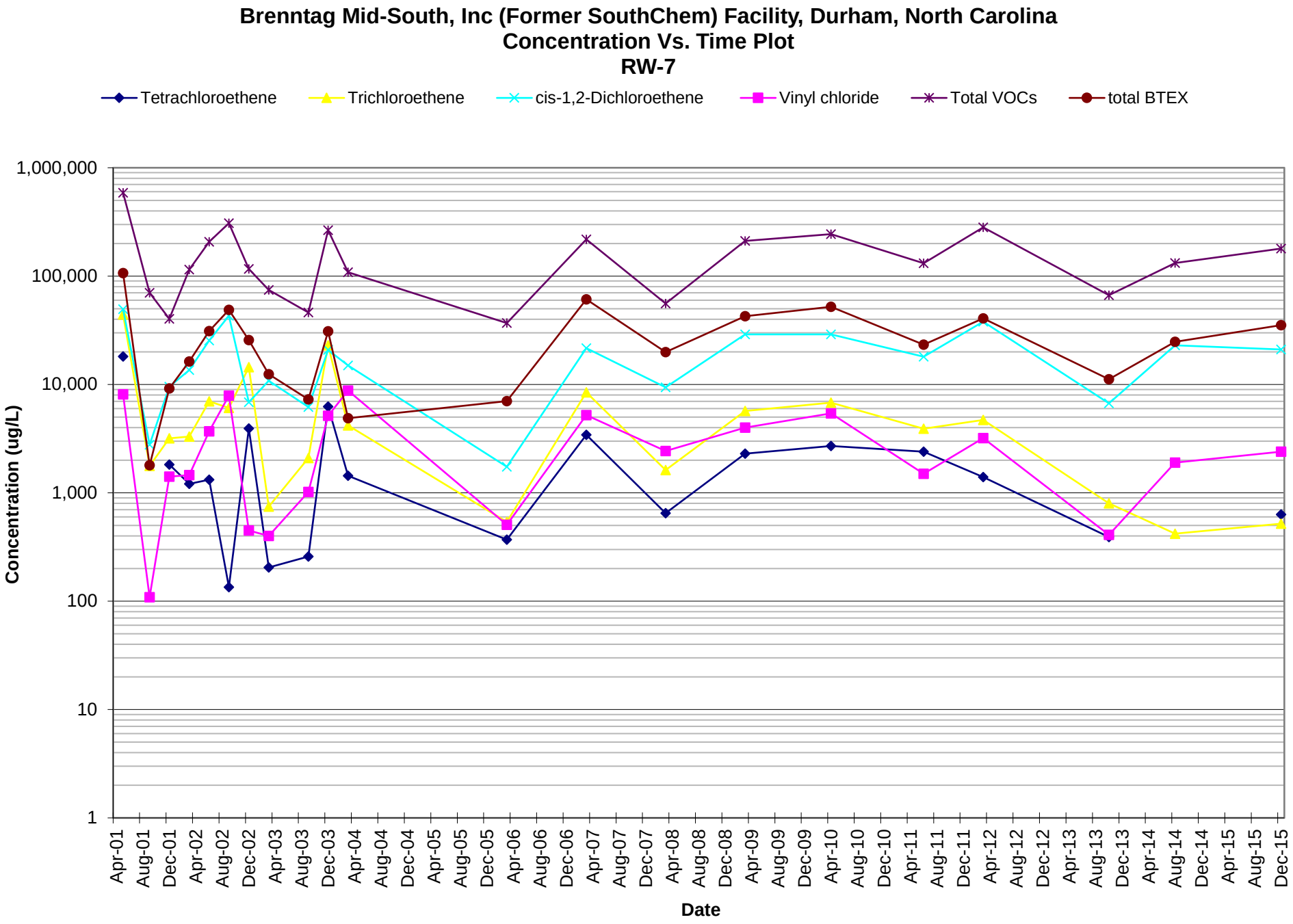
Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
RW-7
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
Dec-03
Apr-04
Aug-04
Dec-04
Apr-05
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Aug-08
Dec-08
Apr-09
Aug-09
Dec-09
Apr-10
Aug-10
Dec-10
Apr-11
Aug-11
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Apr-12
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Dec-12
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Apr-14
