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SCANNED

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Date: December 8, 2022
Our Ref: 30122070
Subject: Remedial Action Work Plan, Area #3, Brenntag Southeast, Inc. Facility, 4200 Azalea Drive, Charleston, South Carolina

Dear Mr. Hornosky,

Please find enclosed one hard copy of the Remediation Action Work Plan (RAWP) for Area #3 at the Brenntag Southeast, Inc. Facility located at 4200 Azalea Drive, Charleston, South Carolina. An electronic version of the RAWP was previously emailed on October 18, 2022.

Please contact me if you have any questions.

Sincerely,
Arcadis U.S., Inc.

RECEIVED
DEC 09 2022
SITE ASSESSMENT, REMEDIATION, & REVITALIZATION

Edward Hirshenson
Senior Scientist / Project Manager

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Enclosures:
RAWP, Area #3

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Brenntag Southeast, Inc.

Remedial Action Work Plan

Area #3

Brenntag Southeast, Inc. Facility
4200 Azalea Drive
Charleston, South Carolina

RECEIVED
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SITE ASSESSMENT,
REMEDIATION, &
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October 18, 2022

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Remedial Action Work Plan

Area #3

October 18, 2022

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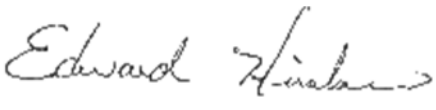

Ed Hirshenson
Senior Scientist / Project Manager (SC#2555)

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Acronyms and Abbreviations

% w/w	percent by weight
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
AFVR	aggressive fluid vapor recovery
amsl	above mean sea level
Arcadis	Arcadis U.S., Inc.
bgs	below ground surface
Bird	William M. Bird & Company, Inc.
Brenntag	Brenntag Southeast, Inc.
Burris	Burris Chemical Company
CVOC	chlorinated volatile organic compound
DCE	dichloroethane
DNAPL	dense non-aqueous phase liquid
DPT	direct push technology
ft	foot/feet
ISCR	in situ chemical reduction
MCL	Maximum Contaminant Limit
MNA	monitored natural attenuation
PCE	tetrachloroethene
PVC	polyvinyl chloride
RAWP	Remedial Action Work Plan
RSL	Regional Screening Level
SCDHEC	South Carolina Department of Health and Environment Control
TCE	trichloroethene
TCLP	Toxicity Characteristic Leaching Procedure
TOC	total organic carbon
UIC	Underground Injection Control
USEPA	United States Environmental Protection Agency
VC	vinyl chloride

VOC	volatile organic compound
ZVI	zero valent iron

1 Introduction

On behalf of Brenntag Southeast, Inc. (Brenntag), Arcadis U.S., Inc. (Arcadis) has prepared this Remedial Action Work Plan (RAWP) for Area #3 of the Brenntag facility (Site) located at 4200 Azalea Driver, Charleston, South Carolina (**Figure 1**). Using Site analytical data and existing information about currently available technologies, this RAWP examines the feasibility of various remedial technologies for treatment of chlorinated volatile organic compound (CVOC) impacts in groundwater and soil at Area #3. This RAWP serves as the principal document supporting the selection of a recommended remedial alternative and includes information on the design and implementation of the selected remedy.

A layout of the Site is provided on **Figure 2**. The Site currently operates as a chemical repackaging, distribution, and storage facility. The Site comprises approximately 8.5 acres of land and includes an office building, warehouse, oil packaging building, loading docks, and tank farms. The northern and western portions of the parcel are wooded. The Site is bounded to the east by Industrial Drive, to the south by Azalea Drive, and to the west by Brickyard Creek. The Site and surrounding properties are zoned for industrial and commercial use. Neighboring properties adjacent to the Site include:

- William M. Bird & Company, Inc., (Bird) a flooring manufacturing facility located to the south at 4210 Azalea Drive.
- A Charleston County Public Works facility located across Brickyard Creek to the west.
- The American Steel Fabricators facility located to the north at 2686 Industrial Avenue.
- A vacant warehouse located to the east at 2685 Industrial Avenue.
- NBS Media Systems, a company specializing in multimedia presentation system design and installation, located to the east at 2695 Industrial Avenue.

The Burris Chemical Company (Burris) previously operated a chemical warehouse and distribution facility, with the Burris facility including both the Site and the adjacent Bird property. Burris sold part of the facility to Brenntag in 1994 and sold the Bird property in 1996. Brenntag is responsible for environmental impacts at the Site, while Burris retained responsibility for environmental impacts on the Bird property.

2 Area #3 Investigations

2.1 Historical Investigations

Soil and groundwater impacts have historically been detected in two areas of the Site (**Figure 2**). Area #1 is located in the central portion of the facility and is impacted with CVOCs, primarily cis-1,2-dichloroethene (DCE) and vinyl chloride (VC). Area #2 is located in the southern portion of the facility and is primarily impacted with petroleum hydrocarbons. The impacts from these two areas are distinct and do not co-mingle. Remediation at Areas #1 and #2 are discussed under separate covers (Arcadis 2020b, 2021b).

During a direct push technology (DPT) investigation event at Area #2 in November 2020 (Arcadis 2021a), samples collected south of Area #2 contained elevated concentrations of trichloroethene (TCE), cis-1,2-DCE, and/or VC, primarily in groundwater. An additional DPT investigation in July 2021 (Arcadis 2021e) confirmed a new CVOC source area (since labelled Area #3) in the vicinity of the former railroad tracks along the southeastern corner of the property. A historical sampling matrix is provided in **Table 1**, while historical soil and groundwater sampling results are provided in **Tables 2** and **3**, respectively. Releases of CVOCs likely occurred due to loading and unloading activities by the previous property owner. As described in the following section, a supplemental investigation event was conducted in April 2022 to further delineate soil and groundwater impacts at Area #3. The distribution of CVOCs in groundwater and soil at Area #3 is discussed in Section 3.4.

2.2 2022 Supplemental Investigation Event

Based on the results collected from DPT investigations at Area #3 in 2020 and 2021 (Arcadis 2021a,d), a supplemental investigation event was conducted on April 28 and 29, 2022. During this event, 22 groundwater samples were collected from 11 soil borings (A3-37 through A3-47; **Figure 3**). Similar to the previous DPT sampling events, groundwater samples at each boring were collected from two depth zones from surficial groundwater at approximate depths of 7-10 feet (ft) below ground surface (bgs) and 17-20 ft bgs. Unsaturated soil samples were also collected from borings A3-45 and A3-46 at approximately 5 ft bgs to delineate soil source zone impacts.

A sample matrix is provided in **Table 1**. All soil and groundwater samples were analyzed for volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260. The soil sample from A3-46 was also analyzed for the following parameters by the Toxicity Characteristic Leaching Procedure (TCLP): VOCs by USEPA Method 8260; semi-volatile organic compounds by USEPA Method 8270; herbicides by USEPA 8151; pesticides by USEPA Method 8081; metals by USEPA Method 6010; mercury by USEPA Method 7470; and total cyanide by USEPA Method 9012. The laboratory analytical reports for the April 2022 supplemental investigation event are provided in **Appendix A**. Boring logs for A3-43 to A3-46 are included in **Appendix B**. Historical soil and groundwater DPT investigation results at Area #3, including from April 2022, are provided in **Tables 2** and **3**, respectively. The soil TCLP results from A3-46 are provided in **Table 4**. The results from the April 2022 supplemental investigation event are included in the discussion of soil and groundwater CVOC impacts in Section 3.4.

3 Conceptual Site Model

This section includes a summary of the hydrological, geological, and chemical conditions at Area #3. This information is then used to synthesize a conceptual site model (CSM), with a description provided at the conclusion of this section.

3.1 Site Topography and Drainage

Site topography generally slopes westward across the Site, with ground surface elevations of approximately 15 ft above mean sea level (amsl) along Industrial Avenue to approximately 5 ft amsl along Brickyard Creek. The Site is bound to the west by Brickyard Creek and to the north by a small unnamed intermittent creek/lowland area. Brickyard Creek drains southward into the Ashley River. Brickyard Creek is tidally influenced, and water level in the creek can fluctuate by several feet.

3.2 Site Geology and Hydrogeology

Figure 3 shows the location of a cross section through Area #3, while the cross section is presented in **Figure 4**. Unsaturated soils are composed of fine to medium grained sand interbedded with fine sand, silt, and clay. Saturated zone soils are composed of the following layers, from top to bottom:

- Fine to medium grain sands interbedded with silts and clays, similar to the unsaturated zone. The saturated thickness of this layer is approximately 2 ft in the downgradient (western) portion of Area #3, with the layer pinching out in the center of Area #3 near A3-43.
- Tight, fine-grained sand that are present in thickness up to 4 ft. This layer is present in the eastern and western portion of Area #3, but not in the central portion.
- Silty clays ranging in thickness from approximately 4 ft in the downgradient portion of Area #3 to approximately 10 ft in the central portion of Area #3.
- Stiff, green silty clays that are approximately 3 ft thick.
- Stiff green clays representing the upper portion of the Cooper Formation, a regionally extensive confining layer that is reported to range between 260 and 280 ft thick in the vicinity of the Site.

Groundwater in Area #3 was typically encountered at approximately 5 to 6 ft bgs at an elevation of approximately 10 ft amsl (**Figure 4**). The thickness of the saturated zone, as measured from the top of the water table to the Cooper Formation, is approximately 13 ft across Area #3. As shown in **Figure 5**, groundwater flow in the vicinity of Area #3 is to the west-northwest toward Brickyard Creek.

3.3 Site Geochemistry

Groundwater samples were collected from impacted and unimpacted areas at Area #1 to assess groundwater geochemistry (Arcadis 2019, 2020a). While the plumes at Area #1 and Area #3 are distinct, both are composed of elevated concentrations of CVOCs with little to no petroleum hydrocarbons in very similar lithology; therefore, groundwater geochemistry at Area #3 is expected to be comparable to Area #1.

As described in the Area #1 RAWP (Arcadis 2020b), background groundwater at the Site is slightly oxidizing, as evidenced by the presence of nitrate. However, the groundwater geochemistry is moderately to strongly reducing adjacent to and within the groundwater CVOC plume. In these areas, nitrate was depleted, and sulfide and methane was present at elevated levels, indicating sulfate-reducing to methanogenic conditions. Total organic carbon (TOC) concentrations indicate some amount of organic carbon is present, which is likely encouraging reductive dechlorination of Site CVOCs. Groundwater pH has historically ranged between 6.5 and 8 standard units, which is ideal for dechlorinating microorganisms. These results indicate groundwater at the Site is generally conducive to natural attenuation of CVOCs.

3.4 Distribution of Site Impacts

Soil and groundwater samples were collected from temporary borings at Area #3 in 2020, 2021, and 2022; historical soil and groundwater results are provided in **Tables 2** and **3**, respectively. A summary of groundwater analytical results in 2019 for five wells located downgradient of Area #3 on the Bird property (MW-11 and MW-16 through MW-19) are provided in **Table 5** (IPGX, Inc. 2019). The vast majority of compounds detected in Area #3 soil and groundwater were chlorinated ethenes (tetrachloroethene [PCE], TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, and VC). In addition, chlorinated ethenes accounted for all exceedances of USEPA Industrial Regional Screening Levels (RSLs) and Maximum Contaminant Limits (MCLs), with the exception of one total xylenes exceedance in deep surficial groundwater (A3-43); TCE also exceeded the MCL at that location.

The lateral distribution of total chlorinated ethenes in soil at Area #3 is presented on **Figure 6**. The lateral distribution of total chlorinated ethenes in shallow (7-10 ft bgs) and deep (15-20 ft bgs) surficial groundwater is shown on **Figures 7** and **8**, respectively. Vertical delineation of total CVOCs in soil and groundwater along the cross section through the middle of the plume is presented on **Figure 9**.

3.4.1 Soil

Soil samples collected from Area #3 indicate that unsaturated soil impacts are generally limited to a small area near the terminus of the railroad spur at the southeastern corner of the Site (**Figure 6**). TCE was the only compound that exceeded USEPA Industrial RSLs, with TCE exceeding the Industrial RSL of 6,000 micrograms per kilogram (µg/kg) in samples collected from A3-28 (5 ft) (162,000 µg/kg) and A3-46 (5 ft) (18,100,000 µg/kg); both of these samples are located immediately adjacent to the railroad spur. Concentrations of PCE, cis-1,2-DCE, and VC were also elevated in these samples, though below USEPA RSLs. No other sample contained any VOC above Industrial RSLs. TCLP analysis of the soil sample from A3-46 (5 ft) indicates the soil would be characterized as hazardous due to TCE (**Table 4**).

As shown in **Figure 6**, total chlorinated ethenes concentrations decreased substantially with distance from the railroad spur. For instance, total chlorinated ethenes declined from 18,190,965 µg/kg at A3-46 (5 ft) to 2,275 µg/kg at A3-24 (6 ft) and 20.8 µg/kg at A3-45 (5 ft), located approximately 30 ft west of the railroad spur. During discussions with historical Site personnel, it was confirmed that historical operations at Burris included docking tanker rail cars at the end of the railroad spur, transferring the contents to tanker trucks, and driving the tanker trucks to transfer the contents to the tank farm near Area #1.

3.4.2 Shallow Surficial Groundwater

The distribution of chlorinated ethenes in groundwater samples collected from the shallow surficial aquifer in the eastern portion of Area #3 generally match the distribution of soil samples (**Figure 7**). For instance, total chlorinated ethenes were highest immediately adjacent to the rail spur (i.e., 31,170 micrograms per liter [µg/L] at A3-28) and decreased substantially with distance (e.g., 204 µg/L at A3-24 and 152 µg/L at A3-45). However, unlike in soil, elevated chlorinated ethene concentrations were also detected in shallow surficial groundwater in the western portion of Area #3. Total chlorinated ethenes also exceeded 10,000 µg/L at four samples in the western portion of Area #4 (A3-18, A3-19, A3-37, and A3-38), with concentrations highest near the boundary with the Bird property. Interviews with historical Site personnel indicate no previous operations were known to have occurred in this area of the Site.

TCE in shallow surficial groundwater exceeded 1,000 µg/L in five samples: A3-18 (16,800 µg/L); A3-19 (6,090 µg/L); A3-28 (27,200 µg/L); A3-37 (18,600 µg/L), and A3-38 (41,100 µg/L). Each of these points are located either adjacent to the railroad spur or in the western portion of Area #3. Eight shallow surficial groundwater samples contained cis-1,2-DCE above 1,000 µg/L (A3-16 through A3-19, A3-28, A3-37, A3-38, and A3-43), with concentrations up to 49,300 µg/L. VC was detected above 1,000 µg/L at A3-16 (1,820 µg/L) and A3-17 (1,130 µg/L). TCE was the primary chlorinated ethene in seven samples, while cis-1,2-DCE was the primary chlorinated ethene in sixteen samples. The increased distribution and elevated concentrations of daughter products indicate that reductive dechlorination is likely occurring in shallow surficial groundwater.

3.4.3 Deep Surficial Groundwater

Groundwater samples indicate that highly elevated concentrations of chlorinated ethenes are present throughout deep surficial groundwater at Area #3 (**Figure 8**). Total chlorinated ethenes exceeded 10,000 µg/L in 16 deep surficial samples, including 10 samples where total chlorinated ethenes exceeded 100,000 µg/L. TCE was detected at highest concentrations from samples in the eastern and central portion of Area #3. TCE exceeded 100,000 µg/L in 10 samples, including at A3-40 (384,000 µg/L) and A3-41 (133,000 µg/L), located approximately 140 ft west of the railroad spur. These 10 samples contained concentrations greater than 10% of the TCE solubility limit, indicating the potential for dense non-aqueous phase liquid (DNAPL). DNAPL was subsequently confirmed through direct observation (DNAPL droplets observed in groundwater samples A3-43 through A3-45) as well as positive hydrophobic dye shake test results at A3-43 through A3-45 (a negative test result was observed at A3-46). A record of DNAPL observations is provided in **Appendix C**.

Concentrations of cis-1,2-DCE greater than 10,000 µg/L were detected in nine samples. While TCE was the dominant CVOC in most deep surficial groundwater samples, cis-1,2-DCE was the dominant CVOC in samples collected from the western portion of Area #3 (A3-16, A3-17, A3-19, A3-37, and A3-38). VC concentrations were generally much lower, with only four samples exceeding 100 µg/L; these samples were generally located in the western portion of Area #3.

Total CVOC concentrations generally decrease greatly with distance downgradient of the Site boundary. For instance, total chloroethene concentrations decrease from 50,163 µg/L at A3-38 (near the property boundary) to: 9,985 µg/L at MW-17, approximately 12 ft downgradient of the property boundary; 2,830 µg/L at MW-11, approximately 100 ft downgradient of the property boundary; 727 µg/L at MW-19, approximately 120 ft downgradient of the property boundary; to non-detect at MW-16, approximately 300 ft downgradient of the property boundary.

3.4.4 Soil Vapor

An indoor air sampling event was conducted in the office building overlying the Area #3 plume in June 2021 to evaluate whether CVOC vapors are causing any unacceptable risks for Site workers. On June 22, 2021, three indoor air samples (**Figure 3**) were collected from within the Brenntag office building during an 8-hour period and analyzed for VOCs by modified USEPA Method TO-15. While some VOCs (TCE, PCE, toluene, and xylenes) were detected in indoor air, all concentrations were below USEPA Industrial RSLs for indoor air (**Table 6)**. The June 2021 indoor air sampling event is summarized in greater detail in the First Semi-Annual 2021 Groundwater Monitoring Report (Arcadis 2021c).

3.5 Fate of Chlorinated Ethenes

Under anaerobic conditions, chlorinated ethenes can undergo a process called reductive dechlorination in which indigenous or augmented microorganisms degrade (metabolize) these compounds, converting them to innocuous end products. In this process, the dechlorinating microorganisms use an electron donor, typically dissolved hydrogen, and the chlorinated ethene as the electron acceptor, thereby respiring the chlorinated ethene. Chlorinated ethenes are sequentially reduced through a series of two-electron transfer reactions, whereby a chlorine atom is removed and replaced with a hydrogen atom. The sequential reduction of TCE will eventually produce ethene, a non-toxic end-product via the following transformation steps:

TCE → cis-1,2-DCE → VC → ethene

Reductive dechlorination of TCE generally results in production of cis-1,2-DCE, which is more energetically-favorable than production of other DCE isomers (i.e., trans-1,2-DCE and 1,1-DCE). The presence of daughter products cis-1,2-DCE and VC at Area #3 indicates that reductive dechlorination is occurring at the Site.

Chlorinated ethenes may also be degraded abiotically via the beta-elimination pathway, whereby CVOCs are degraded to chloroacetylene, a highly transient daughter product that quickly degrades to acetylene and, ultimately, carbon dioxide. Chlorinated daughter products are not produced through abiotic degradation. Abiotic CVOC degradation is typically a relatively rare process but can be accelerated in the presence of zero valent metals (e.g., zero valent iron [ZVI]) or reactive iron minerals, such as iron sulfides.

3.6 CSM Summary

CVOC impacts are detected in soil and groundwater at Area #3. Groundwater is present at approximately 5 to 6 ft bgs. The saturated zone is comprised of layers of clayey sands and silts, stiff clays, and sands. The clays and silts likely represent zones of greater VOC mass storage, with limited lateral migration, while the sands likely represent zones of greater VOC mass transport. The stiff clays of the upper portion of the Cooper Formation, located approximately 20 ft bgs, act as a lower boundary for surficial groundwater at the Site.

Historical operations at Burris likely resulted in spills from the transfer of TCE from tanker rail cars to tanker trucks at the end of the railroad spur in the southeast corner of the Site. Based on soil concentrations, the area of the spills was relatively minor, and only a small amount of source material remains in unsaturated soils. However, based on the lateral extent of highly elevated TCE concentrations in groundwater downgradient of the railroad spur, it appears that significant volumes of TCE were released to the ground. No evidence of release was detected in unsaturated soil in the west of the Area #3, but increased shallow groundwater concentrations indicate

a potential second release occurred in this area of the Site. Groundwater concentrations at the western portion of Area #3 were highest near the southwest corner of the Site property.

TCE that was spilled near the railroad spur quickly migrated downward, with relatively limited lateral migration in the shallow surficial aquifer (7-10 ft bgs). The stiff clays of the Cooper Formation effectively serve as a barrier to vertical migration beyond 20 ft bgs, so the TCE DNAPL spread laterally on top of the Cooper Formation downgradient of the railroad spur. This resulted in highly elevated concentrations of dissolved-phase TCE throughout deep surficial (15-20 ft bgs) groundwater. The elevated groundwater concentrations are not causing unacceptable risks to indoor air at the on-Site office building.

Degradation of TCE is occurring in groundwater. cis-1,2-DCE was the dominant CVOC in most samples from shallow surficial groundwater, as well as in deep surficial groundwater samples from the western (downgradient) portion of Area #3. Elevated cis-1,2-DCE and/or VC concentrations were also found in deep surficial groundwater samples from the eastern and central portions of the Site. In addition, advective groundwater flow at the Site is relatively low, likely limiting the downgradient extent of impacts (e.g., CVOCs are non-detect less than 300 ft downgradient of the Site).

4 Selected Remedial Actions

Active remedial measures will be implemented in Area #3 to address elevated concentrations of CVOCs in soil and groundwater. The remedial measures will include:

- Excavation and off-Site disposal of unsaturated soil;
- In situ chemical reduction (ISCR) in Area #3 groundwater; and
- Aggressive fluid vapor recovery (AFVR).

The goal of these remedial measures will be to remove soil impacts greater than USEPA Industrial RSLs and reduce concentrations in groundwater to allow monitored natural attenuation (MNA) to be a more viable corrective action. A description of each remedial technology and rationale for its selection in this RAWP is provided in the following section. Implementation details for the proposed remedial actions are provided in Section 4.2.