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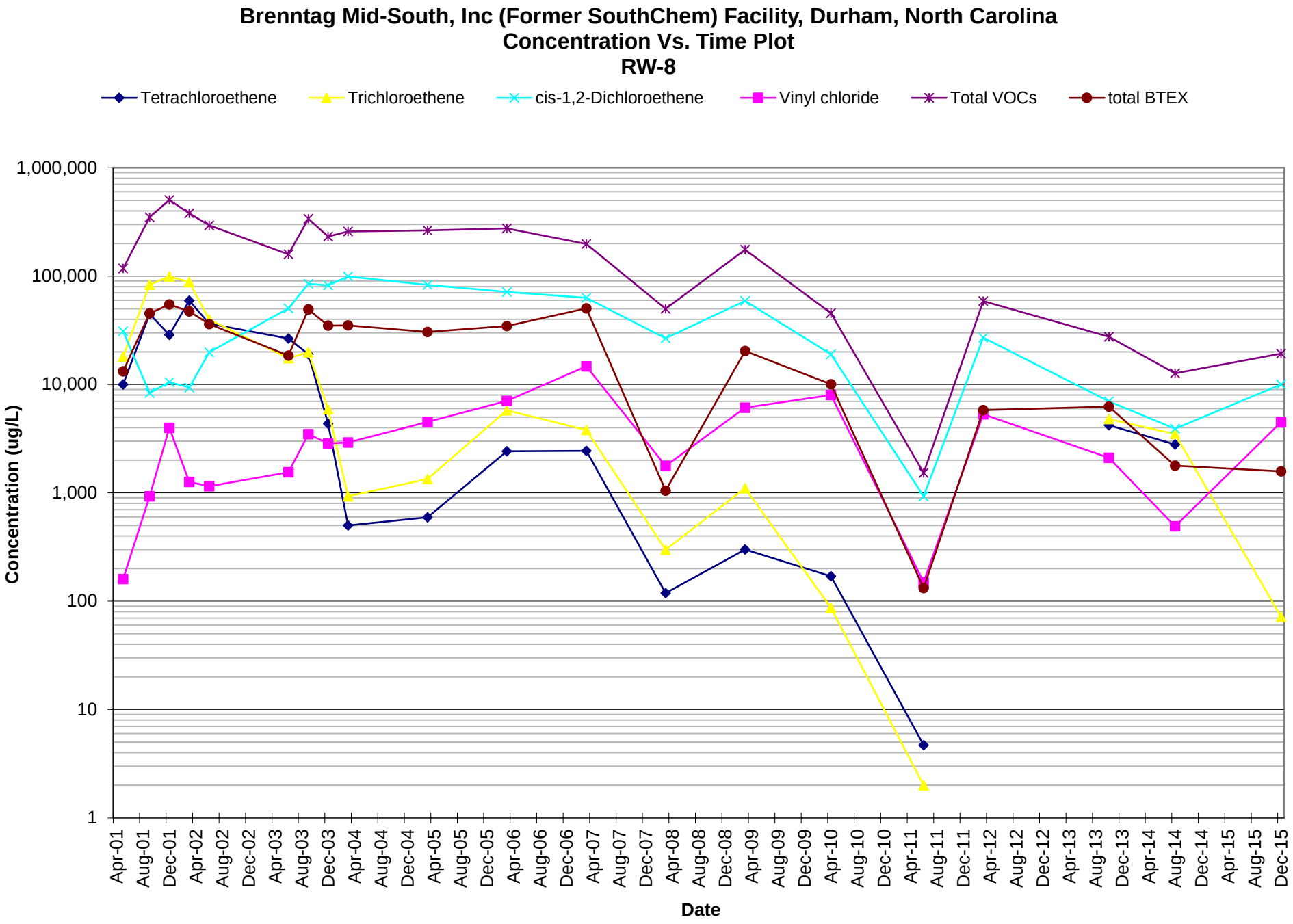
Dec-14
Apr-15
Aug-15
Dec-15


Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
RW-8
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
Dec-03
Apr-04
Aug-04
Dec-04
Apr-05
Aug-05
Dec-05
Apr-06
Aug-06
Dec-06
Apr-07
Aug-07
Dec-07
Apr-08
Aug-08
Dec-08
Apr-09
Aug-09
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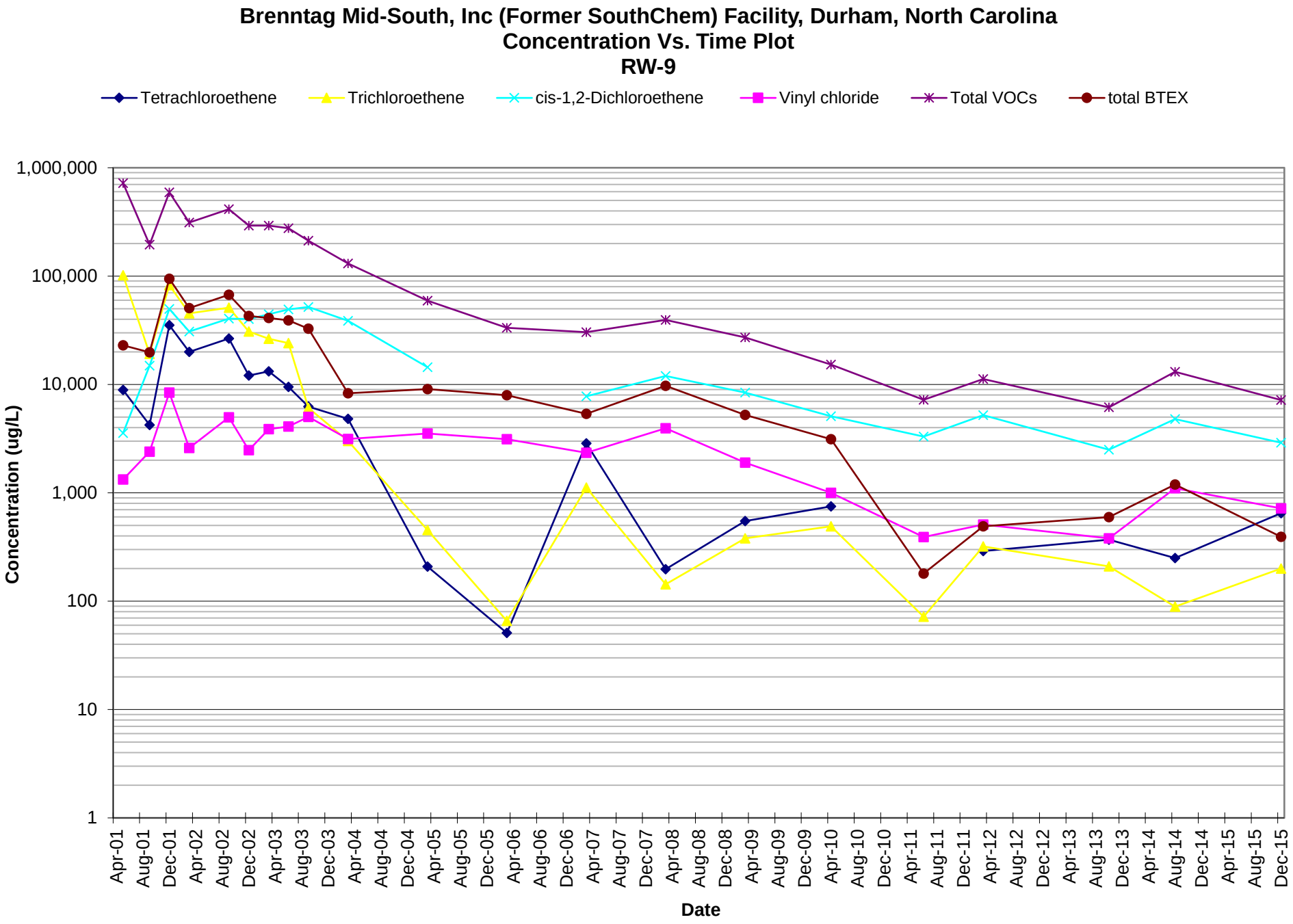
Apr-10
Aug-10
Dec-10
Apr-11
Aug-11
Dec-11
Apr-12
Aug-12
Dec-12
Apr-13
Aug-13
Dec-13
Apr-14
Aug-14