4.1 Remedial Technologies

4.1.1 Excavation and Off-Site Disposal

Excavation and off-Site disposal will seek to completely remove the remaining source term in the unsaturated zone at Area #3. Unsaturated soil impacted with TCE at concentrations greater than the USEPA Industrial RSL will be excavated to the top of water table and properly disposed of off-Site. TCE was the only VOC that exceeded Industrial RSLs in soil. Sampling results indicate that exceedances are limited to the vicinity of borings A3-28 and A3-46, with an anticipated area of 20 by 30 ft, and a total volume of 110 cubic yards. TCLP sampling results indicate the soil will need to be disposed of as hazardous material (**Table 2**).

4.1.2 In Situ Chemical Reduction

Under ISCR, a strong chemical reductant (e.g., ZVI) is added to the subsurface. Many commercially available ZVI products are blended with a form of organic carbon as well. The combined ZVI and organic carbon substrate enhances in situ degradation of CVOCs by the following methods:

- Abiotic degradation with ZVI occurs via the beta-elimination pathway, whereby CVOCs are degraded to chloroacetylene, a highly transient daughter product that quickly degrades to non-chlorinated acetylene. Therefore, abiotic destruction with ZVI does not result in an increase of regulated chlorinated daughter products.
- Biological degradation occurs through reductive dechlorination. Fermentation of the organic carbon yields an electron donor (e.g., dissolved hydrogen) that drives terminal electron accepting processes, resulting in the depletion of naturally occurring electron acceptors (e.g., oxygen, nitrate, ferric iron, sulfate, and carbon dioxide [methanogenesis]) and creating conditions in which the reductive dechlorination of CVOCs is energetically favorable. Based on the presence of cis-1,2-DCE and VC in Area #3 groundwater, reductive dechlorination of TCE is already occurring naturally; however, reductive dechlorination is likely electron donor limited.
- Reduction of naturally occurring iron and sulfate, as well as the injection of iron, results in the formation and transport of reduced iron and sulfide species, which ultimately precipitate as reactive iron sulfide minerals.

These reactive iron sulfide minerals are also able to abiotically degrade CVOCs via the beta-elimination pathway, extending the area of treatment beyond the injection zone and elongating the period of treatment.

- Various formulations can be employed to more efficiently treat DNAPL. For instance, in some blends ZVI is impregnated within emulsified vegetable oil droplets; DNAPL droplets will desorb into the vegetable oil, where they can be degraded by the ZVI, increasing overall treatment.

ISCR will be implemented in Area #3 groundwater with highly elevated CVOC concentrations. ISCR is typically implemented by mixing the ZVI substrate into a slurry and injecting via temporary injection points under high pressures. This high-pressure injection ensures adequate distribution of the substrate throughout the subsurface, even in low permeability aquifer zones. ISCR was successfully implemented at Area #1 in 2021 (Arcadis 2021d); preliminary results indicate ISCR injections have substantially reduced CVOC concentrations at most Area #1 monitoring wells (**Appendix D**).

4.1.3 Aggressive Fluid Vapor Recovery

AFVR, also called high-vacuum extraction, dual-phase extraction, multi-phase extraction, or vacuum-enhanced recovery, is an aggressive extraction technology where a high vacuum or negative pressure is applied to a well to remove DNAPL, aqueous-phase liquid, and/or vapor from the subsurface, resulting in mass removal and a reduction in long-term mass flux to groundwater. AFVR would be implemented at Area #3 via temporary events conducted at wells located in known or suspected DNAPL areas. Temporary AFVR events are not expected to result in large amounts of extracted groundwater; 3,727 gallons of fluids were recovered from MW-14 at Area #2 during a 72-hour AFVR event in September 2020 (Arcadis 2021b). However, removal of even low volumes of DNAPL could result in significantly lower quantities of contaminant mass requiring in situ treatment, accelerating remedial progress. Extracted liquids will likely need to be disposed of as hazardous material.

4.2 Remedial Action Implementation

The overall objective of the remedial actions is to address elevated CVOC concentrations in soil and groundwater, reducing the potential for long-term downgradient mass flux and allowing MNA to be a more viable corrective action. The layout for the proposed remedial actions is shown in **Figure 10**. A phased approach will be utilized, with future phases of work being informed by results from previous phases. Remedial actions will be implemented in an adaptive way to best achieve Site objectives. For instance, injection locations may be adjusted, the ISCR substrate formulation may be altered to better treat DNAPL, or AFVR events may be discontinued if recovery is deemed to be inefficient. The specific technical objectives of the remedial action include:

- Install a monitoring well network and, following ISCR implementation, initiate a performance monitoring program to aid evaluation of the proposed remedial actions;
- Excavate and properly dispose of unsaturated soil with concentrations of TCE greater than the Industrial RSL and backfill with clean soil;
- Implement ISCR by injecting a combined ZVI and organic carbon substrate along the property boundary to limit off-Site mass flux;
- Conduct at least one temporary AFVR event to evaluate the efficacy of AFVR to remove significant quantities of DNAPL;
- Similarly, implement ISCR within and around the DNAPL source zone by injecting a combined ZVI and organic carbon substrate to enhance source mass destruction;

- Maintain conditions conducive for the continued degradation of CVOCs in Area #3 groundwater; and
- Enhance abiotic and biotic transformation of residual CVOCs to reduce the potential for downgradient mass discharge and overall MNA duration.

The following sections outline the steps required to implement the selected remedial actions.

4.2.1 Pre-Remedial Activities

Prior to beginning any subsurface activities (i.e., soil excavation, well installation, DPT injections), Arcadis will contact the public utility locate service (SC 811) and contract with a private utility locator to identify any underground utilities. In addition, each sampling or injection point will be cleared via soft-digging techniques to 5 ft bgs.

Prior to ISCR implementation, an Underground Injection Control (UIC) permit application will be prepared and submitted to the South Carolina Department of Health and Environment Control (SCDHEC) UIC Program. No other permits are anticipated to be required during implementation of the remedial action.

4.2.2 Phase 1 – Monitoring Well Installations

To aid evaluation of remedial progress at Area #3, seven monitoring wells will be installed (**Figure 10**). Well construction details for all proposed monitoring wells are provided in **Table 7**. Additional monitoring wells may be installed, based on the results from baseline sampling and the need to better evaluate remedial progress from future phases of work. The monitoring wells will be 2-inch diameter, installed using hollow-stem auger drilling techniques, and be constructed with polyvinyl chloride (PVC) riser. Wells inside suspected DNAPL areas (i.e., MW-22 through MW-25) will be constructed of 10-ft long, 0.01-inch wire-wrapped stainless-steel screen. Other monitoring wells (i.e, MW-26 through MW-28) will be constructed with 0.01-inch slotted PVC screen. The wells will be installed immediately above the clay confining unit, with an anticipated total depth of approximately 20 ft bgs. Each monitoring well will have an appropriately-sized filter pack installed to 2 ft above the top of screen, followed by a 2-ft thick bentonite seal. A bentonite/grout mix will then be installed to 3 ft bgs, with cement grout from 0 to 3 ft bgs. All wells will be completed with flush-mounted, traffic-rated well vaults set in a concrete pad.

Following installation, the wells will be developed using a combination of pumping and surging until water quality parameters are stabilized and the well is free of visible sediment. All soil cuttings, development water, and decontamination fluids will be characterized and properly disposed of. The new locations will be surveyed to establish location (northing and easting) and elevation (ground surface and top of casing).

A baseline monitoring event will be conducted following development at all newly installed wells (**Table 8**). During the baseline sampling event, depth to water and (if present) product thickness levels will be measured at each newly installed well. Each well will be sampled via low-flow sampling methods. Once field parameters have stabilized, a sample from each well will be analyzed for VOCs by USEPA Method 8260. In addition, monitoring wells MW-2R, MW-22, MW-24, MW-27, MW-29, and MW-31 will be analyzed for the following biogeochemical parameters: TOC by USEPA Method 9060A; dissolved iron by USEPA Method 6010; nitrate and sulfate by USEPA Method 375.4; sulfide by Standard Method 4500-S2; and dissolved gases (methane, ethane, ethene, and acetylene) by RSK-175. All samples for dissolved iron will be filtered prior to sample collection using a 0.45-micron field filter.

4.2.3 Phase 2 – Excavation of Soil Source

During the second phase of remedial action implementation, the unsaturated source soil impacted with TCE greater than the USEPA Industrial RSL of 6,000 µg/kg will be excavated and removed from the Site. Excavation will be conducted to the top of water table (approximately 3 to 5 ft bgs). The area of excavation is estimated to be approximately 20 ft by 30 ft, with a total estimated volume of approximately 110 cubic yards. During excavation, confirmation soil samples sidewalls (1 sample per 25 ft, located just above the base of excavation) and analyzed for VOCs on a rapid-turn time to confirm the lateral extent of TCE exceedances have been removed. No samples will be collected from the excavation base since it will be the top of the saturated zone. All soil will be disposed of properly off-Site. Based on TCLP VOC analytical results (**Table 4**), the excavated soil will be disposed of as hazardous material.

4.2.4 Phase 3 – Property Boundary ISCR

ISCR at Area #3 will first be implemented along the southern and western property boundaries to limit off-Site mass flux. The substrate selected for injection along the Site boundary is EHC®, a long-lasting reagent which is composed of approximately 40 percent by weight (% w/w) ZVI and 60% w/w organic carbon. EHC® successfully enhanced abiotic and biological CVOC destruction at Area #1 (**Appendix D**). Similar to Area #1 (Arcadis 2020b), the design amount of EHC® required to adequately dose the volume of soil in the target treatment area was estimated as 0.3% w/w. Assuming a treatment area of approximately 6,000 square ft, a treatment thickness of 14 ft, and a soil density of 1.6 tons per cubic yard, approximately 27,700 pounds of EHC® is required to be injected along the southern and western property boundaries. The proposed layout of the Phase 3 EHC® injection program is shown on **Figure 10**. The proposed injection program includes 28 temporary DPT injection points installed in transects along the southern and western property boundary, with a design radius of influence of 7.5 ft. Injections will be conducted at least 10 ft away from the office building to limit the potential for methane accumulation beneath the building. The final number, location, and injection intervals of Phase 3 ISCR injection points will be based on results from the Phase 2 baseline sampling event. Survey measurements will be collected from all injection points upon completion of the injection event.

To achieve delivery, the EHC® material will be mixed and injected as a slurry into dedicated target intervals. The low mobility of the slurry combined with the slow-release nature of the carbon and ZVI materials will then provide effective, sustained treatment to eliminate CVOCs within the lower permeability clay (i.e., mass storage) zones. The injection system will be equipped with two mixing hoppers, allowing for mixing of one slurry batch while the other is being injected. The EHC® will initially be mixed as a 20% w/w slurry. Each injection interval will receive 214 gallons of slurry (160 gallons water, 330 pounds of EHC®). Water for the injection slurry will be obtained from an on-Site source.

The injections are designed to target the entire saturated interval above the lower confining unit, an estimated thickness of 14 ft. During injection, each point will receive delivery at up to three 2-ft thick injection intervals per point, with adjacent borings having injection intervals vertically offset by 2 ft. The EHC® slurry will be injected via DPT using the “top-down” approach, with injection beginning at the shallowest interval and progressing downward. Proposed injection intervals for each point are summarized in **Table 9**. The injection flow rate is expected to be within the range of 5 to 15 gallons per minute, and injection pressures are expected to be in the range of 100 to 300 pounds per square inch. Detailed information on injection pressures, volumes, intervals, and timing of injection for each point will be collected during the injection event. In addition, injection monitoring at

wells within the injection area (i.e., MW-24, MW-25, MW-27, and MW-28) will be conducted at least twice per day and will include collection of water levels and downhole measurement of field parameters.

During injection, “daylighting” of injection solution may be observed around the injection tooling along the outside of the DPT injection boring or via preferential pathways associated with sub-surface structures (i.e. along the casing of a nearby well). In order to decrease the potential for daylighting at nearby wells, injections will not be conducted within a 10-ft radius of Site monitoring wells. If daylighting is observed during injection, injection in that interval will cease. Depending on the depth of the injection interval and amount of volume delivered, the injection tooling could be advanced deeper to reseal the boring with the soil formation or withdrawn and advanced in a new adjacent borehole and attempted again. Decisions in these cases will be made in consultation with the technical project staff.

An adaptive approach will be used to continuously evaluate and, if necessary, adjust the injection program. Design injection volumes and concentrations may be altered if conditions in the field are different than anticipated. Injection locations may be adjusted in the field, and additional injection points may be added if needed. Following injection, all boreholes will be properly abandoned and completed to match the surrounding surface. Performance monitoring will be conducted at nearby monitoring wells following ISCR implementation (Section 4.3 and **Table 10**).

4.2.5 Phase 4 – AFVR Pilot Study

As described in Section 4.5, monitoring wells MW-22 through MW-25 will be installed in potential DNAPL zones. Following baseline monitoring to confirm the presence of DNAPL, an 8 to 12-hour AFVR event will be conducted on at least one well. If DNAPL is not detected in any well, the AFVR pilot study will be conducted on the well with the highest total chlorinated ethene concentrations.

During the AFVR pilot extraction event, a temporary mobile multi-phase extraction trailer will be used to extract groundwater, soil vapors, and (if present) DNAPL. The multi-phase extraction trailer will have a power supply, hoses, wellhead connections with vacuum gauges, safety equipment, instrumentation, liquid-ring vacuum pump, and down-well stringer pipe. Data collected during each AFVR event will include system and extraction well vacuum, vapor-phase VOCs, air-flow rate, temperature, fluid recovery rate, humidity, vacuum influence, and drawdown. Drawdown, vacuum influence, and (following cessation) groundwater recovery will be measured in the extraction and nearby monitoring wells. The extracted liquid will be properly disposed of off-Site following the conclusion of the extraction event; based on groundwater concentrations, it is anticipated that all extracted liquids will likely need to be disposed of as hazardous material.

The efficacy of AFVR and necessity of future AFVR events will be evaluated following completion of the first AFVR event.

4.2.6 Phase 5 – Source Area ISCR

ISCR will be implemented in groundwater in and around the source zone to enhance mass destruction and accelerate clean up times at the Site. The ZVI/organic carbon substrate to be used in the source area will be selected at a future date following the Phase 3 ISCR injections and will be formulated specifically to target DNAPL, if present. ISCR in and near the source zone will be implemented in a similar manner to the Phase 3 injections, via high-pressure DPT injections targeting the entire impacted interval. Other design parameters,

including design slurry concentration, injection radius of influence, injection locations, etc. will be evaluated based on results from previous phases of remedial action at Area #3.

Similar to the Phase 3 ISCR injections, injection monitoring will be conducted at wells within the injection area at least twice per day to monitor for injection response (including water level elevations and downhole measurement of field parameters). Performance monitoring will be conducted at nearby monitoring wells following ISCR implementation (Section 4.3). During implementation, an adaptive approach will be used to continuously evaluate and, if necessary, adjust the injection program. Design injection volumes and concentrations may be altered if conditions in the field are different than anticipated, and injections may be conducted in multiple phases. Injection locations may be adjusted in the field, and additional injection points may be added or removed, as needed. Following injection, all boreholes will be properly abandoned and completed to match the surrounding surface.

4.3 Performance Monitoring

As detailed in **Table 9**, seven monitoring wells (MW-22 through MW-28) are proposed to be installed at Area #3. Following installation, all wells will be sampled as part of a baseline monitoring event (Section 4.2.3) and subsequently integrated into the Site's existing semi-annual groundwater compliance monitoring program, with each well sampled for VOCs by USEPA 8260. Following initial ISCR implementation in Phases 3 and 5, nearby monitoring wells will be sampled quarterly for one year and semi-annually for two additional years for the following parameters: VOCs by USEPA Method 8260; TOC by USEPA Method 9060A; dissolved iron by USEPA Method 6010; sulfate by USEPA Method 375.4; sulfide by Standard Method 4500-S2; and dissolved gases (methane, ethane, ethene, and acetylene) by RSK-175. All wells will be sampled via low-flow methods, and samples for dissolved iron will be filtered prior to sample collection using a 0.45-micron field filter. The rationale for the analytical parameters includes:

- **VOCs** – VOC concentrations collected during the post-injection monitoring events will be used to evaluate the relative change in concentrations compared to baseline. Changes in concentrations will be compared to historical results and performance monitoring data to steer decision making relative to additional injections, supplemental monitoring activities, and other optimization activities, as needed.
- **TOC** – Serving as the primary source of dissolved hydrogen for indigenous dechlorinating microbial species, TOC analyses will serve as an analytical method to verify reagent distribution and that sufficient residual organic carbon exists to support the dechlorination process. Detectable TOC concentrations that are 10 milligrams per liter above background will demonstrate that sufficient TOC remains to support treatment.
- **Dissolved iron** – The reducing conditions required for reductive dechlorination will also result in the reduction, dissolution, and mobilization of naturally-occurring iron from the native aquifer mineralogy. In addition, anaerobic corrosion of ZVI will produce dissolved iron. The presence of elevated concentrations of dissolved iron provide a positive indication that reducing conditions are present.
- **Sulfate and sulfide** – A reduction in sulfate concentrations would indicate strongly reducing conditions are present. Sulfate reduction will result in the production of sulfides, which readily react with dissolved iron to form iron sulfide minerals. These iron sulfide minerals will precipitate out of solution and can provide additional reaction surfaces for abiotic CVOC degradation.
- **Methane** – The reduction of carbon dioxide to methane occurs following the depletion of alternative electron acceptors (oxygen, nitrate, iron/manganese, and sulfate) and is confirmation that the strongly-reducing conditions required for efficient biological reduction of chlorinated ethenes are present.

- **Ethene, ethane, and acetylene** – Ethene and ethane are the primary end products of reductive dechlorination, while acetylene is the primary end product of abiotic CVOC degradation. The presence of these compounds would confirm that CVOCs are undergoing complete degradation through either the abiotic or biologically-mediated pathway.

The proposed monitoring program following Phase 3 ISCR implementation is provided in **Table 10**. Three years after ISCR implementation, nearby wells will be re-integrated into the Site's semi-annual compliance monitoring program, with each well sampled for VOCs, though additional biogeochemical parameters may still be collected to evaluate remedial performance.

4.4 Reporting

Remedial implementation details, baseline sampling results, and performance monitoring results will be summarized within the existing semi-annual compliance monitoring reports. Remedial implementation details provided in the report will include remedial layouts, mass and volumes of soil excavated from the Site, mass and volume of remedial substrates injected at each point, and injection monitoring data. Any modifications to the proposed monitoring and remedial program will be recommended, as necessary, in the semi-annual monitoring reports. Following completion of the Phase 5 ISCR injections, a Construction Completion Report will be submitted to SCDHEC documenting all remedial implementation details.

4.5 Schedule

A proposed schedule of remedial implementation is provided in **Table 11**. Contingent on SCDHEC review and public comment periods, it is anticipated that remedial implementation will begin in 2023. It is anticipated that planning and implementation of Phase 1 excavation, Phase 2 well installations, and Phase 3 ISCR injections can be conducted in 2023. In 2024, the Phase 4 AFVR pilot event will be conducted on at least one well to evaluate the effectiveness of AFVR to remove DNAPL from Site groundwater. Post-injection performance monitoring will also be conducted throughout 2024 to evaluate ISCR implementation. Performance monitoring data will be evaluated to design and plan the Phase 5 source area ISCR injection event, with Phase 5 injections anticipated to occur in 2025. Performance monitoring will be conducted following the Phase 5 injections. Additional well installations, AFVR events, and/or injections may be conducted, based on the results of previous phases of work.

Performance monitoring will begin immediately after initial ISCR injections. Performance monitoring will be conducted quarterly for the first year after injections, and semi-annually thereafter (**Table 10**). Performance monitoring will help determine the necessity and timing of follow-on injections. Injection and monitoring activities will be documented in semi-annual compliance monitoring reports submitted to SCDEHC, including groundwater analytical and quality assurance/quality control results, chain of custody records, groundwater sampling and field data sheets, groundwater data tables (including elevation and concentration data), and groundwater contour maps. Any proposed adjustments to the injection and/or monitoring programs will be included in the semi-annual reports.

5 References

Arcadis. 2019. First Semiannual 2019 Groundwater Report, Brenntag Southeast, Charleston, South Carolina. August 22.

Arcadis. 2020a. First Semiannual 2020 Groundwater Report, Brenntag Southeast, Charleston, South Carolina. August 13.

Arcadis. 2020b. Remedial Action Work Plan, Area #1, Brenntag Southeast, Charleston, South Carolina. December.

Arcadis. 2021a. Second Semi-Annual 2020 Groundwater Monitoring Report, Brenntag Southeast, Charleston, South Carolina. March 1.

Arcadis. 2021b. Remedial Action Work Plan, Area #2, Brenntag Southeast, Charleston, South Carolina. September.

Arcadis. 2021c. First Semi-Annual 2021 Groundwater Monitoring Report, Brenntag Southeast, Charleston, South Carolina. September 1.

Arcadis. 2021d. EHC Injection Construction Completion Report, Area #1, Brenntag Southeast, Charleston, South Carolina. September 2.

Arcadis. 2021e. Additional Geoprobe Investigation at the Former Unloading/Loading Railroad Tracks, Brenntag Southeast, Charleston, South Carolina. September 16.

IPGX, Inc. 2019. Groundwater and Soil Vapor Assessment Report, 4200-4210 Azalea Drive (Area 1), N. Charleston, SC. May.