Dec-14
Apr-15
Aug-15
Dec-15


Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
RW-9
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
Dec-03
Apr-04
Aug-04
Dec-04
Apr-05
Aug-05
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Apr-06
Aug-06
Dec-06
Apr-07
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Apr-08
Aug-08
Dec-08
Apr-09
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Apr-12
Aug-12
Dec-12
Apr-13
Aug-13
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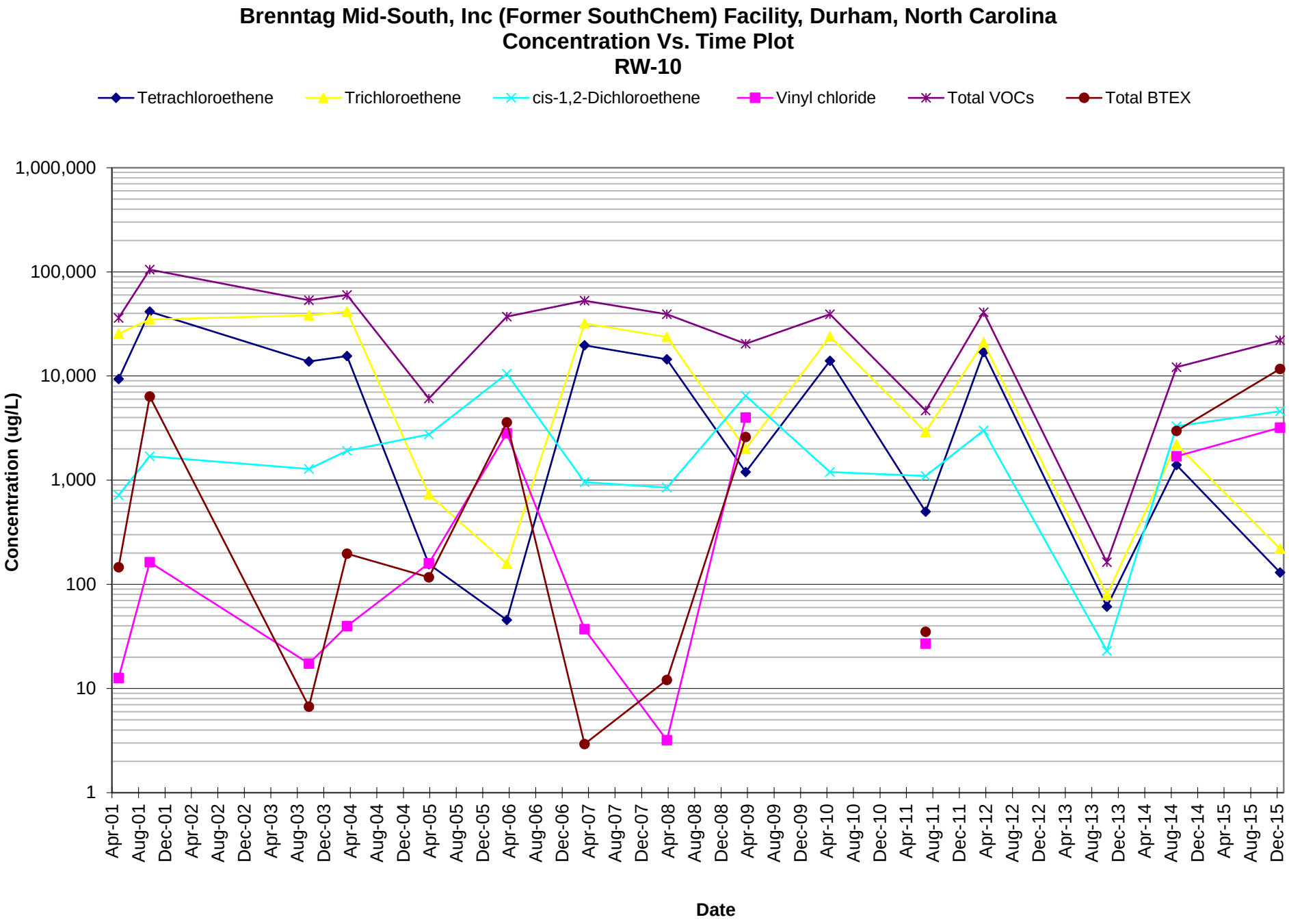
Apr-14
Aug-14
Dec-14
Apr-15
Aug-15
Dec-15


Brenntag Mid-South, Inc (Former SouthChem) Facility, Durham, North Carolina
Concentration Vs. Time Plot
RW-10
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
Vinyl chloride
Total VOCs
Total BTEX
Concentration (ug/L)
1,000,000
100,000
10,000
1,000
100
10
1
Date
Apr-01
Aug-01
Dec-01
Apr-02
Aug-02
Dec-02
Apr-03
Aug-03
Dec-03
Apr-04
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Dec-04
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Apr-15
Aug-15
Dec-15