Tables

Table 1
Area #3 Investigation Sampling Matrix

Remedial Action Work Plan, Area #3
Brenntag Charleston

Sample ID [1]	Unsaturated Soil (3 ft bgs)	Unsaturated Soil (5-6 ft bgs)	Shallow Surficial Groundwater (7-10 ft bgs)	Deep Surficial Groundwater (15-20 ft bgs)
November 2020 DPT Samples				
A2-15	X	X	X	X
A3-16	X	X	X	X
A3-17	X	X	X	X
A3-18	X	X	X	
A3-19	X	X	X	X
A3-21	X	X		
A3-22	X	X	X	X
A3-23	X	X	X	X
A3-24	X	X	X	X
A3-25	X	X	X	X
July 2021 DPT Samples				
A3-27	X	X	X	X
A3-28	X	X	X	X
A3-29	X	X	X	X
A3-30	X	X	X	X
A3-31	X	X	X	X
A3-32	X	X	X	X
A3-33	X	X	X	X
A3-34	X	X	X	X
A3-35	X	X	X	X
A3-36	X	X	X	X
April 2022 DPT Samples				
A3-37			X	X
A3-38			X	X [2]
A3-39			X	X
A3-40			X	X
A3-41			X	X
A3-42			X	X
A3-43			X	X
A3-44			X	X
A3-45			X	X
A3-46		X	X	X
A3-47		X [3]	X	X

Notes

1. All samples analyzed for volatile organic compounds
2. Sample collected from 12-15 ft bgs
3. Toxicity Characteristic Leaching Potential samples also collected

ft bgs = feet below ground surface

Table 2
Area #3 Soil Sampling Results

Remedial Action Work Plan, Area #3
Brenntag Charleston

Sample ID: Sample Depth (ft bgs): Date Sampled:	USEPA Industrial RSL	A#2-15 3 11/18/20	A#2-15 5 11/18/20	A#3-16 3 11/18/20	A#3-16 5 11/18/20	A#3-17 3 11/18/20	A#3-17 5 11/18/20	A#3-18 3 11/18/20	A#3-18 5 11/18/20	A#3-19 3 11/18/20	A#3-19 5 11/18/20	A#3-21 3 11/18/20	A#3-21 5 11/18/20	A#3-22 3 11/18/20	A#3-22 6 11/18/20
Volatile Organic Compounds [1] (µg/kg)															
Acetone	**1,100,000,000**	<70	**119 J**	<68	<77	<69	**69.9 J**	<76	<81	**77 J**	<85	<67	<72	<64	<69
Carbon Disulfide	**3,500,000**	<0.7	<0.76	<0.68	<0.77	<0.69	**1.6 J**	<0.76	<0.81	<0.71	<0.85	<0.67	<0.72	<0.64	<0.69
1,1-Dichloroethene	**1,000,000**	<0.70	<0.76	<0.68	<0.77	<0.69	<0.69	<0.76	<0.81	<0.71	<0.85	<0.67	<0.72	<0.64	<0.69
cis-1,2-Dichloroethene	**2,300,000**	<0.97	<1	<0.94	<1.1	<0.96	<0.95	<1	**2.2 J**	**57.2**	**70.4**	<0.92	<0.99	<0.89	**9.1**
trans-1,2-Dichloroethene	**300,000**	<0.7	<0.76	<0.68	<0.77	<0.69	<0.69	<0.76	<0.81	**0.76 J**	**0.96 J**	<0.67	<0.72	<0.64	<0.69
Ethylbenzene	**25,000**	<0.7	<0.76	<0.68	<0.77	<0.69	<0.69	<0.76	<0.81	<0.71	<0.85	<0.67	<0.72	<0.64	<0.69
Isopropylbenzene	**9,900,000**	<0.7	<0.76	<0.68	<0.77	<0.69	<0.69	<0.76	<0.81	<0.71	<0.85	<0.67	<0.72	<0.64	<0.69
Methylcyclohexane	NE	<1.2	<1.3	<1.2	<1.3	<1.2	<1.2	<1.3	<1.4	<1.2	<1.4	<1.1	<1.2	<1.1	<1.2
Methyl ethyl ketone	**190,000,000**	<5.1	**8 J**	<5	<5.6	<5	**7.3 J**	<5.5	<5.9	**5.5 J**	<6.2	<4.9	<5.2	<4.7	<5
Tetrachloroethene	**100,000**	<0.9	<0.97	<0.87	<0.99	<0.89	<0.88	<0.97	<1	<0.91	<1.1	<0.86	<0.92	<0.82	<0.88
Trichloroethene	**6,000**	<0.7	<0.76	<0.68	<0.77	<0.69	<0.69	<0.76	<0.81	**3.5**	**28.2**	<0.67	<0.72	<0.64	<0.69
Vinyl Chloride	**1,700**	<0.7	<0.76	<0.68	<0.77	<0.69	<0.69	<0.76	<0.81	<0.71	**2.2 J**	<0.67	<0.72	<0.64	**1.3 J**
Total Xylenes	**2,500,000**	<1.5	<1.6	<1.4	<1.6	<1.5	<1.4	<1.6	<1.7	<1.5	<1.8	<1.4	<1.5	<1.4	<1.4
Total Chlorinated Ethenes [2] (µg/kg)															
Total Chlorinated Ethenes	NE	ND	ND	ND	ND	ND	ND	ND	**2.2**	**61.5**	**102**	ND	ND	ND	**10.4**

Notes

1. Only compounds detected in at least one sample are shown
2. Total chlorinated ethenes includes tetrachloroethene, trichloroethene, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride

µg/kg = micrograms per kilogram
ft bgs = feet below ground surface
J = constituent concentration was qualified as estimated
ND = not detected
NE = none established
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency
Exceeds USEPA Industrial RSL

Table 2
Area #3 Soil Sampling Results

Remedial Action Work Plan, Area #3
Brenntag Charleston

Sample ID: / Sample Depth (ft bgs): / Date Sampled:	USEPA Industrial RSL	A#3-23 3 11/18/20	A#3-23 5 11/18/20	A#3-24 3 11/18/20	A#3-24 6 11/18/20	A#3-25 3 11/18/20	A#3-25 5 11/18/20	A#3-27 3 07/28/21	A#3-27 5 07/28/21	A#3-28 3 07/28/21	A#3-28 5 07/28/21	A#3-29 3 07/28/21	A#3-29 5 07/28/21	A#3-30 3 07/28/21	A#3-30 5 07/28/21
Volatile Organic Compounds [1] (µg/kg)															
Acetone	**1,100,000,000**	<82	<72	<79	<70	**183**	**122**	<62	<79	<74	<63	<70	<64	<65	<68
Carbon Disulfide	**3,500,000**	<0.82	**0.89 J**	<0.79	**2.8 J**	**1.2 J**	**3 J**	<0.62	<0.79	<0.74	**1.8**	**1.7**	**4.5**	<0.65	<0.68
1,1-Dichloroethene	**1,000,000**	<0.82	<0.72	<0.79	**2.6 J**	<0.66	<0.81	<0.62	<0.79	<0.74	**39.6**	<0.70	<0.64	**2**	<0.68
cis-1,2-Dichloroethene	**2,300,000**	<1.1	<1	<1.1	**2,090**	**3.2 J**	**3.4 J**	<0.85	<1.1	**36.4**	**31,900**	**542**	**6.8**	**51.3**	**16.1**
trans-1,2-Dichloroethene	**300,000**	<0.82	<0.72	<0.79	**12.2**	**1.3 J**	**1.1 J**	<0.62	<0.79	<0.74	**374**	**7.8**	**2.1**	**18.9**	**1.6**
Ethylbenzene	**25,000**	<0.82	<0.72	<0.79	<0.70	**1.9 J**	<0.81	<0.62	<0.79	<0.74	<0.63	<0.70	<0.64	<0.65	<0.68
Isopropylbenzene	**9,900,000**	<0.82	<0.72	<0.79	<0.70	**1.6 J**	<0.81	<0.62	<0.79	<0.74	<0.63	<0.70	<0.64	<0.65	<0.68
Methylcyclohexane	NE	<1.4	<1.2	<1.3	<1.2	<1.1	<1.4	<1.0	<1.3	<1.3	<1.1	<1.2	<1.1	<1.1	<1.2
Methyl ethyl ketone	**190,000,000**	<6	<5.2	<5.7	**6.5 J**	**32.8**	**21**	<4.5	<5.7	<5.4	<4.6	<5.1	**8.2**	<4.7	<4.9
Tetrachloroethene	**100,000**	<1	<0.92	<1	<0.89	<0.84	<1	<0.79	<1.0	<0.94	**66.9**	<0.89	<0.82	<0.84	<0.87
Trichloroethene	**6,000**	**2.1 J**	**0.94 J**	**9.5**	**4.7**	**59**	**1,230**	**4.3**	**4.7**	**36.3**	**162,000**	<0.70	**2**	**353**	**9.3**
Vinyl Chloride	**1,700**	<0.82	<0.72	**1.2 J**	**165 J**	**5.3**	**4.2**	<0.62	<0.79	**1.5**	**265**	**13.5**	**3.6**	**1.6**	<0.68
Total Xylenes	**2,500,000**	<1.7	<1.5	<1.7	<1.5	**4.7 J**	**1.9 J**	<1.3	<1.7	<1.5	**2.3**	<1.5	<1.3	<1.4	<1.4
Total Chlorinated Ethenes [2] (µg/kg)															
Total Chlorinated Ethenes	NE	**2.1**	**0.94**	**10.7**	**2,275**	**68.8**	**1,239**	**4.3**	**4.7**	**74.2**	**194,646**	**563**	**14.5**	**427**	**27**

Notes

1. Only compounds detected in at least one sample are shown
2. Total chlorinated ethenes includes tetrachloroethene, trichloroethene, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride

µg/kg = micrograms per kilogram
ft bgs = feet below ground surface
J = constituent concentration was qualified as estimated
ND = not detected
NE = none established
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency
Exceeds USEPA Industrial RSL

Table 2
Area #3 Soil Sampling Results

Remedial Action Work Plan, Area #3
Brenntag Charleston

Sample ID: / Sample Depth (ft bgs): / Date Sampled:	USEPA Industrial RSL	A#3-31 3 07/28/21	A#3-31 5 07/28/21	A#3-32 3 07/28/21	A#3-32 5 07/28/21	A#3-33 3 07/29/21	A#3-33 5 07/29/21	A#3-34 3 07/29/21	A#3-34 5 07/29/21	A#3-35 3 07/29/21	A#3-35 5 07/29/21	A#3-36 3 07/29/21	A#3-36 5 07/29/21	A#3-45 5 04/29/22	A#3-46 5 04/29/22
Volatile Organic Compounds [1] (µg/kg)															
Acetone	**1,100,000,000**	<60	<67	<65	<62	**112**	<66	**97.7**	<72	<65	<77	<62	**78.2**	<75	<6800
Carbon Disulfide	**3,500,000**	<0.60	<0.67	<0.65	<0.62	**2.1**	<0.66	<0.53	<0.72	<0.65	<0.77	<0.62	<0.65	<0.75	<68
1,1-Dichloroethene	**1,000,000**	<0.60	<0.67	<0.65	<0.62	<0.70	<0.66	<0.53	<0.72	<0.65	<0.77	<0.62	<0.65	<0.75	**255**
cis-1,2-Dichloroethene	**2,300,000**	**2.6**	<0.92	<0.89	<0.86	<0.97	<0.92	<0.74	<0.99	**38.8**	<1.1	<0.85	<0.90	<1.0	**59,200**
trans-1,2-Dichloroethene	**300,000**	**2.6**	<0.67	<0.65	<0.62	<0.70	<0.66	<0.53	<0.72	**2**	<0.77	<0.62	<0.65	<0.75	**1,750**
Ethylbenzene	**25,000**	<0.60	<0.67	<0.65	<0.62	<0.70	<0.66	<0.53	<0.72	<0.65	<0.77	<0.62	<0.65	<0.75	**88.5**
Isopropylbenzene	**9,900,000**	<0.60	<0.67	<0.65	<0.62	<0.70	<0.66	<0.53	<0.72	<0.65	<0.77	<0.62	<0.65	<0.75	<68
Methylcyclohexane	NE	<1.0	<1.1	<1.1	<1.1	<1.2	<1.1	<0.91	<1.2	**1.4**	<1.3	<1.1	<1.1	<1.3	<750
Methyl ethyl ketone	**190,000,000**	<4.4	<4.9	<4.7	<4.5	**12.4**	<4.8	**16.4**	<5.2	<4.7	<5.6	<4.5	**8.6**	<1.5	<120
Tetrachloroethene	**100,000**	<0.77	<0.86	<0.83	<0.80	<0.90	<0.85	<0.68	<0.92	<0.83	<0.99	<0.79	<0.84	<0.96	**28,100**
Trichloroethene	**6,000**	**27.9**	**2.6**	<0.65	<0.62	<0.70	<0.66	<0.53	<0.72	**23.2**	<0.77	<0.62	<0.65	**20.8**	**18,100,000**
Vinyl Chloride	**1,700**	<0.60	<0.67	<0.65	<0.62	<0.70	<0.66	<0.53	<0.72	<0.65	<0.77	<0.62	<0.65	<0.75	**1,660**
Total Xylenes	**2,500,000**	<1.3	<1.4	<1.4	<1.3	<1.5	<1.4	<1.1	<1.5	<1.4	<1.6	<1.3	<1.4	<1.6	**433**
Total Chlorinated Ethenes [2] (µg/kg)															
Total Chlorinated Ethenes	NE	**33.1**	**2.6**	ND	ND	ND	ND	ND	ND	**64**	ND	ND	ND	**20.8**	**18,190,965**

Notes

1. Only compounds detected in at least one sample are shown
2. Total chlorinated ethenes includes tetrachloroethene, trichloroethene, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride

µg/kg = micrograms per kilogram
ft bgs = feet below ground surface
J = constituent concentration was qualified as estimated
ND = not detected
NE = none established
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency
Exceeds USEPA Industrial RSL

Table 3
Area #3 Groundwater Sampling Results

Remedial Action Work Plan, Area #3
Brenntag Charleston

Sample ID: / Sample Depth (ft bgs): / Date Sampled:	USEPA MCL	A#2-15 7-10 11/20/20	A#2-15 17-20 11/20/20	A#3-16 7-10 11/20/20	A#3-16 17-20 11/20/20	A#3-17 7-10 11/20/20	A#3-17 17-20 11/20/20	A#3-18 7-10 11/20/20	A#3-19 7-10 11/20/20	A#3-19 17-20 11/20/20	A#3-22 7-10 11/20/20	A#3-22 17-20 11/20/20	A#3-23 7-10 11/20/20	A#3-23 17-20 11/20/20	A#3-24 7-10 11/20/20	A#3-24 17-20 11/20/20
Volatile Organic Compounds [1] (µg/L)																
Acetone	NE	<10	**19.8 J**	<250	<2500	<500	<1000	<2500	<2500	<1000	<20	<5000	<25	<10	<25	<5000
Benzene	**5**	**0.64 J**	<0.31	<7.8	<78	<16	<31	<78	<78	<31	<0.62	<160	<0.78	<0.31	<0.78	<160
Carbon Disulfide	NE	<0.53	**0.84 J**	<13	<130	<27	<53	<130	<130	<53	<1.1	<270	<1.3	<0.53	<1.3	<270
Cychlohexane	NE	<0.39	<0.39	<9.8	<98	<20	<39	<98	<98	<39	<0.78	<200	<0.98	<0.39	<0.98	<200
1,1-Dichloroethene	**7**	<0.32	<0.32	<8.1	<81	<16	<32	<81	<81	<32	<0.64	**560**	<0.81	<0.32	<0.81	**345 J**
cis-1,2-Dichloroethene	**70**	**69.4**	**0.51 J**	**1,830**	**23,500**	**4,880**	**15,400**	**5,650**	**12,900**	**5,290**	**6**	**14,000**	<0.69	<0.28	**191**	**2,810**
trans-1,2-Dichloroethene	**100**	**0.44 J**	<0.22	<5.5	**177 J**	<11	**177**	**99.2 J**	**76.6 J**	**78 J**	<0.44	**406 J**	<0.55	<0.22	**1.4 J**	<110
o-Dichlorobenzene	**600**	<0.32	<0.32	<8.1	<81	<16	<32	<81	<81	<32	<0.65	<160	<0.81	<0.22	<0.81	<160
Ethylbenzene	**700**	**18.6**	**0.47 J**	<8.9	<89	<18	<36	<89	<89	<36	<0.71	<180	<0.89	<0.36	<0.89	<180
Isopropylbenzene	NE	**0.90 J**	<0.22	<5.5	<55	<11	<22	<55	<55	<22	<0.44	<110	<0.55	<0.22	<0.55	<110
Methyl ethyl ketone	NE	<2.0	<2.0	<50	<500	<100	<200	<500	<500	<200	<4.0	<1000	<5.0	<2.0	<5.0	<1000
Tetrachloroethene	**5**	<0.22	<0.22	<5.4	<54	<11	<22	<54	<54	<22	<0.43	<110	<0.54	<0.22	<0.54	**331 J**
Trichloroethene	**5**	<0.35	<0.35	<8.6	<86	<17	**463**	**16,800**	**6,090**	**1,220**	**1.8 J**	**538,000**	**74.2**	**12.4**	**1.8 J**	**316,000**
Vinyl Chloride	**2**	**12.8**	<0.41	**1,820**	**2,190**	**1,130**	**141**	**232 J**	**224 J**	**518**	**6**	<200	<1.0	<0.41	**12.9**	<200
Total Xylenes	**1,000**	**33.9**	<0.72	<18	<180	<36	<72	<180	<180	<72	<1.4	<360	<1.8	<0.72	<1.8	<360
Total Chlorinated Ethenes [2] (µg/L)																
Total Chlorinated Ethenes	NE	**82.6**	**0.51**	**3,650**	**25,690**	**6,010**	**16,181**	**22,781**	**19,291**	**7,028**	**13.8**	**552,560**	**74.2**	**12.4**	**207**	**318,810**

Notes

1. Only compounds detected in at least one sample are shown
2. Total chlorinated ethenes includes tetrachloroethene, trichloroethene, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride

µg/L = micrograms per liter
ft bgs = feet below ground surface
J = constituent concentration was qualified as estimated
ND = not detected
NE = none established
MCL = Maximum Contaminant Level
USEPA = United States Environmental Protection Agency
Exceeds USEPA MCL

Table 3
Area #3 Groundwater Sampling Results

Remedial Action Work Plan, Area #3
Brenntag Charleston

Sample ID: / Sample Depth (ft bgs): / Date Sampled:	USEPA MCL	A#3-25 7-10 11/20/20	A#3-25 17-20 11/20/20	A#3-27 7-10 07/28/21	A#3-27 17-20 07/28/21	A#3-28 7-10 07/28/21	A#3-28 17-20 07/28/21	A#3-29 7-10 07/28/21	A#3-29 17-20 07/28/21	A#3-30 7-10 07/28/21	A#3-30 17-20 07/28/21	A#3-31 7-10 07/28/21	A#3-31 17-20 07/28/21	A#3-32 7-10 07/28/21	A#3-32 17-20 07/28/21	A#3-33 7-10 07/29/21
Volatile Organic Compounds [1] (µg/L)																
Acetone	NE	<50	<10000	<10	<10	<50000	<20000	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	**5**	<1.6	<310	<0.31	<0.31	<1600	<620	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Carbon Disulfide	NE	<2.7	<530	<0.53	<0.53	<2700	<1100	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53
Cychlohexane	NE	<2.0	<390	<0.39	<0.39	<2000	<780	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,1-Dichloroethene	**7**	<1.6	**460 J**	<0.32	<0.32	<1600	<640	<0.32	**4**	<0.32	<0.32	<0.32	**1.8**	<0.32	<0.32	<0.32
cis-1,2-Dichloroethene	**70**	**442**	**17,400**	<0.28	<0.28	**3,970**	**540**	<0.28	**23.7**	**13.6**	<0.28	<0.28	**142**	<0.28	<0.28	<0.28
trans-1,2-Dichloroethene	**100**	**7**	**1,070**	<0.22	<0.22	<1100	<440	<0.22	<0.22	**1.4**	<0.22	<0.22	**1.9**	<0.22	<0.22	<0.22
o-Dichlorobenzene	**600**	**1.6**	<320	<0.22	<0.22	<1100	<430	<0.22	<0.22	<0.22	<0.22	<0.32	<0.22	<0.32	<0.22	<0.22
Ethylbenzene	**700**	<1.8	<360	<0.36	<0.36	<1800	<710	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36
Isopropylbenzene	NE	<1.1	<220	<0.22	<0.22	<1100	<440	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Methyl ethyl ketone	NE	<10	<2000	<2.0	<2.0	<10000	<4000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Tetrachloroethene	**5**	<1.1	<220	<0.22	<0.22	<1100	<430	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Trichloroethene	**5**	<1.7	**313,000**	<0.35	<0.35	**27,200**	**63,200**	<0.35	**55.9**	**1.6**	**0.58**	<0.35	**431**	<0.35	<0.35	<0.35
Vinyl Chloride	**2**	**20.9**	<410	<0.41	<0.41	<2000	<820	<0.41	<0.41	**0.58**	<0.41	<0.41	**3.5**	<0.41	<0.41	<0.41
Total Xylenes	**1,000**	<3.6	<720	<0.72	<0.72	<3600	<1400	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72
Total Chlorinated Ethenes [2] (µg/L)																
Total Chlorinated Ethenes	NE	**470**	**331,470**	ND	ND	**31,170**	**63,740**	ND	**83.6**	**17.2**	**0.58**	ND	**580**	ND	ND	ND

Notes

1. Only compounds detected in at least one sample are shown
2. Total chlorinated ethenes includes tetrachloroethene, trichloroethene, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride

µg/L = micrograms per liter
ft bgs = feet below ground surface
J = constituent concentration was qualified as estimated
ND = not detected
NE = none established
MCL = Maximum Contaminant Level
USEPA = United States Environmental Protection Agency
Exceeds USEPA MCL

Table 3
Area #3 Groundwater Sampling Results

Remedial Action Work Plan, Area #3
Brenntag Charleston

Sample ID: / Sample Depth (ft bgs): / Date Sampled:	USEPA MCL	A#3-33 17-20 07/29/21	A#3-34 7-10 07/29/21	A#3-34 17-20 07/29/21	A#3-35 7-10 07/29/21	A#3-35 17-20 07/29/21	A#3-36 7-10 07/29/21	A#3-36 17-20 07/29/21	A#3-37 7-10 04/28/22	A#3-37 15-18 04/28/22	A#3-38 7-10 04/28/22	A#3-38 12-15 04/28/22	A#3-39 7-10 04/28/22	A#3-39 17-20 04/28/22	A#3-40 7-10 04/28/22	A#3-40 17-20 04/28/22
Volatile Organic Compounds [1] (µg/L)																
Acetone	NE	<10	<10	<10	<10	<10	<10	<10	<13000	<6300	<25000	<13000	<1300	<25000	<25	<25000
Benzene	**5**	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<500	<250	<1000	<500	<50	<1000	<1.0	<1000
Carbon Disulfide	NE	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<1000	<500	<2000	<1000	<100	<2000	<2.0	<2000
Cychlohexane	NE	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<500	<250	<1000	<500	<50	<1000	<1.0	<1000
1,1-Dichloroethene	**7**	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<500	<250	<1000	<500	<50	<1000	<1.0	**607 J**
cis-1,2-Dichloroethene	**70**	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	**7,290**	**5,190**	**49,300**	**40,500**	**487**	**9,150**	**80.8**	**33,600**
trans-1,2-Dichloroethene	**100**	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<500	<250	<1000	**373**	<50	<1000	<1.0	<1000
o-Dichlorobenzene	**600**	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<500	<250	<1000	<500	<50	<1000	<1.0	<1000
Ethylbenzene	**700**	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<500	<250	<1000	<500	<50	<1000	<1.0	<1000
Isopropylbenzene	NE	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<500	<250	<1000	<500	<50	<1000	<1.0	<1000
Methyl ethyl ketone	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**1,460**	**767**	**3,020**	**1,320**	**121**	**2,830**	<5.0	**2590**
Tetrachloroethene	**5**	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<500	<250	<1000	<500	<50	<1000	<1.0	<1000
Trichloroethene	**5**	<0.35	<0.35	<0.35	**0.68**	<0.35	**0.52**	<0.35	**18,600**	**401**	**41,100**	**9,290**	<50	**33,400**	<1.0	**384,000**
Vinyl Chloride	**2**	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<500	<250	<1000	<500	**221**	<1000	**44.5**	<1000
Total Xylenes	**1,000**	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72	<1500	<750	<3000	<1500	<150	<3000	<3.0	<3000
Total Chlorinated Ethenes [2] (µg/L)																
Total Chlorinated Ethenes	NE	ND	ND	ND	**0.68**	ND	**0.52**	ND	**25,890**	**5,591**	**90,400**	**50,163**	**708**	**42,550**	**125**	**417,600**

Notes

1. Only compounds detected in at least one sample are shown
2. Total chlorinated ethenes includes tetrachloroethene, trichloroethene, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride

µg/L = micrograms per liter
ft bgs = feet below ground surface
J = constituent concentration was qualified as estimated
ND = not detected
NE = none established
MCL = Maximum Contaminant Level
USEPA = United States Environmental Protection Agency
Exceeds USEPA MCL

Table 3
Area #3 Groundwater Sampling Results

Remedial Action Work Plan, Area #3
Brenntag Charleston

Sample ID: / Sample Depth (ft bgs): / Date Sampled:	USEPA MCL	A#3-41 7-10 04/28/22	A#3-41 17-20 04/28/22	A#3-42 7-10 04/29/22	A#3-42 15-18 04/29/22	A#3-43 7-10 04/29/22	A#3-43 17-20 04/29/22	A#3-44 7-10 04/28/22	A#3-44 15-18 04/28/22	A#3-45 7-10 04/29/22	A#3-45 17-20 04/29/22	A#3-46 7-10 04/29/22	A#3-46 15-18 04/29/22	A#3-47 7-10 04/29/22	A#3-47 17-20 04/29/22
Volatile Organic Compounds [1] (µg/L)															
Acetone	NE	<5000	<25000	<50	<25000	<1300	<1300000	<50	<25000	<50	<630000	<25	<250000	<25	<500000
Benzene	**5**	<200	<1000	<2.0	<1000	<50	<50000	<2.0	<1000	<2.0	<25000	<1.0	<10000	<1.0	<20000
Carbon Disulfide	NE	<400	<2000	<4.0	<2000	<100	<100000	<4.0	<2000	<4.0	<50000	<2.0	<20000	<2.0	<40000
Cychlohexane	NE	<200	<1000	<2.0	<1000	<50	<50000	<2.0	<1000	<2.0	**25,000**	<1.0	<10000	<1.0	<20000
1,1-Dichloroethene	**7**	<200	**430**	<2.0	<1000	<50	<50000	<2.0	**1,450**	<2.0	<25000	<1.0	<10000	<1.0	<20000
cis-1,2-Dichloroethene	**70**	**693**	**18,900**	**5.1**	**50,700**	**2,000**	<50000	**5.3**	**28,800**	**91.3**	<25000	<1.0	<10000	<1.0	<20000
trans-1,2-Dichloroethene	**100**	<200	<1000	<2.0	<1000	<50	<50000	<2.0	<1000	<2.0	<25000	<1.0	<10000	<1.0	<20000
o-Dichlorobenzene	**600**	<200	<1000	<2.0	<1000	<50	<50000	<2.0	<1000	<2.0	<25000	<1.0	<10000	<1.0	<20000
Ethylbenzene	**700**	<200	<1000	<2.0	<1000	<50	<50000	<2.0	<1000	<2.0	<25000	<1.0	<10000	<1.0	<20000
Isopropylbenzene	NE	<200	<1000	<2.0	<1000	<50	<50000	<2.0	<1000	<2.0	<25000	<1.0	<10000	<1.0	<20000
Methyl ethyl ketone	NE	**609**	**2,980**	**11.2**	<5000	<250	<250000	<10	<5000	<10	<130000	<5.0	<50000	<5.0	<100000
Tetrachloroethene	**5**	<200	<1000	<2.0	<1000	<50	<50000	<2.0	**36,700**	<2.0	<25000	<1.0	<10000	<1.0	<20000
Trichloroethene	**5**	**551**	**133,000**	<2.0	**18,100**	<50	**1,250,000**	**2.6**	**22,200,000**	**51.3**	**1,240,000**	**48.4**	**350,000**	<1.0	**790,000**
Vinyl Chloride	**2**	<200	<1000	<2.0	**860**	**404**	<50000	<2.0	<1000	**9.6**	<25000	<1.0	<10000	<1.0	<20000
Total Xylenes	**1,000**	<600	<3000	<6.0	<3000	<150	**150,000**	<6.0	<3000	<6.0	<75000	<3.0	<30000	<3.0	<60000
Total Chlorinated Ethenes [2] (µg/L)															
Total Chlorinated Ethenes	NE	**1,244**	**152,330**	**5.1**	**69,660**	**2,404**	**1,250,000**	**7.9**	**22,266,950**	**152**	**1,240,000**	**48.4**	**350,000**	ND	**790,000**

Notes

1. Only compounds detected in at least one sample are shown
2. Total chlorinated ethenes includes tetrachloroethene, trichloroethene, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride

µg/L = micrograms per liter
ft bgs = feet below ground surface
J = constituent concentration was qualified as estimated
ND = not detected
NE = none established
MCL = Maximum Contaminant Level
USEPA = United States Environmental Protection Agency
Exceeds USEPA MCL

Table 4
Soil TCLP Sampling Results

Remedial Action Work Plan, Area #3
Brenntag Charleston

Sample ID: Sample Depth (ft bgs): Date Sampled:	Hazardous Classification	A#3-46 5 04/29/22
TCLP Volatile Organic Compounds (mg/L)		
Benzene	**0.5**	<0.25
2-Butanone (MEK)	**200**	<1.3
Carbon Tetrachloride	**0.5**	<1.3
Chlorobenzene	**100**	<1.3
Chloroform	**6**	<1.3
1,4-Dichlorobenzene	**7.5**	<1.3
1,2-Dichloroethane	**0.5**	<1.3
1,1-Dichloroethene	**0.7**	<1.3
Tetrachloroethene	**0.7**	<1.3
Trichloroethene	**0.5**	**23.7**
Vinyl Chloride	**0.2**	<1.3
TCLP Semi-Volatile Organic Compounds (mg/L)		
2-Methylphenol	**200**	<0.050
3&4-Methylphenol	**200**	<0.050
Pentachlorophenol	**100**	<0.25
2,4,5-Trichlorophenol	**400**	<0.050
2,4,6-Trichlorophenol	**2**	<0.050
1,4-Dichlorobenzene	**7.5**	<0.050
2,4-Dinitrotoluene	**0.13**	<0.050
Hexachlorobenzene	**0.13**	<0.050
Hexachlorobutadiene	**0.5**	<0.050
Hexachloroethane	**3**	<0.050
Nitrobenzene	**2**	<0.050
Pyridine	**5**	<0.10
TCLP Herbicides (mg/L)		
2,4-Dinitrotoluene	**10**	<0.050
2,4,5-TP (Silvex)	**1**	<0.0050
TCLP Pesticides (mg/L)		
gamma-BHC (Lindane)	**0.4**	<0.0010
Chlordane	**0.03**	<0.010
Endrin	**0.02**	<0.0020
Heptachlor	**0.008**	<0.0010
Heptachlor epoxide	**0.008**	<0.0010
Methoxychlor	**10**	<0.0020
Toxaphene	**0.5**	<0.0050
TCLP Metals (mg/L)		
Arsenic	**5**	<0.10
Barium	**100**	<2.0
Cadmium	**1**	<0.050
Chromium	**5**	<0.10
Lead	**5**	<0.050
Mercury	**0.2**	<0.0050
Selenium	**1**	<0.10
Silver	**5**	<0.10
General Chemistry		
Cyanide, Total (mg/kg)	NE	<0.14
Solids (%)	NE	**76.5**

Notes

ft bgs = feet below ground surface
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
NE = none established
TCLP = Toxicity Characteristic Leaching Procedure
Exceeds Hazardous Classification

Table 5
2019 Groundwater Sampling Results, Bird Property Wells

Remedial Action Work Plan, Area #3
Brenntag Charleston

Sample ID: Distance from Brenntag Property (ft):	USEPA MCL	MW-17 12	MW-18 95	MW-11 100	MW-19 120	MW-16 300
Volatile Organic Compounds [1,2] (µg/L)						
Benzene	**5**	<40	<40	<25	**7**	<1
Chlorobenzene	**100**	<40	<40	<25	**10.1**	<1
cis-1,2-Dichloroethene	**70**	**4,950**	**6,080**	**2,740**	**386**	<1
o-Dichlorobenzene	**600**	<40	<40	<25	**74.2**	<1
p-Dichlorobenzene	**75**	<40	<40	<25	**4.0**	<1
Trichloroethene	**5**	**4,960**	<40	<25	<2.5	<1
Vinyl Chloride	**2**	**74.9**	**1,170**	**89.9**	**341**	<1
Total Xylenes	**1,000**	<40	<40	<25	<2.5	<1
Total Chlorinated Ethenes [3] (µg/L)						
Total Chlorinated Ethenes	NE	**9,985**	**7,250**	**2,830**	**727**	ND

Notes

1. Only compounds detected in at least one sample are shown
2. Samples collected in January 2019 (IPGX, Inc. 2019)
3. Total chlorinated ethenes includes tetrachloroethene, trichloroethene, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride

µg/L = micrograms per liter
ft bgs = feet below ground surface
J = constituent concentration was qualified as estimated
ND = not detected
NE = none established
MCL = Maximum Contaminant Level
USEPA = United States Environmental Protection Agency

Exceeds USEPA MCL

Table 6
Indoor Air Sampling Results

Remedial Action Work Plan, Area #3
Brenntag Charleston

Sample ID: / Date Sampled:	USEPA Industrial RSL [1]	V1 06/22/21	V2 06/22/21	V3 06/22/21
Volatile Organic Compounds (µg/m^3)				
Benzene	**1.6**	<0.64	<0.64	<0.64
Ethylbenzene	**4.9**	<0.87	<0.87	<0.87
Toluene	**22,000**	**2.1**	**2.0**	**3.1**
Trichloroethene	**3**	**0.86**	**0.75**	**0.81**
1,1-Dichloroethene	**880**	<0.79	<0.79	<0.79
cis-1,2-Dichloroethene	NE	<0.79	<0.79	<0.79
trans-1,2-Dichloroethene	**180**	<0.79	<0.79	<0.79
m-Dichlorobenzene	**NE**	<1.2	<1.2	<1.2
o-Dichlorobenzene	**880**	<1.2	<1.2	<1.2
p-Dichlorobenzene	**1.1**	<1.2	<1.2	<1.2
Tetrachloroethene	**47**	**6.0**	<0.27	<0.27
m,p-Xylenes	**440**	**2.0**	**2.0**	**2.7**
o-Xylenes	**440**	**0.96**	**0.96**	**1.2**
Vinyl Chloride	**2.8**	<0.51	<0.51	<0.51

Notes

1. United States Environmental Protection Agency Industrial Regional Screening Level for Indoor Air, Target Risk 1 x 10^{-6}, HQ = 1.0

µg/m^3 = micrograms per cubic meter

NE = none established

Table 7
Monitoring Well Construction Details

Remedial Action Work Plan, Area #3
Brenntag Charleston

Well ID	Total Depth (ft bgs)	Well Screen (ft bgs)	Diameter (inches)	Well Construction Materials
Existing Monitoring Wells				
MW-2R	20 (approx.)	Unknown	2	PVC riser and PVC screen
Proposed Monitoring Wells				
MW-22	20	10 - 20	2	PVC riser and stainless steel screen
MW-23	20	10 - 20	2	PVC riser and stainless steel screen
MW-24	20	10 - 20	2	PVC riser and stainless steel screen
MW-25	20	10 - 20	2	PVC riser and stainless steel screen
MW-26	20	10 - 20	2	PVC riser and PVC screen
MW-27	20	10 - 20	2	PVC riser and PVC screen
MW-28	20	10 - 20	2	PVC riser and PVC screen

Notes

All well construction details, including proposed depth, location, screened interval, construction materials, and total number of wells are preliminary and may be adjusted based on field conditions

ft bgs = feet below ground surface

PVC = polyvinyl chlordie

Table 8
Proposed Baseline Monitoring Program

Remedial Action Work Plan, Area #3
Brenntag Charleston

Well ID	Volatile Organic Compounds USEPA 8260	Total Organic Carbon USEPA Method 9060A	Dissolved Iron USEPA Method 6010	Nitrate and Sulfate USEPA Method 375.4	Sulfide Standard Method 4500-S2	Methane, ethane, ethene, and acetylene RSK-175
MW-2R	X	X	X	X	X	X
MW-22	X	X	X	X	X	X
MW-23	X	X	X	X	X	X
MW-24	X	X	X	X	X	X
MW-25	X	X	X	X	X	X
MW-26	X	X	X	X	X	X
MW-27	X	X	X	X	X	X
MW-28	X	X	X	X	X	X

Notes

USEPA = United States Environmental Protection Agency

Table 9
Proposed Phase 3 ISCR Injection Details

Remedial Action Work Plan, Area #3
Brenntag Charleston

DPT Injection Point[1]	Injection Depth (ft bgs)					
	8-10	10-12	12-14	14-16	16-18	18-20
INJ-1		X		X		X
INJ-2	X		X		X	
INJ-3		X		X		X
INJ-4	X		X		X	
INJ-5		X		X		X
INJ-6	X		X		X	
INJ-7		X		X		X
INJ-8	X		X		X	
INJ-9		X		X		X
INJ-10	X		X		X	
INJ-11		X		X		X
INJ-12	X		X		X	
INJ-13		X		X		X
INJ-14	X		X		X	
INJ-15		X		X		X
INJ-16	X		X		X	
INJ-17		X		X		X
INJ-18	X		X		X	
INJ-19		X		X		X
INJ-20	X		X		X	
INJ-21		X		X		X
INJ-22	X		X		X	
INJ-23				X		X
INJ-24			X		X	
INJ-25				X		X
INJ-26			X		X	
INJ-27				X		X
INJ-28			X		X	

Notes

1. Phase 3 injection details are preliminary and may be adjusted based on results from previous phases of work

ft bgs = feet below ground surface

USEPA = United States Environmental Protection Agency

Table 10
Phase 3 ISCR Performance Monitoring Program

Remedial Action Work Plan, Area #3
Brenntag Charleston

Well ID	Sampling Frequency[1]	Volatile Organic Compounds USEPA 8260	Total Organic Carbon USEPA Method 9060A	Dissolved Iron USEPA Method 6010	Nitrate and Sulfate USEPA Method 375.4	Sulfide Standard Method 4500-S2	Methane, ethane, ethene, and acetylene RSK-175
MW-2R	Semi-Annual	X					
MW-22	Semi-Annual	X					
MW-23	Semi-Annual	X					
MW-24	Quarterly	X	X	X	X	X	X
MW-25	Quarterly	X	X	X	X	X	X
MW-26	Semi-Annual	X					
MW-27	Quarterly	X	X	X	X	X	X
MW-28	Quarterly	X	X	X	X	X	X

Notes

1. One-year after ISCR injections, all wells will revert to semi-annual sampling

USEPA = United States Environmental Protection Agency

Table 11
Proposed Remedial Implementation Schedule

Remedial Action Work Plan, Area #3
Brenntag Charleston

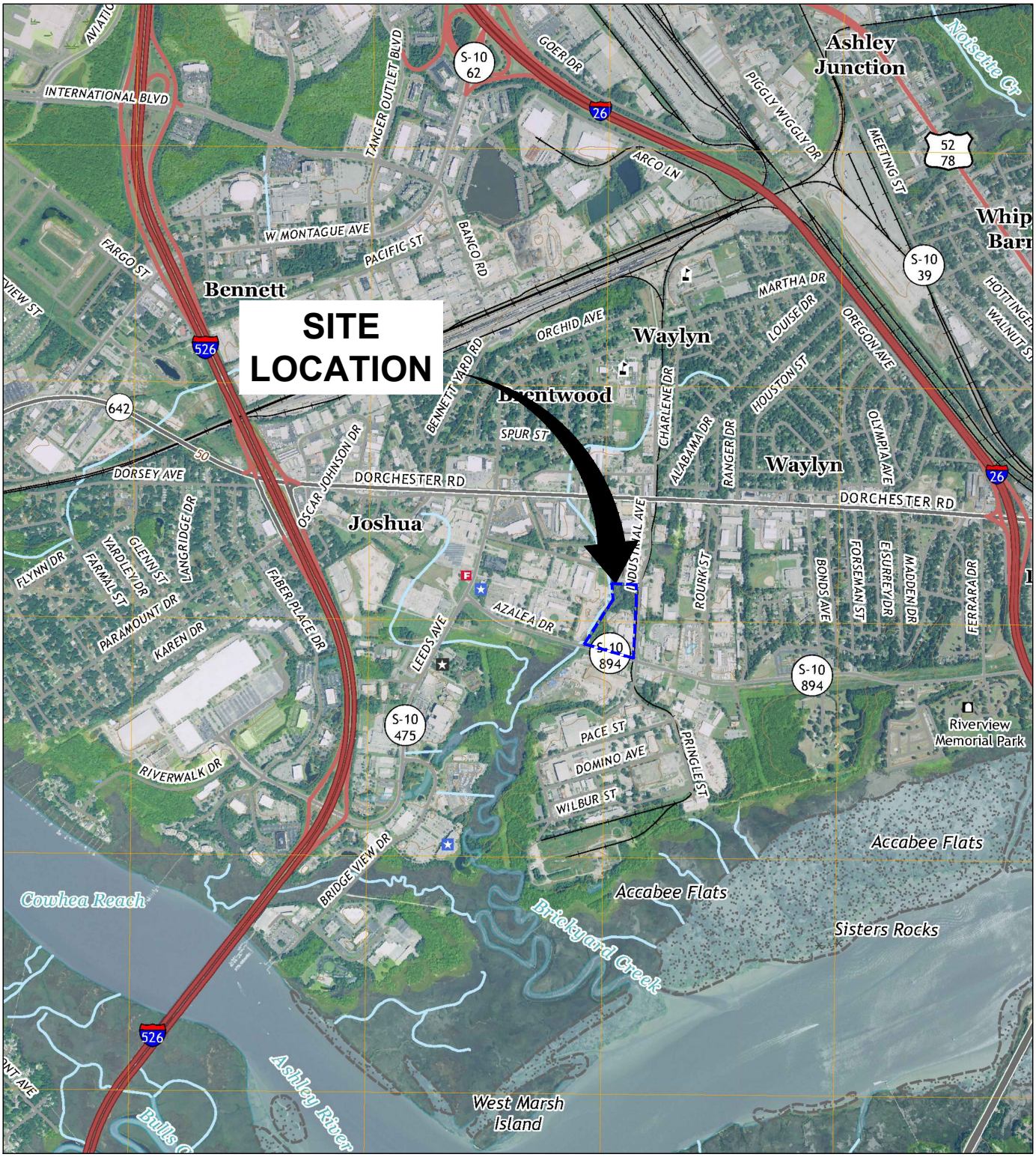
Anticipated Timeline	Activity
October 2022	• Submittal of RAWP
Fourth Quarter 2022 - First Quarter 2023	• SCDHEC review of RAWP • Revisions to RAWP based on SCDHEC comments • SCDHEC approval of revised RAWP • 30-day public comment period
2023	• Phase 1 well installation, baseline sampling, and data evaluation • Phase 2 Excavation • Phase 3 ISCR planning and injections
2024	• Phase 3 ISCR performance monitoring • Phase 4 AFVR event • Phase 5 ISCR planning
2025 and future	• Phase 5 ISCR injections and performance monitoring • Preparation and submittal of Construction Completion Report following Phase 5 ISCR injections • Continued semi-annual performance monitoring • Additional well installations and AFVR events, as needed • Additional source area and/or property boundary injections, as needed

Notes

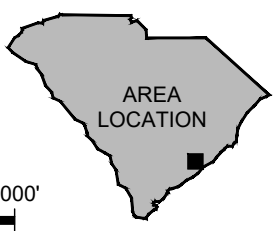
All remedial and monitoring activities will be documented in site-wide semi-annual monitoring reports

Anticipated timeline may be adjusted based on timing of and results from previous phases of work

Figures



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUADS., CHARLESTON AND JOHNS ISLAND, SOUTH CAROLINA 2018.



0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.

BRENNTAG SOUTHEAST
CHARLESTON, SOUTH CAROLINA
REMEDIAL ACTION WORK PLAN AREA #3

SITE LOCATION MAP

ARCADIS

FIGURE
1

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\wdbernd\g.ARCADIS-US\ACCDocs\Arcadis\AUS-BRENNTAG-SOUTHEAST-CHARLESTON South Carolina\Project Files\2022\01-In Progress\01-DWG\BrenntagSC Site Loc Map.dwg LAYOUT: 1 SAVED: 8/22/2022 5:46 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE:
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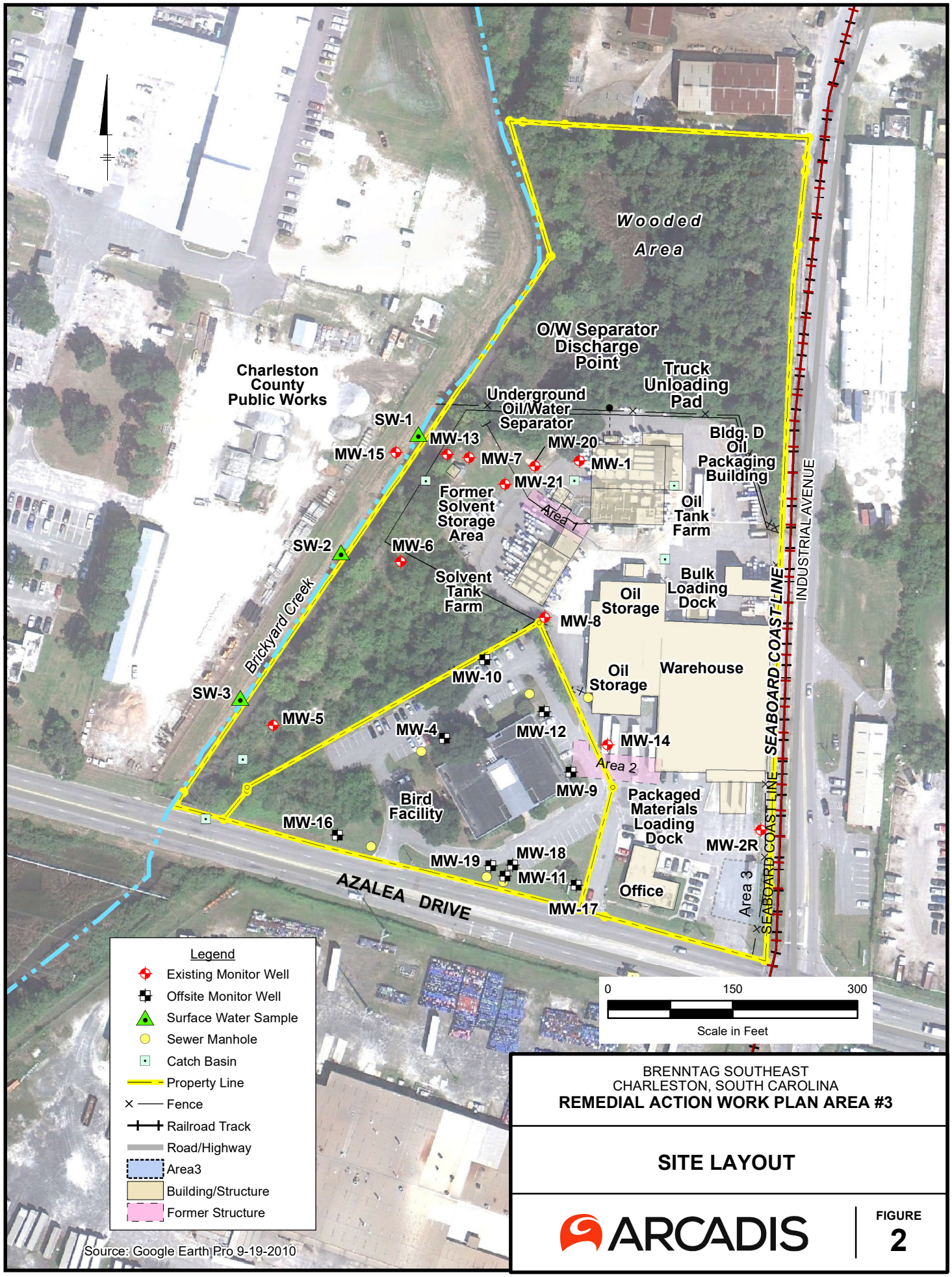
XREFS: PROJECTNAME: ----



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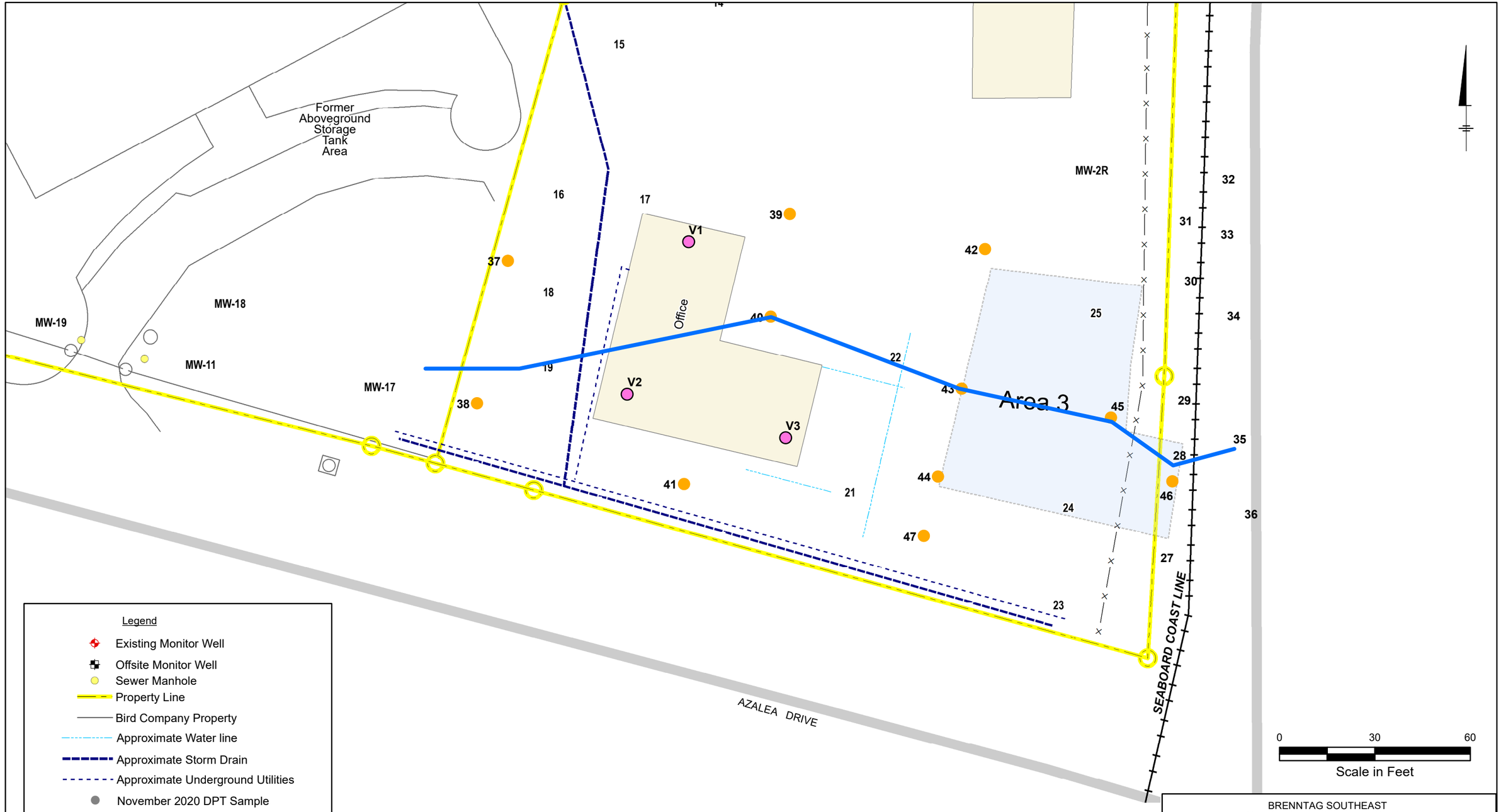
BRENNTAG SOUTHEAST
CHARLESTON, SOUTH CAROLINA

REMEDIAL ACTION WORK PLAN AREA #3

SITE LAYOUT

ARCADIS

FIGURE
2



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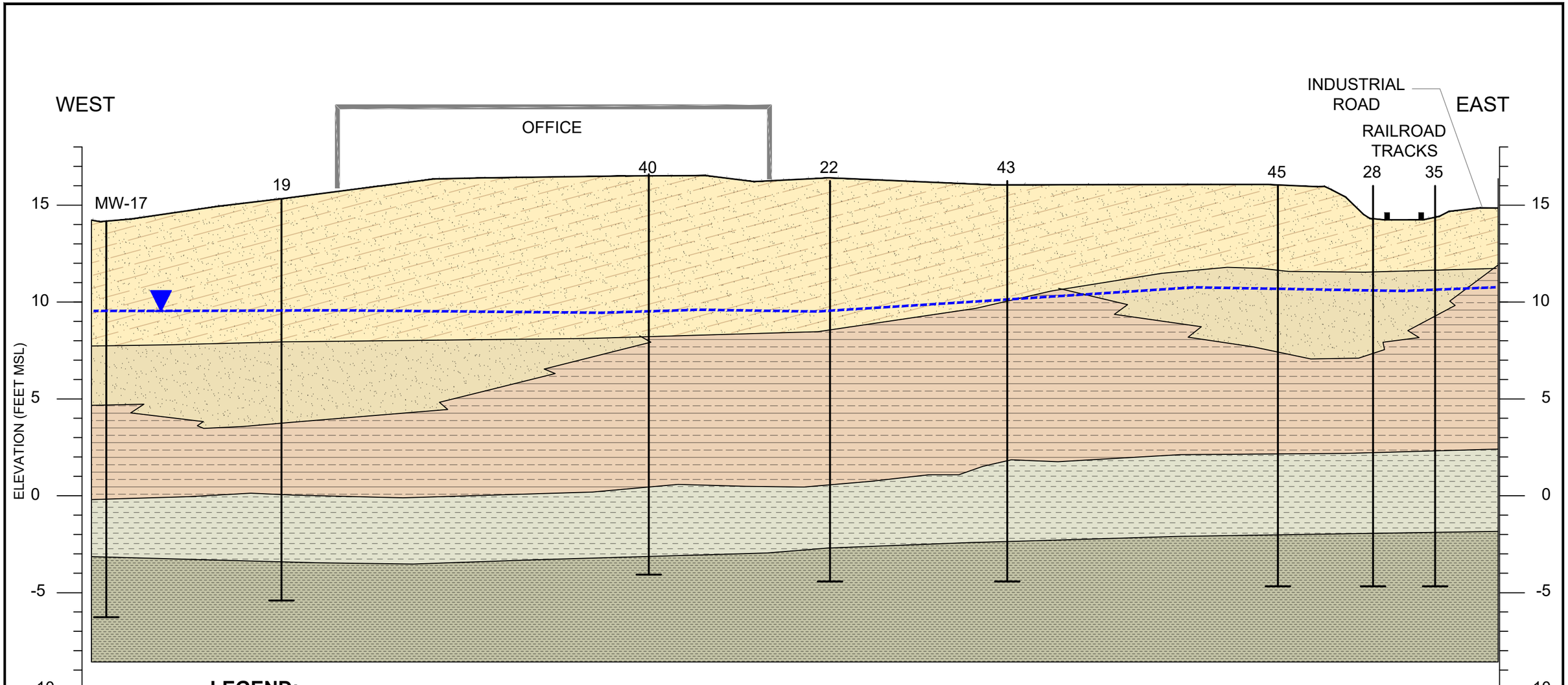
BRENNTAG SOUTHEAST
CHARLESTON, SOUTH CAROLINA

REMEDIAL ACTION WORK PLAN AREA #3

AREA #3 INVESTIGATION LAYOUT

ARCADIS

FIGURE
3



LEGEND:

MW-15 WELL/BORING ID

APPROXIMATE GROUND SURFACE

LITHOLOGIC CONTACT

WATER LEVEL

WELL SCREEN

WELL/BORING BOTTOM

SILTY SANDS

SILTY CLAYS/SANDS

SC STIFF GREEN CLAYS

STIFF GREEN CLAYS

TIGHT FINE GRAINED SANDS

APPROXIMATE WATER LEVEL

0 5’ 10’
APPROXIMATE VERTICAL SCALE

0 25’ 50’
APPROXIMATE HORIZONTAL SCALE

BRENNTAG SOUTHEAST
CHARLESTON, SOUTH CAROLINA
REMEDIAL ACTION WORK PLAN AREA #3

AREA #3 CROSS-SECTION

ARCADIS

FIGURE
4

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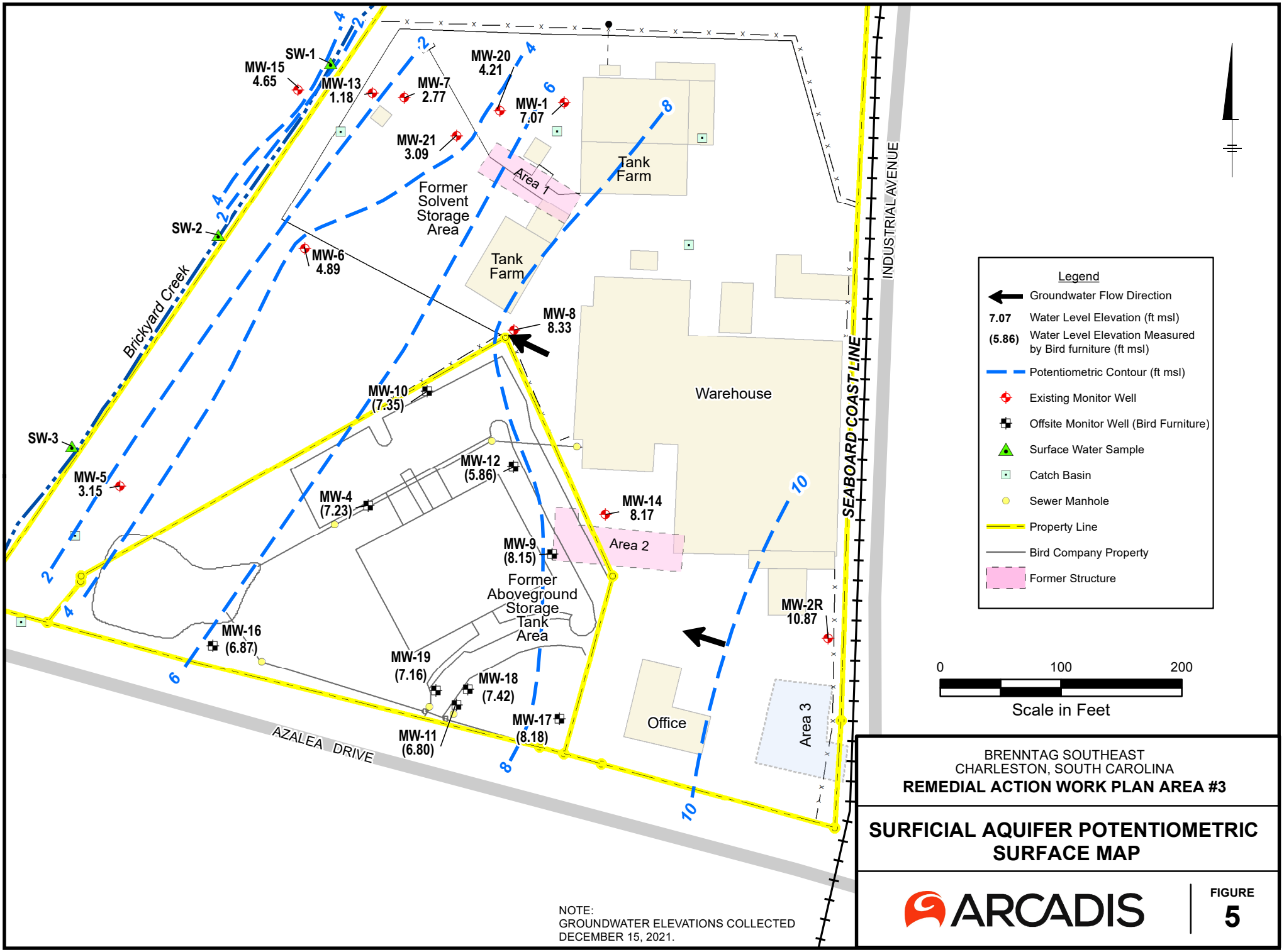


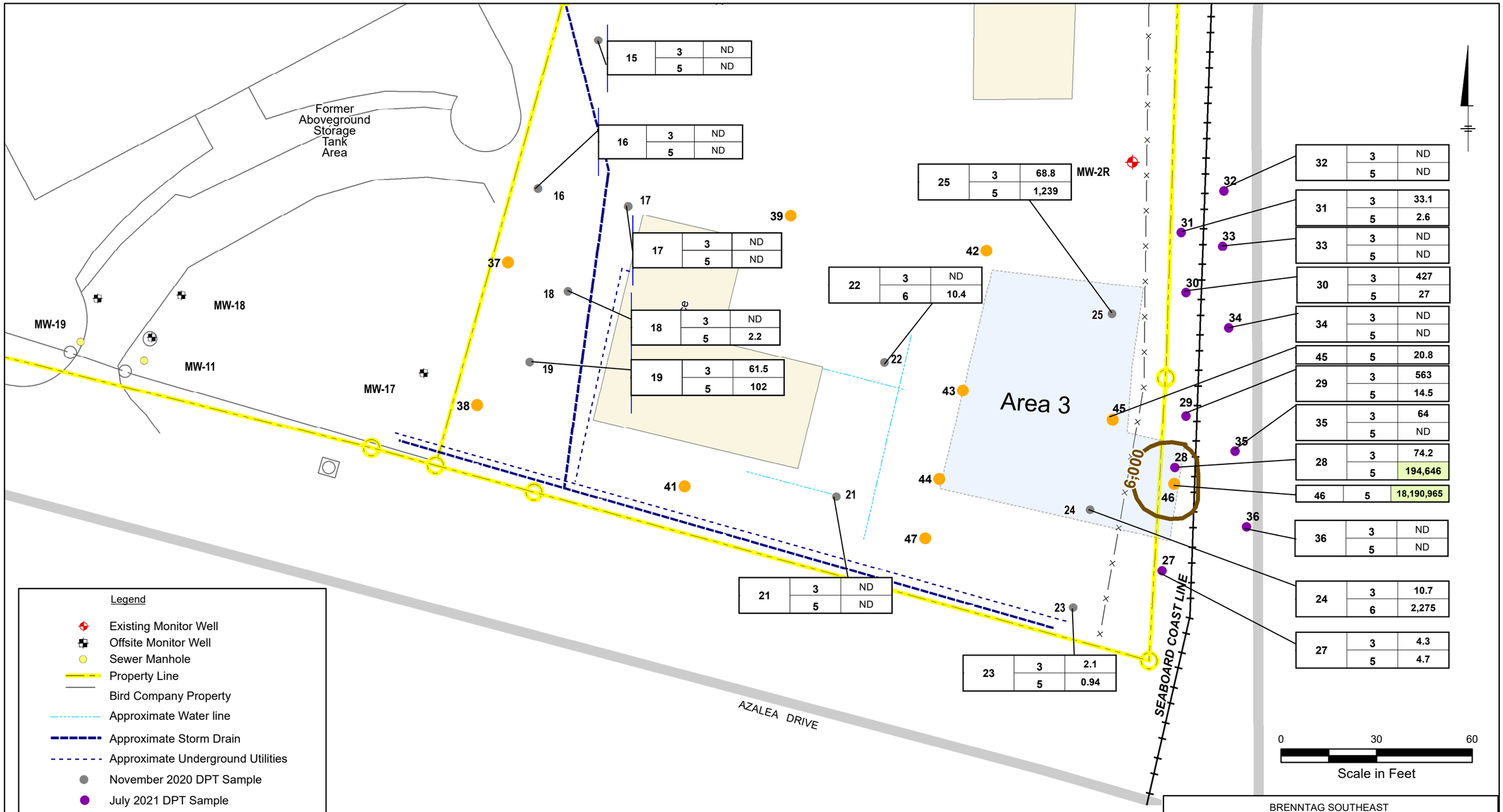
NOTE:
GROUNDWATER ELEVATIONS COLLECTED DECEMBER 15, 2021.

BRENNTAG SOUTHEAST
CHARLESTON, SOUTH CAROLINA
REMEDIAL ACTION WORK PLAN AREA #3

SURFICIAL AQUIFER POTENTIOMETRIC SURFACE MAP

ARCADIS

FIGURE
5



Legend

- Existing Monitor Well
- Offsite Monitor Well
- Sewer Manhole
- Property Line
- Bird Company Property
- Approximate Water line
- Approximate Storm Drain
- Approximate Underground Utilities
- November 2020 DPT Sample
- July 2021 DPT Sample
- April 2022 DPT Sample
- 6;000 TCE Isoconcentration Contour

NOTES:
1. Total chlorinated ethenes include PCE, TCE, 1,1-DCE, cis-1,2-DCE, 1,1-DCE, and VC
2. All values in micrograms per kilogram (ug/kg)
3. TCE was the only CVOC that exceeded USEPA Industrial RSLs.
4. TCE Industrial RSL = 6,000 ug/kg
5. ND = not detected

BRENNTAG SOUTHEAST
CHARLESTON, SOUTH CAROLINA

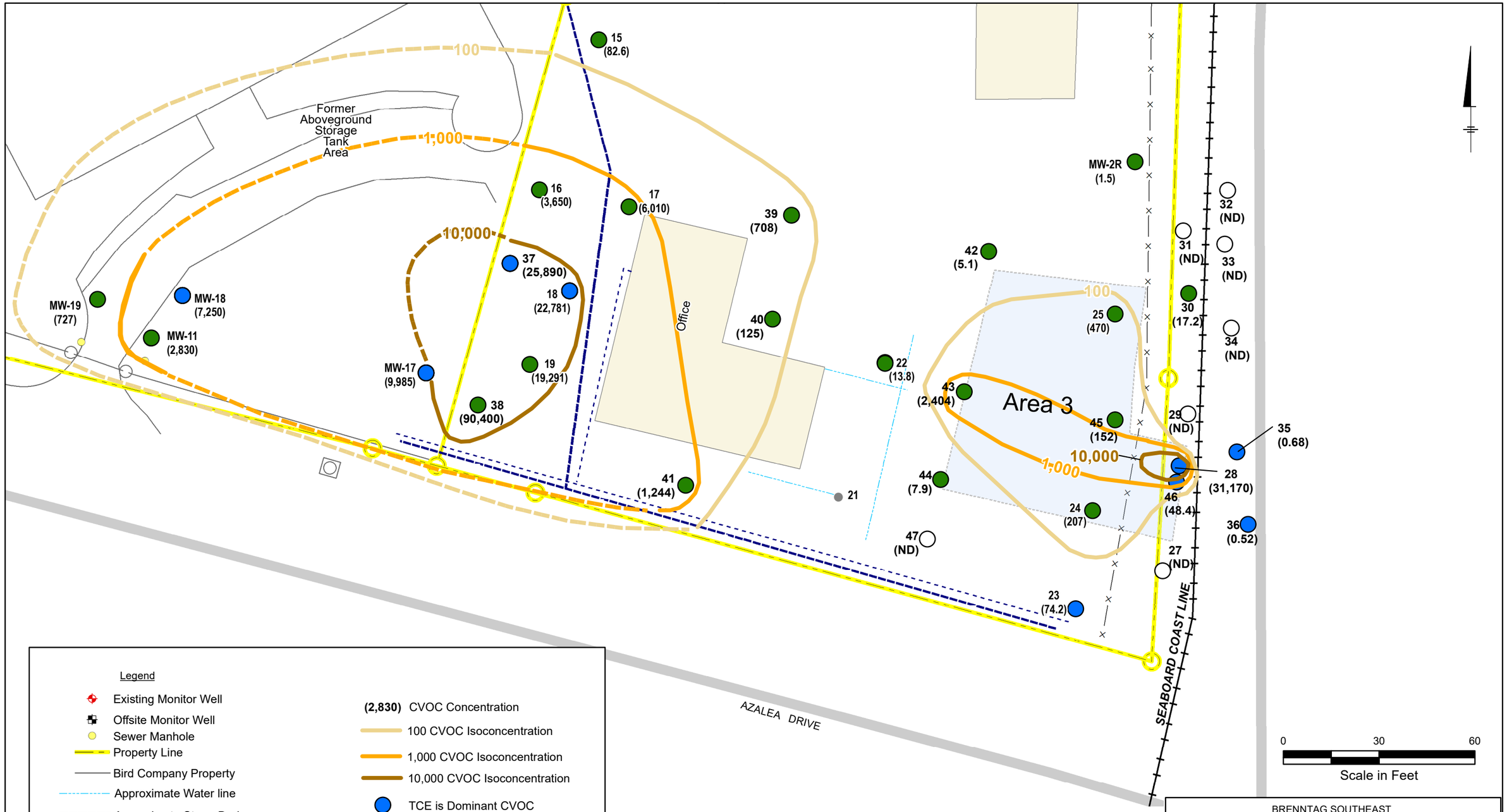
REMEDIAL ACTION WORK PLAN AREA #3

TOTAL CHLORINATED ETHENES IN UNSATURATED SOIL

ARCADIS

FIGURE **6**

CITY: AUGUSTA DIV/GROUP: ENV DB: A. Saul LD: A. Saul PIC: PM: TM: TR:
Project Number: Path: C:\BIM\OneDrive - ARCADIS\GIS\Brenntag\Brenntag Charleston SC GIS\2022\FIG 6 TCE Aug 2022.mxd Date Saved: 8/23/2022 4:39:56 PM



NOTES:
1. Groundwater data collected from 7-10 ft bgs
2. Total chlorinated ethenes include PCE, TCE, 1,1-DCE, cis-1,2-DCE, 1,1-DCE, and VC
3. All values in micrograms per liter (ug/L)
4. Samples from Bird property collected in January 2019. Sample from MW-2R collected in June 2022.
5. ND = not detected

BRENNTAG SOUTHEAST
CHARLESTON, SOUTH CAROLINA

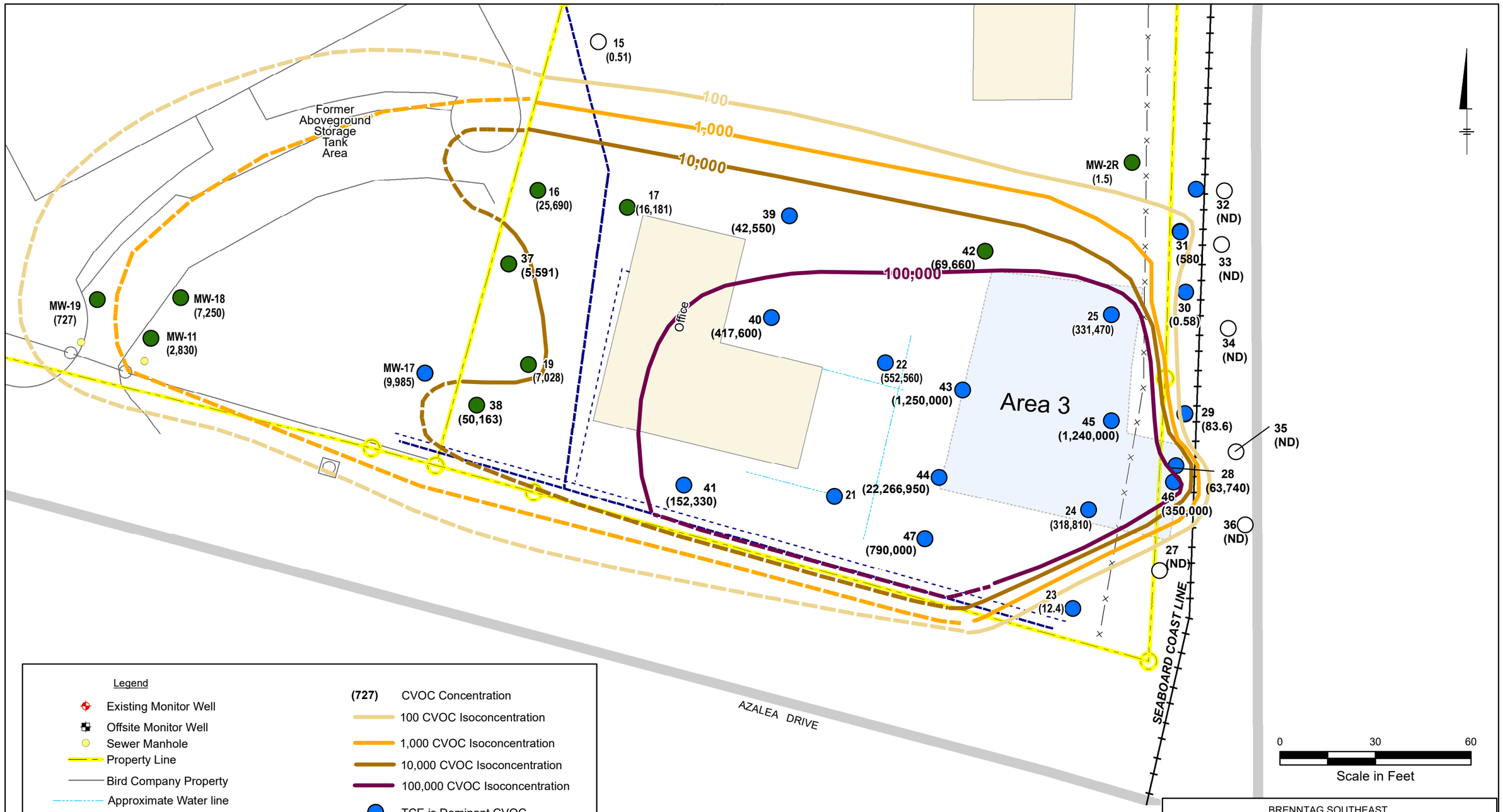
REMEDIAL ACTION WORK PLAN AREA #3

TOTAL CHLORINATED ETHENES IN SHALLOW SURFICIAL GROUNDWATER

ARCADIS

FIGURE 7

CITY: AUGUSTA DIV/GROUP: ENV DB: A. Saul LD: A. Saul PIC: PM: TM: TR:
Project Number: Path: C:\BIM\OneDrive - ARCADIS\GIS\Brenntag\Brenntag Charleston SC GIS\2022\FIG 7 TCE Shall Aug 2022.mxd Date Saved: 8/19/2022 10:37:39 PM



Legend

- Existing Monitor Well
- Offsite Monitor Well
- Sewer Manhole
- Property Line
- Bird Company Property
- Approximate Water line
- Approximate Storm Drain
- Approximate Underground Utilities

(727) CVOC Concentration

- 100 CVOC Isoconcentration
- 1,000 CVOC Isoconcentration
- 10,000 CVOC Isoconcentration
- 100,000 CVOC Isoconcentration
- TCE is Dominant CVOC
- cis-1,2-DCE is Dominant CVOC
- CVOCs Not Detected

NOTES:
1. Groundwater data collected from 7-10 ft bgs
2. Total chlorinated ethenes include PCE, TCE, 1,1-DCE, cis-1,2-DCE, 1,1-DCE, and VC
3. All values in micrograms per liter (µg/L)
4. Samples from Bird property collected in January 2019. Sample from MW-2R collected in June 2022.
5. ND = not detected

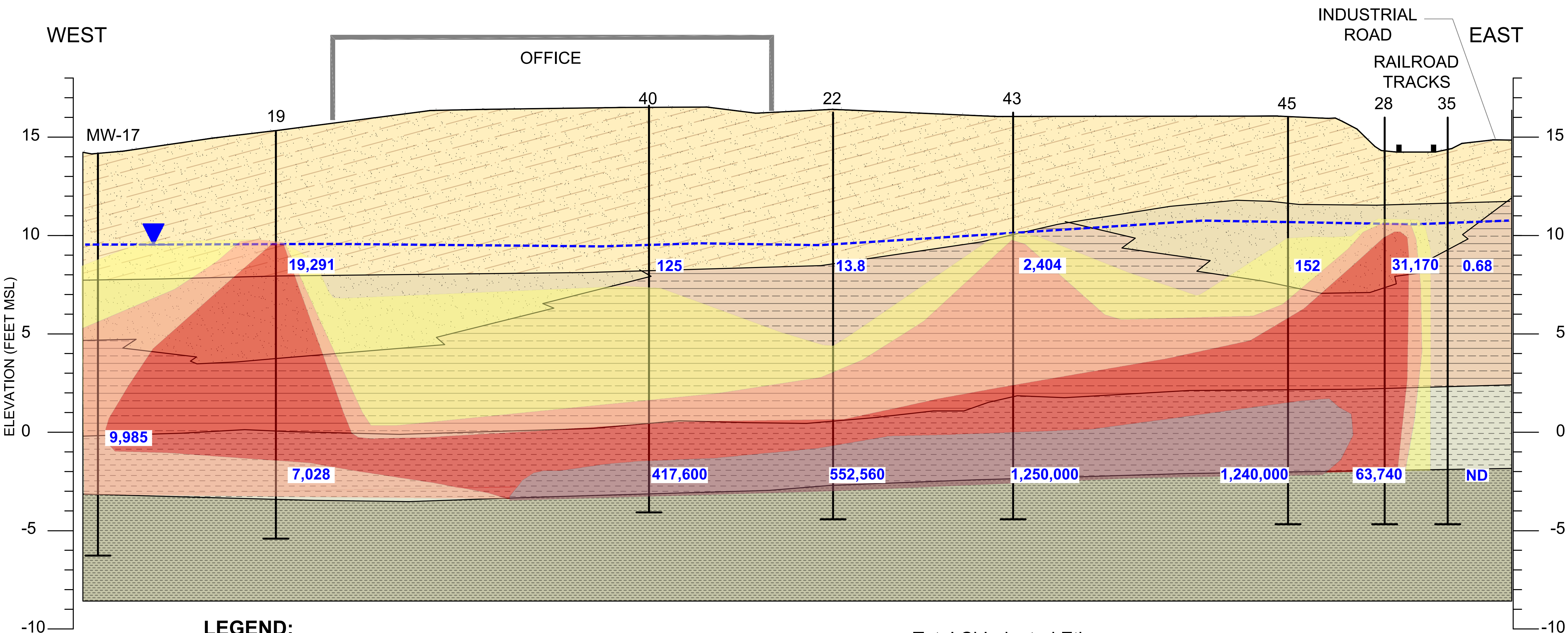
BRENNTAG SOUTHEAST
CHARLESTON, SOUTH CAROLINA

REMEDIAL ACTION WORK PLAN AREA #3

TOTAL CHLORINATED ETHENES IN DEEP SURFICIAL GROUNDWATER

ARCADIS

FIGURE 8



LEGEND:

MW-15	WELL/BORING ID
	APPROXIMATE GROUND SURFACE
	LITHOLOGIC CONTACT
	WATER LEVEL
	WELL SCREEN
	WELL/BORING BOTTOM
	SILTY SANDS
	SILTY CLAYS/SANDS
	SC STIFF GREEN CLAYS
	STIFF GREEN CLAYS
	TIGHT FINE GRAINED SANDS
	APPROXIMATE WATER LEVEL

Total Chlorinated Ethenes

- >100,000 µg/L
- >10,000 µg/L
- >1,000 µg/L
- >100 µg/L
- 19,291 CVOC CONCENTRATION

0 5' 10' APPROXIMATE VERTICAL SCALE

0 25' 50' APPROXIMATE HORIZONTAL SCALE

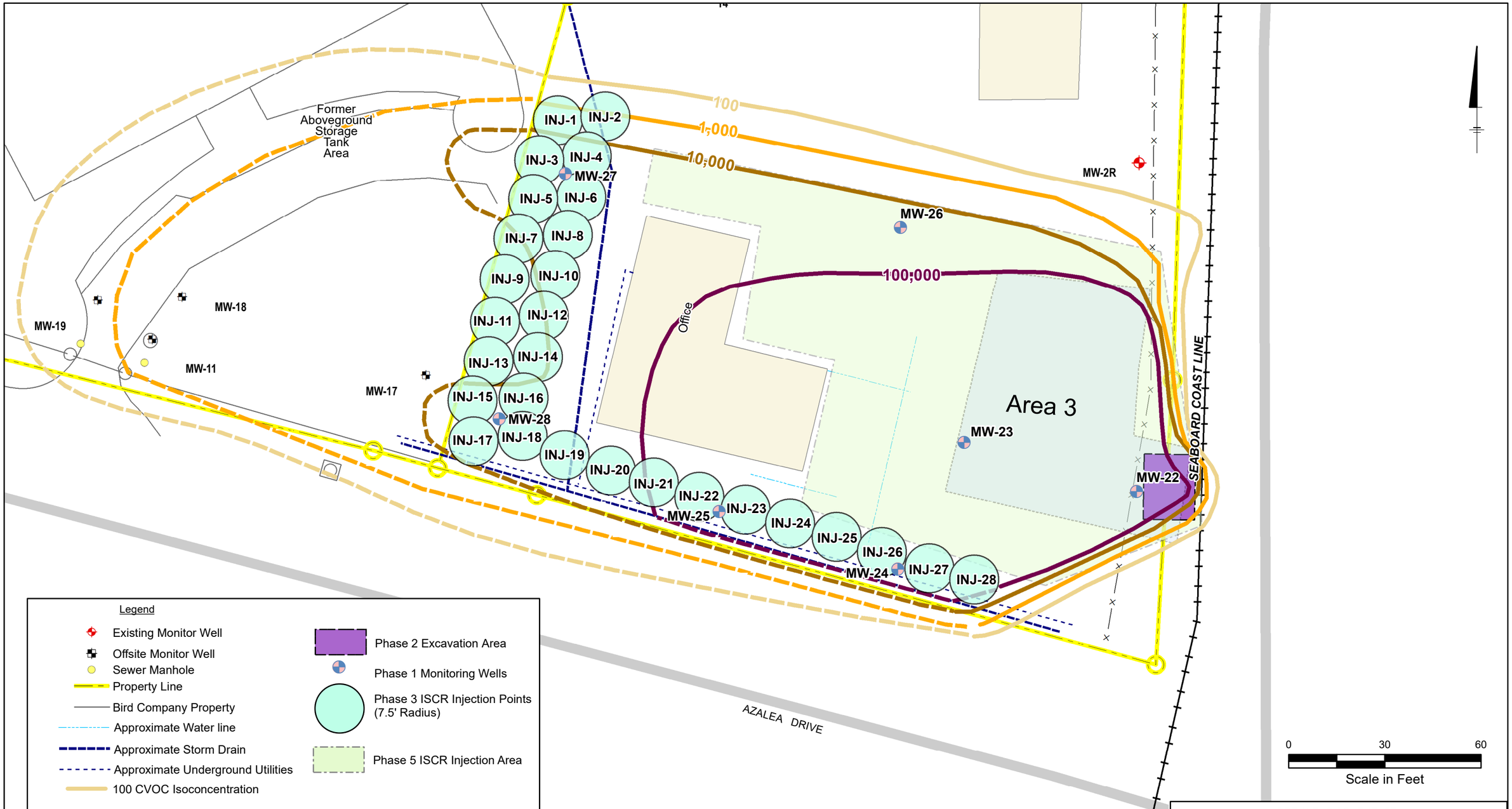
NOTES:
1. Total chlorinated ethenes include PCE, TCE, 1,1-DCE, cis-1,2-DCE, 1,1-DCE, and VC
2. All values in micrograms per liter (µg/L)
3. Samples from Bird property collected in January 2019.
4. ND = not detected

BRENNTAG SOUTHEAST
CHARLESTON, SOUTH CAROLINA
REMEDIAL ACTION WORK PLAN AREA #3

TOTAL CHLORINATED ETHENES ALONG PLUME CENTERLINE

ARCADIS

FIGURE 9



Legend

- Existing Monitor Well
- Offsite Monitor Well
- Sewer Manhole
- Property Line
- Bird Company Property
- Approximate Water line
- Approximate Storm Drain
- Approximate Underground Utilities
- 100 CVOC Isoconcentration
- 1,000 CVOC Isoconcentration
- 10,000 CVOC Isoconcentration
- 100,000 CVOC Isoconcentration
- Phase 2 Excavation Area
- Phase 1 Monitoring Wells
- Phase 3 ISCR Injection Points (7.5' Radius)
- Phase 5 ISCR Injection Area

NOTES:
1. Total chlorinated ethenes in deep surficial aquifer (15-20 ft bgs) are in micrograms per liter (ug/L)
2. Phase 1 monitoring well locations are preliminary and may be adjusted based on field conditions. Additional monitoring wells may be added during future phases of work.
3. Phase 2 excavation extent will be confirmed with sidewall samples.
4. Phase 3 injection locations may be adjusted based on Phase 2 sampling results.
5. Phase 4 AFVR will be conducted at one well, based on presence of DNAPL and/or highest chlorinated ethene concentrations.
6. Phase 5 ISCR injection details may be adjusted based on previous phases of work.

BRENNTAG SOUTHEAST
CHARLESTON, SOUTH CAROLINA

REMEDIAL ACTION WORK PLAN AREA #3

PROPOSED REMEDIAL LAYOUT

ARCADIS

FIGURE
10

CITY: AUGUSTA DIV/GROUP: ENV DB: A. Saul LD: A. Saul PIC: PM: TM: TR:
Project Number: Path: C:\BIM\OneDrive - ARCADIS\GIS\Brenntag\Brenntag Charleston SC GIS\2022\FIG 10 Rem layout Aug 2022.mxd Date Saved: 8/23/2022 5:01:03 PM

Appendix A

April 2022 Laboratory Analytical Reports

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

ARCADIS Geraghty & Miller

Brenntag; 4260 Azalea Dr, N Charleston, SC

SC000204.0011.00001

SGS Job Number: FA95287

Sampling Dates: 04/28/22 - 04/29/22

Report to:

ARCADIS Geraghty & Miller

jbeckner@arcadis-us.com

ATTN: Jeff Beckner

Total number of pages in report: 62

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Evita Martinez 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

Test results relate only to samples analyzed.

Sections: 1 2 3 4

Table of Contents

Sample Summary

ARCADIS Geraghty & Miller

Job No: FA95287

Brenntag; 4260 Azalea Dr, N Charleston, SC
Project No: SC000204.0011.00001

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies:							
Organics ND = Not detected above the MDL							
FA95287-1	04/28/22	12:22	BM	04/30/22	AQ	Ground Water	A3-40 (7-10)
FA95287-2	04/28/22	13:05	BM	04/30/22	AQ	Ground Water	A3-40 (17-20)
FA95287-3	04/28/22	14:02	BM	04/30/22	AQ	Ground Water	A3-39 (7-10)
FA95287-4	04/28/22	14:17	BM	04/30/22	AQ	Ground Water	A3-39 (17-20)
FA95287-5	04/28/22	15:05	BM	04/30/22	AQ	Ground Water	A3-37 (7-10)
FA95287-6	04/28/22	15:32	BM	04/30/22	AQ	Ground Water	A3-37 (15-18)
FA95287-7	04/28/22	16:32	BM	04/30/22	AQ	Ground Water	A3-38 (7-10)
FA95287-8	04/28/22	17:00	BM	04/30/22	AQ	Ground Water	A3-38 (12-15)
FA95287-9	04/28/22	17:45	BM	04/30/22	AQ	Ground Water	A3-44 (7-10)
FA95287-10	04/28/22	18:05	BM	04/30/22	AQ	Ground Water	A3-44 (15-18)
FA95287-11	04/28/22	18:45	BM	04/30/22	AQ	Ground Water	A3-41 (7-10)
FA95287-12	04/28/22	19:25	BM	04/30/22	AQ	Ground Water	A3-41 (17-20)

Sample Summary
(continued)

ARCADIS Geraghty & Miller

Job No: FA95287

Brenntag; 4260 Azalea Dr, N Charleston, SC
Project No: SC000204.0011.00001

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA95287-13	04/29/22	08:35	BM	04/30/22	AQ	Ground Water	A3-42 (7-10)
FA95287-14	04/29/22	09:13	BM	04/30/22	AQ	Ground Water	A3-42 (15-18)
FA95287-15	04/29/22	10:20	BM	04/30/22	AQ	Ground Water	A3-43 (7-10)
FA95287-16	04/29/22	10:30	BM	04/30/22	AQ	Ground Water	A3-43 (17-20)
FA95287-17	04/29/22	11:25	BM	04/30/22	AQ	Ground Water	A3-45 (7-10)
FA95287-18	04/29/22	11:55	BM	04/30/22	AQ	Ground Water	A3-45 (17-20)
FA95287-19	04/29/22	12:45	BM	04/30/22	AQ	Ground Water	A3-46 (7-10)
FA95287-20	04/29/22	13:12	BM	04/30/22	AQ	Ground Water	A3-46 (15-18)
FA95287-21	04/29/22	14:24	BM	04/30/22	AQ	Ground Water	A3-47 (7-10)
FA95287-22	04/29/22	14:45	BM	04/30/22	AQ	Ground Water	A3-47 (17-20)
FA95287-23	04/29/22	00:00	BM	04/30/22	AQ	Ground Water	A3-DUP01
FA95287-24	04/28/22	00:00	BM	04/30/22	AQ	Trip Blank Water	TB-01

Summary of Hits

Job Number: FA95287
Account: ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC
Collected: 04/28/22 thru 04/29/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
FA95287-1	**A3-40 (7-10)**					
cis-1,2-Dichloroethylene [a]		80.8	1.0	0.28	ug/l	SW846 8260D
Vinyl Chloride [a]		44.5	1.0	0.41	ug/l	SW846 8260D
FA95287-2	**A3-40 (17-20)**					
2-Butanone (MEK)		2590 J	5000	2000	ug/l	SW846 8260D
1,1-Dichloroethylene		607 J	1000	320	ug/l	SW846 8260D
cis-1,2-Dichloroethylene		33600	1000	280	ug/l	SW846 8260D
Trichloroethylene [b]		384000 E	1000	350	ug/l	SW846 8260D
FA95287-3	**A3-39 (7-10)**					
2-Butanone (MEK) [c]		121 J	250	100	ug/l	SW846 8260D
cis-1,2-Dichloroethylene		487	50	14	ug/l	SW846 8260D
Vinyl Chloride		221	50	20	ug/l	SW846 8260D
FA95287-4	**A3-39 (17-20)**					
2-Butanone (MEK) [d]		2830 J	5000	2000	ug/l	SW846 8260D
cis-1,2-Dichloroethylene [e]		9150	1000	280	ug/l	SW846 8260D
Trichloroethylene [e]		33400	1000	350	ug/l	SW846 8260D
FA95287-5	**A3-37 (7-10)**					
2-Butanone (MEK) [c]		1460 J	2500	1000	ug/l	SW846 8260D
cis-1,2-Dichloroethylene		7290	500	140	ug/l	SW846 8260D
Trichloroethylene		18600	500	170	ug/l	SW846 8260D
FA95287-6	**A3-37 (15-18)**					
2-Butanone (MEK) [f]		767 J	1300	500	ug/l	SW846 8260D
cis-1,2-Dichloroethylene [g]		5190	250	69	ug/l	SW846 8260D
Trichloroethylene [g]		401	250	86	ug/l	SW846 8260D
FA95287-7	**A3-38 (7-10)**					
2-Butanone (MEK)		3020 J	5000	2000	ug/l	SW846 8260D
cis-1,2-Dichloroethylene		49300	1000	280	ug/l	SW846 8260D
Trichloroethylene		41100	1000	350	ug/l	SW846 8260D
FA95287-8	**A3-38 (12-15)**					
2-Butanone (MEK)		1320 J	2500	1000	ug/l	SW846 8260D

Summary of Hits

Job Number: FA95287
Account: ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC
Collected: 04/28/22 thru 04/29/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
cis-1,2-Dichloroethylene		40500	500	140	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		373 J	500	110	ug/l	SW846 8260D
Trichloroethylene		9290	500	170	ug/l	SW846 8260D
FA95287-9	**A3-44 (7-10)**					
cis-1,2-Dichloroethylene		5.3	2.0	0.55	ug/l	SW846 8260D
Trichloroethylene [c]		2.6	2.0	0.69	ug/l	SW846 8260D
FA95287-10	**A3-44 (15-18)**					
1,1-Dichloroethylene [h]		1450	1000	320	ug/l	SW846 8260D
cis-1,2-Dichloroethylene [i]		28800	10000	2800	ug/l	SW846 8260D
Tetrachloroethylene [i]		36700	10000	2200	ug/l	SW846 8260D
Trichloroethylene [j]		22200000 E	10000	3500	ug/l	SW846 8260D
FA95287-11	**A3-41 (7-10)**					
2-Butanone (MEK) [c]		609 J	1000	400	ug/l	SW846 8260D
cis-1,2-Dichloroethylene		693	200	55	ug/l	SW846 8260D
Trichloroethylene [k]		551	200	69	ug/l	SW846 8260D
FA95287-12	**A3-41 (17-20)**					
2-Butanone (MEK) [e]		2980 J	5000	2000	ug/l	SW846 8260D
1,1-Dichloroethylene [e]		430 J	1000	320	ug/l	SW846 8260D
cis-1,2-Dichloroethylene [e]		18900	1000	280	ug/l	SW846 8260D
Trichloroethylene [l]		133000	2000	690	ug/l	SW846 8260D
FA95287-13	**A3-42 (7-10)**					
2-Butanone (MEK) [m]		11.2	10	4.0	ug/l	SW846 8260D
cis-1,2-Dichloroethylene [n]		5.1	2.0	0.55	ug/l	SW846 8260D
FA95287-14	**A3-42 (15-18)**					
cis-1,2-Dichloroethylene [l]		50700	1000	280	ug/l	SW846 8260D
Trichloroethylene [l]		18100	1000	350	ug/l	SW846 8260D
Vinyl Chloride [l]		860 J	1000	410	ug/l	SW846 8260D
FA95287-15	**A3-43 (7-10)**					
cis-1,2-Dichloroethylene [l]		2000	50	14	ug/l	SW846 8260D
Vinyl Chloride [l]		404	50	20	ug/l	SW846 8260D

Summary of Hits

Job Number: FA95287
Account: ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC
Collected: 04/28/22 thru 04/29/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
FA95287-16	**A3-43 (17-20)**					
Trichloroethylene [1]		1250000	50000	17000	ug/l	SW846 8260D
FA95287-17	**A3-45 (7-10)**					
cis-1,2-Dichloroethylene [1]		91.3	2.0	0.55	ug/l	SW846 8260D
Trichloroethylene [1]		51.3	2.0	0.69	ug/l	SW846 8260D
Vinyl Chloride [1]		9.6	2.0	0.82	ug/l	SW846 8260D
FA95287-18	**A3-45 (17-20)**					
Trichloroethylene [1]		1240000	25000	8600	ug/l	SW846 8260D
FA95287-19	**A3-46 (7-10)**					
Trichloroethylene [1]		48.4	1.0	0.35	ug/l	SW846 8260D
FA95287-20	**A3-46 (15-18)**					
Trichloroethylene [1]		350000	10000	3500	ug/l	SW846 8260D
FA95287-21	**A3-47 (7-10)**					
No hits reported in this sample.						
FA95287-22	**A3-47 (17-20)**					
Trichloroethylene [1]		790000	20000	6900	ug/l	SW846 8260D
FA95287-23	**A3-DUP01**					
cis-1,2-Dichloroethylene [1]		2070	50	14	ug/l	SW846 8260D
Vinyl Chloride [1]		438	50	20	ug/l	SW846 8260D
FA95287-24	**TB-01**					
No hits reported in this sample.						

(a) Sample was treated with an anti-foaming agent.
(b) Confirmed by re-analysis beyond hold time.
(c) Confirmed ND by re-analysis beyond hold time.
(d) Sample vial(s) contained bubbles greater than 6mm. Confirmed ND by re-analysis beyond hold time.
(e) Sample vial(s) contained bubbles greater than 6mm.
(f) Results from different vials are not consistent. No sample available for re-analysis. Confirmed ND by re-

Summary of Hits

Job Number: FA95287
Account: ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC
Collected: 04/28/22 thru 04/29/22

Lab Sample ID	Client Sample ID	Result/				
Analyte		Qual	RL	MDL	Units	Method

analysis beyond hold time.
(g) Results from different vials are not consistent. No sample available for re-analysis.
(h) Results from different vials are not consistent; higher results were reported.
(i) Sample re-analyzed beyond hold time. Results from different vials are not consistent; higher results were reported.
(j) Sample re-analyzed beyond hold time. Results from different vials are not consistent; higher results were reported. No sample available for re-analysis.
(k) Suspected carry-over. Confirmed by re-analysis beyond hold time.
(l) Sample re-analyzed beyond hold time.
(m) Dilution required due to high silt content in the sample. Vials combined due to high silt. Sample was not preserved to a pH < 2. Suspected instrument contaminant.
(n) Dilution required due to high silt content in the sample. Vials combined due to high silt. Sample was not preserved to a pH < 2.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	A3-40 (7-10)		
Lab Sample ID:	FA95287-1	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	5E32097.D	1	05/12/22 12:27	CF	n/a	n/a	V5E1471
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane [b]	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane [c]	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	80.8	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	5.0	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-40 (7-10)		
Lab Sample ID:	FA95287-1	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane [c]	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	44.5	1.0	0.41	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.72	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	107%		79-125%
2037-26-5	Toluene-D8	98%		85-112%
460-00-4	4-Bromofluorobenzene	96%		83-118%

(a) Sample was treated with an anti-foaming agent.
(b) Associated Initial Calibration invalid.
(c) Associated ICV outside control limits high, however sample ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-40 (17-20)		
Lab Sample ID:	FA95287-2	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E32098.D	1000	05/12/22 12:50	CF	n/a	n/a	V5E1471
Run #2 [a]	I747996.D	5000	05/14/22 03:47	AK	n/a	n/a	VI2560

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25000	10000	ug/l	
71-43-2	Benzene	ND	1000	310	ug/l	
75-27-4	Bromodichloromethane	ND	1000	240	ug/l	
75-25-2	Bromoform	ND	1000	410	ug/l	
78-93-3	2-Butanone (MEK)	2590	5000	2000	ug/l	J
75-15-0	Carbon Disulfide	ND	2000	530	ug/l	
56-23-5	Carbon Tetrachloride	ND	1000	360	ug/l	
108-90-7	Chlorobenzene	ND	1000	200	ug/l	
75-00-3	Chloroethane [b]	ND	2000	670	ug/l	
67-66-3	Chloroform	ND	1000	300	ug/l	
110-82-7	Cyclohexane [c]	ND	1000	390	ug/l	
124-48-1	Dibromochloromethane	ND	1000	280	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5000	1000	ug/l	
106-93-4	1,2-Dibromoethane	ND	2000	280	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2000	500	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1000	320	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1000	220	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1000	260	ug/l	
75-34-3	1,1-Dichloroethane	ND	1000	340	ug/l	
107-06-2	1,2-Dichloroethane	ND	1000	310	ug/l	
75-35-4	1,1-Dichloroethylene	607	1000	320	ug/l	J
156-59-2	cis-1,2-Dichloroethylene	33600	1000	280	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1000	220	ug/l	
78-87-5	1,2-Dichloropropane	ND	1000	430	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1000	290	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1000	210	ug/l	
100-41-4	Ethylbenzene	ND	1000	360	ug/l	
76-13-1	Freon 113	ND	1000	480	ug/l	
591-78-6	2-Hexanone	ND	10000	2000	ug/l	
98-82-8	Isopropylbenzene	ND	1000	220	ug/l	
79-20-9	Methyl Acetate	ND	20000	5000	ug/l	
74-83-9	Methyl Bromide	ND	5000	2000	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-40 (17-20)		
Lab Sample ID:	FA95287-2	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	2000	500	ug/l	
108-87-2	Methylcyclohexane [c]	ND	1000	440	ug/l	
75-09-2	Methylene Chloride	ND	5000	2000	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5000	1000	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1000	230	ug/l	
100-42-5	Styrene	ND	1000	220	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1000	300	ug/l	
127-18-4	Tetrachloroethylene	ND	1000	220	ug/l	
108-88-3	Toluene	ND	1000	300	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2000	500	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1000	250	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1000	470	ug/l	
79-01-6	Trichloroethylene [d]	384000	1000	350	ug/l	E
75-69-4	Trichlorofluoromethane	ND	2000	500	ug/l	
75-01-4	Vinyl Chloride	ND	1000	410	ug/l	
1330-20-7	Xylene (total)	ND	3000	720	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	97%	83-118%
17060-07-0	1,2-Dichloroethane-D4	107%	97%	79-125%
2037-26-5	Toluene-D8	97%	100%	85-112%
460-00-4	4-Bromofluorobenzene	97%	99%	83-118%

(a) Confirmation run beyond holdtime.
(b) Associated Initial Calibration invalid.
(c) Associated ICV outside control limits high, however sample ND.
(d) Confirmed by re-analysis beyond hold time.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-39 (7-10)		
Lab Sample ID:	FA95287-3	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E32099.D	50	05/12/22 13:13	CF	n/a	n/a	V5E1471
Run #2 [a]	I747997.D	10	05/14/22 04:11	AK	n/a	n/a	VI2560

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	1300	500	ug/l	
71-43-2	Benzene	ND	50	16	ug/l	
75-27-4	Bromodichloromethane	ND	50	12	ug/l	
75-25-2	Bromoform	ND	50	20	ug/l	
78-93-3	2-Butanone (MEK) [b]	121	250	100	ug/l	J
75-15-0	Carbon Disulfide	ND	100	27	ug/l	
56-23-5	Carbon Tetrachloride	ND	50	18	ug/l	
108-90-7	Chlorobenzene	ND	50	10	ug/l	
75-00-3	Chloroethane [c]	ND	100	33	ug/l	
67-66-3	Chloroform	ND	50	15	ug/l	
110-82-7	Cyclohexane [d]	ND	50	20	ug/l	
124-48-1	Dibromochloromethane	ND	50	14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	52	ug/l	
106-93-4	1,2-Dibromoethane	ND	100	14	ug/l	
75-71-8	Dichlorodifluoromethane	ND	100	25	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	50	16	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	50	11	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	50	13	ug/l	
75-34-3	1,1-Dichloroethane	ND	50	17	ug/l	
107-06-2	1,2-Dichloroethane	ND	50	16	ug/l	
75-35-4	1,1-Dichloroethylene	ND	50	16	ug/l	
156-59-2	cis-1,2-Dichloroethylene	487	50	14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	50	11	ug/l	
78-87-5	1,2-Dichloropropane	ND	50	21	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	50	15	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	50	11	ug/l	
100-41-4	Ethylbenzene	ND	50	18	ug/l	
76-13-1	Freon 113	ND	50	24	ug/l	
591-78-6	2-Hexanone	ND	500	100	ug/l	
98-82-8	Isopropylbenzene	ND	50	11	ug/l	
79-20-9	Methyl Acetate	ND	1000	250	ug/l	
74-83-9	Methyl Bromide	ND	250	100	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-39 (7-10)		
Lab Sample ID:	FA95287-3	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	100	25	ug/l	
108-87-2	Methylcyclohexane [d]	ND	50	22	ug/l	
75-09-2	Methylene Chloride	ND	250	100	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	250	50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	50	11	ug/l	
100-42-5	Styrene	ND	50	11	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	15	ug/l	
127-18-4	Tetrachloroethylene	ND	50	11	ug/l	
108-88-3	Toluene	ND	50	15	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	100	25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	50	12	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	50	23	ug/l	
79-01-6	Trichloroethylene	ND	50	17	ug/l	
75-69-4	Trichlorofluoromethane	ND	100	25	ug/l	
75-01-4	Vinyl Chloride	221	50	20	ug/l	
1330-20-7	Xylene (total)	ND	150	36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	102%	102%	79-125%
2037-26-5	Toluene-D8	98%	98%	85-112%
460-00-4	4-Bromofluorobenzene	98%	96%	83-118%

(a) Confirmation run beyond holdtime.
(b) Confirmed ND by re-analysis beyond hold time.
(c) Associated Initial Calibration invalid.
(d) Associated ICV outside control limits high, however sample ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-39 (17-20)		
Lab Sample ID:	FA95287-4	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	5E32100.D	1000	05/12/22 13:36	CF	n/a	n/a	V5E1471
Run #2 [b]	I747998.D	500	05/14/22 04:34	AK	n/a	n/a	VI2560

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25000	10000	ug/l	
71-43-2	Benzene	ND	1000	310	ug/l	
75-27-4	Bromodichloromethane	ND	1000	240	ug/l	
75-25-2	Bromoform	ND	1000	410	ug/l	
78-93-3	2-Butanone (MEK) [c]	2830	5000	2000	ug/l	J
75-15-0	Carbon Disulfide	ND	2000	530	ug/l	
56-23-5	Carbon Tetrachloride	ND	1000	360	ug/l	
108-90-7	Chlorobenzene	ND	1000	200	ug/l	
75-00-3	Chloroethane [d]	ND	2000	670	ug/l	
67-66-3	Chloroform	ND	1000	300	ug/l	
110-82-7	Cyclohexane [e]	ND	1000	390	ug/l	
124-48-1	Dibromochloromethane	ND	1000	280	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5000	1000	ug/l	
106-93-4	1,2-Dibromoethane	ND	2000	280	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2000	500	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1000	320	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1000	220	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1000	260	ug/l	
75-34-3	1,1-Dichloroethane	ND	1000	340	ug/l	
107-06-2	1,2-Dichloroethane	ND	1000	310	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1000	320	ug/l	
156-59-2	cis-1,2-Dichloroethylene	9150	1000	280	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1000	220	ug/l	
78-87-5	1,2-Dichloropropane	ND	1000	430	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1000	290	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1000	210	ug/l	
100-41-4	Ethylbenzene	ND	1000	360	ug/l	
76-13-1	Freon 113	ND	1000	480	ug/l	
591-78-6	2-Hexanone	ND	10000	2000	ug/l	
98-82-8	Isopropylbenzene	ND	1000	220	ug/l	
79-20-9	Methyl Acetate	ND	20000	5000	ug/l	
74-83-9	Methyl Bromide	ND	5000	2000	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-39 (17-20)		
Lab Sample ID:	FA95287-4	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	2000	500	ug/l	
108-87-2	Methylcyclohexane [e]	ND	1000	440	ug/l	
75-09-2	Methylene Chloride	ND	5000	2000	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5000	1000	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1000	230	ug/l	
100-42-5	Styrene	ND	1000	220	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1000	300	ug/l	
127-18-4	Tetrachloroethylene	ND	1000	220	ug/l	
108-88-3	Toluene	ND	1000	300	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2000	500	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1000	250	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1000	470	ug/l	
79-01-6	Trichloroethylene	33400	1000	350	ug/l	
75-69-4	Trichlorofluoromethane	ND	2000	500	ug/l	
75-01-4	Vinyl Chloride	ND	1000	410	ug/l	
1330-20-7	Xylene (total)	ND	3000	720	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	94%	83-118%
17060-07-0	1,2-Dichloroethane-D4	104%	99%	79-125%
2037-26-5	Toluene-D8	98%	100%	85-112%
460-00-4	4-Bromofluorobenzene	97%	97%	83-118%

(a) Sample vial(s) contained bubbles greater than 6mm.
(b) Confirmation run beyond holdtime.
(c) Confirmed ND by re-analysis beyond hold time.
(d) Associated Initial Calibration invalid.
(e) Associated ICV outside control limits high, however sample ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-37 (7-10)		
Lab Sample ID:	FA95287-5	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E32101.D	500	05/12/22 13:59	CF	n/a	n/a	V5E1471
Run #2 [a]	I747999.D	250	05/14/22 04:58	AK	n/a	n/a	VI2560

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	13000	5000	ug/l	
71-43-2	Benzene	ND	500	160	ug/l	
75-27-4	Bromodichloromethane	ND	500	120	ug/l	
75-25-2	Bromoform	ND	500	200	ug/l	
78-93-3	2-Butanone (MEK) [b]	1460	2500	1000	ug/l	J
75-15-0	Carbon Disulfide	ND	1000	270	ug/l	
56-23-5	Carbon Tetrachloride	ND	500	180	ug/l	
108-90-7	Chlorobenzene	ND	500	100	ug/l	
75-00-3	Chloroethane [c]	ND	1000	330	ug/l	
67-66-3	Chloroform	ND	500	150	ug/l	
110-82-7	Cyclohexane [d]	ND	500	200	ug/l	
124-48-1	Dibromochloromethane	ND	500	140	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2500	520	ug/l	
106-93-4	1,2-Dibromoethane	ND	1000	140	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1000	250	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	500	160	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	500	110	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	500	130	ug/l	
75-34-3	1,1-Dichloroethane	ND	500	170	ug/l	
107-06-2	1,2-Dichloroethane	ND	500	160	ug/l	
75-35-4	1,1-Dichloroethylene	ND	500	160	ug/l	
156-59-2	cis-1,2-Dichloroethylene	7290	500	140	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	500	110	ug/l	
78-87-5	1,2-Dichloropropane	ND	500	210	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	500	150	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	500	110	ug/l	
100-41-4	Ethylbenzene	ND	500	180	ug/l	
76-13-1	Freon 113	ND	500	240	ug/l	
591-78-6	2-Hexanone	ND	5000	1000	ug/l	
98-82-8	Isopropylbenzene	ND	500	110	ug/l	
79-20-9	Methyl Acetate	ND	10000	2500	ug/l	
74-83-9	Methyl Bromide	ND	2500	1000	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-37 (7-10)		
Lab Sample ID:	FA95287-5	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	1000	250	ug/l	
108-87-2	Methylcyclohexane [d]	ND	500	220	ug/l	
75-09-2	Methylene Chloride	ND	2500	1000	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	2500	500	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	500	110	ug/l	
100-42-5	Styrene	ND	500	110	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	500	150	ug/l	
127-18-4	Tetrachloroethylene	ND	500	110	ug/l	
108-88-3	Toluene	ND	500	150	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1000	250	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	500	120	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	500	230	ug/l	
79-01-6	Trichloroethylene	18600	500	170	ug/l	
75-69-4	Trichlorofluoromethane	ND	1000	250	ug/l	
75-01-4	Vinyl Chloride	ND	500	200	ug/l	
1330-20-7	Xylene (total)	ND	1500	360	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	96%	83-118%
17060-07-0	1,2-Dichloroethane-D4	105%	97%	79-125%
2037-26-5	Toluene-D8	102%	101%	85-112%
460-00-4	4-Bromofluorobenzene	103%	95%	83-118%

(a) Confirmation run beyond holdtime.
(b) Confirmed ND by re-analysis beyond hold time.
(c) Associated Initial Calibration invalid.
(d) Associated ICV outside control limits high, however sample ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-37 (15-18)		
Lab Sample ID:	FA95287-6	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	5E32102.D	250	05/12/22 14:22	CF	n/a	n/a	V5E1471
Run #2 [b]	I748000.D	100	05/14/22 05:21	AK	n/a	n/a	VI2560

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	6300	2500	ug/l	
71-43-2	Benzene	ND	250	78	ug/l	
75-27-4	Bromodichloromethane	ND	250	61	ug/l	
75-25-2	Bromoform	ND	250	100	ug/l	
78-93-3	2-Butanone (MEK) [c]	767	1300	500	ug/l	J
75-15-0	Carbon Disulfide	ND	500	130	ug/l	
56-23-5	Carbon Tetrachloride	ND	250	89	ug/l	
108-90-7	Chlorobenzene	ND	250	50	ug/l	
75-00-3	Chloroethane [d]	ND	500	170	ug/l	
67-66-3	Chloroform	ND	250	75	ug/l	
110-82-7	Cyclohexane [e]	ND	250	98	ug/l	
124-48-1	Dibromochloromethane	ND	250	69	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1300	260	ug/l	
106-93-4	1,2-Dibromoethane	ND	500	69	ug/l	
75-71-8	Dichlorodifluoromethane	ND	500	130	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	250	81	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	250	54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	250	64	ug/l	
75-34-3	1,1-Dichloroethane	ND	250	85	ug/l	
107-06-2	1,2-Dichloroethane	ND	250	78	ug/l	
75-35-4	1,1-Dichloroethylene	ND	250	81	ug/l	
156-59-2	cis-1,2-Dichloroethylene	5190	250	69	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	250	55	ug/l	
78-87-5	1,2-Dichloropropane	ND	250	110	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	250	73	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	250	54	ug/l	
100-41-4	Ethylbenzene	ND	250	89	ug/l	
76-13-1	Freon 113	ND	250	120	ug/l	
591-78-6	2-Hexanone	ND	2500	500	ug/l	
98-82-8	Isopropylbenzene	ND	250	55	ug/l	
79-20-9	Methyl Acetate	ND	5000	1300	ug/l	
74-83-9	Methyl Bromide	ND	1300	500	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-37 (15-18)		
Lab Sample ID:	FA95287-6	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	500	130	ug/l	
108-87-2	Methylcyclohexane [e]	ND	250	110	ug/l	
75-09-2	Methylene Chloride	ND	1300	500	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	1300	250	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	250	57	ug/l	
100-42-5	Styrene	ND	250	56	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	250	75	ug/l	
127-18-4	Tetrachloroethylene	ND	250	54	ug/l	
108-88-3	Toluene	ND	250	75	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	500	130	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	250	62	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	250	120	ug/l	
79-01-6	Trichloroethylene	401	250	86	ug/l	
75-69-4	Trichlorofluoromethane	ND	500	130	ug/l	
75-01-4	Vinyl Chloride	ND	250	100	ug/l	
1330-20-7	Xylene (total)	ND	750	180	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	102%	98%	79-125%
2037-26-5	Toluene-D8	97%	100%	85-112%
460-00-4	4-Bromofluorobenzene	95%	96%	83-118%

(a) Results from different vials are not consistent. No sample available for re-analysis.
(b) Confirmation run beyond holdtime.
(c) Confirmed ND by re-analysis beyond hold time.
(d) Associated Initial Calibration invalid.
(e) Associated ICV outside control limits high, however sample ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-38 (7-10)		
Lab Sample ID:	FA95287-7	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E32103.D	1000	05/12/22 14:45	CF	n/a	n/a	V5E1471
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25000	10000	ug/l	
71-43-2	Benzene	ND	1000	310	ug/l	
75-27-4	Bromodichloromethane	ND	1000	240	ug/l	
75-25-2	Bromoform	ND	1000	410	ug/l	
78-93-3	2-Butanone (MEK)	3020	5000	2000	ug/l	J
75-15-0	Carbon Disulfide	ND	2000	530	ug/l	
56-23-5	Carbon Tetrachloride	ND	1000	360	ug/l	
108-90-7	Chlorobenzene	ND	1000	200	ug/l	
75-00-3	Chloroethane [a]	ND	2000	670	ug/l	
67-66-3	Chloroform	ND	1000	300	ug/l	
110-82-7	Cyclohexane [b]	ND	1000	390	ug/l	
124-48-1	Dibromochloromethane	ND	1000	280	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5000	1000	ug/l	
106-93-4	1,2-Dibromoethane	ND	2000	280	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2000	500	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1000	320	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1000	220	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1000	260	ug/l	
75-34-3	1,1-Dichloroethane	ND	1000	340	ug/l	
107-06-2	1,2-Dichloroethane	ND	1000	310	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1000	320	ug/l	
156-59-2	cis-1,2-Dichloroethylene	49300	1000	280	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1000	220	ug/l	
78-87-5	1,2-Dichloropropane	ND	1000	430	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1000	290	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1000	210	ug/l	
100-41-4	Ethylbenzene	ND	1000	360	ug/l	
76-13-1	Freon 113	ND	1000	480	ug/l	
591-78-6	2-Hexanone	ND	10000	2000	ug/l	
98-82-8	Isopropylbenzene	ND	1000	220	ug/l	
79-20-9	Methyl Acetate	ND	20000	5000	ug/l	
74-83-9	Methyl Bromide	ND	5000	2000	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-38 (7-10)		
Lab Sample ID:	FA95287-7	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	2000	500	ug/l	
108-87-2	Methylcyclohexane [b]	ND	1000	440	ug/l	
75-09-2	Methylene Chloride	ND	5000	2000	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5000	1000	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1000	230	ug/l	
100-42-5	Styrene	ND	1000	220	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1000	300	ug/l	
127-18-4	Tetrachloroethylene	ND	1000	220	ug/l	
108-88-3	Toluene	ND	1000	300	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2000	500	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1000	250	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1000	470	ug/l	
79-01-6	Trichloroethylene	41100	1000	350	ug/l	
75-69-4	Trichlorofluoromethane	ND	2000	500	ug/l	
75-01-4	Vinyl Chloride	ND	1000	410	ug/l	
1330-20-7	Xylene (total)	ND	3000	720	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		83-118%
17060-07-0	1,2-Dichloroethane-D4	102%		79-125%
2037-26-5	Toluene-D8	100%		85-112%
460-00-4	4-Bromofluorobenzene	98%		83-118%

(a) Associated Initial Calibration invalid.
(b) Associated ICV outside control limits high, however sample ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-38 (12-15)		
Lab Sample ID:	FA95287-8	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E32104.D	500	05/12/22 15:08	CF	n/a	n/a	V5E1471
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	13000	5000	ug/l	
71-43-2	Benzene	ND	500	160	ug/l	
75-27-4	Bromodichloromethane	ND	500	120	ug/l	
75-25-2	Bromoform	ND	500	200	ug/l	
78-93-3	2-Butanone (MEK)	1320	2500	1000	ug/l	J
75-15-0	Carbon Disulfide	ND	1000	270	ug/l	
56-23-5	Carbon Tetrachloride	ND	500	180	ug/l	
108-90-7	Chlorobenzene	ND	500	100	ug/l	
75-00-3	Chloroethane [a]	ND	1000	330	ug/l	
67-66-3	Chloroform	ND	500	150	ug/l	
110-82-7	Cyclohexane [b]	ND	500	200	ug/l	
124-48-1	Dibromochloromethane	ND	500	140	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2500	520	ug/l	
106-93-4	1,2-Dibromoethane	ND	1000	140	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1000	250	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	500	160	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	500	110	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	500	130	ug/l	
75-34-3	1,1-Dichloroethane	ND	500	170	ug/l	
107-06-2	1,2-Dichloroethane	ND	500	160	ug/l	
75-35-4	1,1-Dichloroethylene	ND	500	160	ug/l	
156-59-2	cis-1,2-Dichloroethylene	40500	500	140	ug/l	
156-60-5	trans-1,2-Dichloroethylene	373	500	110	ug/l	J
78-87-5	1,2-Dichloropropane	ND	500	210	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	500	150	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	500	110	ug/l	
100-41-4	Ethylbenzene	ND	500	180	ug/l	
76-13-1	Freon 113	ND	500	240	ug/l	
591-78-6	2-Hexanone	ND	5000	1000	ug/l	
98-82-8	Isopropylbenzene	ND	500	110	ug/l	
79-20-9	Methyl Acetate	ND	10000	2500	ug/l	
74-83-9	Methyl Bromide	ND	2500	1000	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-38 (12-15)		
Lab Sample ID:	FA95287-8	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	1000	250	ug/l	
108-87-2	Methylcyclohexane [b]	ND	500	220	ug/l	
75-09-2	Methylene Chloride	ND	2500	1000	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	2500	500	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	500	110	ug/l	
100-42-5	Styrene	ND	500	110	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	500	150	ug/l	
127-18-4	Tetrachloroethylene	ND	500	110	ug/l	
108-88-3	Toluene	ND	500	150	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1000	250	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	500	120	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	500	230	ug/l	
79-01-6	Trichloroethylene	9290	500	170	ug/l	
75-69-4	Trichlorofluoromethane	ND	1000	250	ug/l	
75-01-4	Vinyl Chloride	ND	500	200	ug/l	
1330-20-7	Xylene (total)	ND	1500	360	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	103%		79-125%
2037-26-5	Toluene-D8	96%		85-112%
460-00-4	4-Bromofluorobenzene	93%		83-118%

(a) Associated Initial Calibration invalid.
(b) Associated ICV outside control limits high, however sample ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-44 (7-10)		
Lab Sample ID:	FA95287-9	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E32105.D	2	05/12/22 15:31	CF	n/a	n/a	V5E1471
Run #2 [a]	I748001.D	1	05/14/22 05:45	AK	n/a	n/a	VI2560

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	20	ug/l	
71-43-2	Benzene	ND	2.0	0.62	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.48	ug/l	
75-25-2	Bromoform	ND	2.0	0.81	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.0	ug/l	
75-15-0	Carbon Disulfide	ND	4.0	1.1	ug/l	
56-23-5	Carbon Tetrachloride	ND	2.0	0.71	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.40	ug/l	
75-00-3	Chloroethane [b]	ND	4.0	1.3	ug/l	
67-66-3	Chloroform	ND	2.0	0.60	ug/l	
110-82-7	Cyclohexane [c]	ND	2.0	0.78	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.55	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	2.1	ug/l	
106-93-4	1,2-Dibromoethane	ND	4.0	0.55	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.65	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.43	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.51	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.68	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.62	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.64	ug/l	
156-59-2	cis-1,2-Dichloroethylene	5.3	2.0	0.55	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.44	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.85	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.58	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.71	ug/l	
76-13-1	Freon 113	ND	2.0	0.96	ug/l	
591-78-6	2-Hexanone	ND	20	4.0	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	0.44	ug/l	
79-20-9	Methyl Acetate	ND	40	10	ug/l	
74-83-9	Methyl Bromide	ND	10	4.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-44 (7-10)		
Lab Sample ID:	FA95287-9	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	4.0	1.0	ug/l	
108-87-2	Methylcyclohexane [c]	ND	2.0	0.87	ug/l	
75-09-2	Methylene Chloride	ND	10	4.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	10	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.46	ug/l	
100-42-5	Styrene	ND	2.0	0.44	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.60	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.43	ug/l	
108-88-3	Toluene	ND	2.0	0.60	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.93	ug/l	
79-01-6	Trichloroethylene [d]	2.6	2.0	0.69	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	1.0	ug/l	
75-01-4	Vinyl Chloride	ND	2.0	0.82	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.4	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%	98%	83-118%
17060-07-0	1,2-Dichloroethane-D4	103%	100%	79-125%
2037-26-5	Toluene-D8	99%	97%	85-112%
460-00-4	4-Bromofluorobenzene	98%	96%	83-118%

(a) Confirmation run beyond holdtime.
(b) Associated Initial Calibration invalid.
(c) Associated ICV outside control limits high, however sample ND.
(d) Confirmed ND by re-analysis beyond hold time.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-44 (15-18)		
Lab Sample ID:	FA95287-10	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	5E32106.D	1000	05/12/22 15:54	CF	n/a	n/a	V5E1471
Run #2 [b]	5E32161.D	10000	05/13/22 18:27	CF	n/a	n/a	V5E1473

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25000	10000	ug/l	
71-43-2	Benzene	ND	1000	310	ug/l	
75-27-4	Bromodichloromethane	ND	1000	240	ug/l	
75-25-2	Bromoform	ND	1000	410	ug/l	
78-93-3	2-Butanone (MEK)	ND	5000	2000	ug/l	
75-15-0	Carbon Disulfide	ND	2000	530	ug/l	
56-23-5	Carbon Tetrachloride	ND	1000	360	ug/l	
108-90-7	Chlorobenzene	ND	1000	200	ug/l	
75-00-3	Chloroethane [c]	ND	2000	670	ug/l	
67-66-3	Chloroform	ND	1000	300	ug/l	
110-82-7	Cyclohexane [d]	ND	1000	390	ug/l	
124-48-1	Dibromochloromethane	ND	1000	280	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5000	1000	ug/l	
106-93-4	1,2-Dibromoethane	ND	2000	280	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2000	500	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1000	320	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1000	220	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1000	260	ug/l	
75-34-3	1,1-Dichloroethane	ND	1000	340	ug/l	
107-06-2	1,2-Dichloroethane	ND	1000	310	ug/l	
75-35-4	1,1-Dichloroethylene	1450	1000	320	ug/l	
156-59-2	cis-1,2-Dichloroethylene	28800 [e]	10000	2800	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1000	220	ug/l	
78-87-5	1,2-Dichloropropane	ND	1000	430	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1000	290	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1000	210	ug/l	
100-41-4	Ethylbenzene	ND	1000	360	ug/l	
76-13-1	Freon 113	ND	1000	480	ug/l	
591-78-6	2-Hexanone	ND	10000	2000	ug/l	
98-82-8	Isopropylbenzene	ND	1000	220	ug/l	
79-20-9	Methyl Acetate	ND	20000	5000	ug/l	
74-83-9	Methyl Bromide	ND	5000	2000	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-44 (15-18)		
Lab Sample ID:	FA95287-10	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	2000	500	ug/l	
108-87-2	Methylcyclohexane [d]	ND	1000	440	ug/l	
75-09-2	Methylene Chloride	ND	5000	2000	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5000	1000	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1000	230	ug/l	
100-42-5	Styrene	ND	1000	220	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1000	300	ug/l	
127-18-4	Tetrachloroethylene	36700 [e]	10000	2200	ug/l	
108-88-3	Toluene	ND	1000	300	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2000	500	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1000	250	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1000	470	ug/l	
79-01-6	Trichloroethylene [f]	22200000 [e]	10000	3500	ug/l	E
75-69-4	Trichlorofluoromethane	ND	2000	500	ug/l	
75-01-4	Vinyl Chloride	ND	1000	410	ug/l	
1330-20-7	Xylene (total)	ND	3000	720	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	104%	109%	79-125%
2037-26-5	Toluene-D8	98%	96%	85-112%
460-00-4	4-Bromofluorobenzene	95%	97%	83-118%

(a) Results from different vials are not consistent; higher results were reported.
(b) Sample re-analyzed beyond hold time. Results from different vials are not consistent; higher results were reported.
(c) Associated Initial Calibration invalid.
(d) Associated ICV outside control limits high, however sample ND.
(e) Result is from Run# 2
(f) No sample available for re-analysis.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-41 (7-10)		
Lab Sample ID:	FA95287-11	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E32107.D	200	05/12/22 16:17	CF	n/a	n/a	V5E1471
Run #2 [a]	I747986.D	10	05/13/22 23:52	AK	n/a	n/a	VI2560

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5000	2000	ug/l	
71-43-2	Benzene	ND	200	62	ug/l	
75-27-4	Bromodichloromethane	ND	200	48	ug/l	
75-25-2	Bromoform	ND	200	81	ug/l	
78-93-3	2-Butanone (MEK) [b]	609	1000	400	ug/l	J
75-15-0	Carbon Disulfide	ND	400	110	ug/l	
56-23-5	Carbon Tetrachloride	ND	200	71	ug/l	
108-90-7	Chlorobenzene	ND	200	40	ug/l	
75-00-3	Chloroethane [c]	ND	400	130	ug/l	
67-66-3	Chloroform	ND	200	60	ug/l	
110-82-7	Cyclohexane [d]	ND	200	78	ug/l	
124-48-1	Dibromochloromethane	ND	200	55	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1000	210	ug/l	
106-93-4	1,2-Dibromoethane	ND	400	55	ug/l	
75-71-8	Dichlorodifluoromethane	ND	400	100	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	200	65	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	200	43	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	200	51	ug/l	
75-34-3	1,1-Dichloroethane	ND	200	68	ug/l	
107-06-2	1,2-Dichloroethane	ND	200	62	ug/l	
75-35-4	1,1-Dichloroethylene	ND	200	64	ug/l	
156-59-2	cis-1,2-Dichloroethylene	693	200	55	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	200	44	ug/l	
78-87-5	1,2-Dichloropropane	ND	200	85	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	200	58	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	200	43	ug/l	
100-41-4	Ethylbenzene	ND	200	71	ug/l	
76-13-1	Freon 113	ND	200	96	ug/l	
591-78-6	2-Hexanone	ND	2000	400	ug/l	
98-82-8	Isopropylbenzene	ND	200	44	ug/l	
79-20-9	Methyl Acetate	ND	4000	1000	ug/l	
74-83-9	Methyl Bromide	ND	1000	400	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-41 (7-10)		
Lab Sample ID:	FA95287-11	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	400	100	ug/l	
108-87-2	Methylcyclohexane [d]	ND	200	87	ug/l	
75-09-2	Methylene Chloride	ND	1000	400	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	1000	200	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	200	46	ug/l	
100-42-5	Styrene	ND	200	44	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	200	60	ug/l	
127-18-4	Tetrachloroethylene	ND	200	43	ug/l	
108-88-3	Toluene	ND	200	60	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	400	100	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	200	93	ug/l	
79-01-6	Trichloroethylene [e]	551	200	69	ug/l	
75-69-4	Trichlorofluoromethane	ND	400	100	ug/l	
75-01-4	Vinyl Chloride	ND	200	82	ug/l	
1330-20-7	Xylene (total)	ND	600	140	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%	97%	83-118%
17060-07-0	1,2-Dichloroethane-D4	106%	100%	79-125%
2037-26-5	Toluene-D8	100%	98%	85-112%
460-00-4	4-Bromofluorobenzene	98%	102%	83-118%

(a) Confirmation run beyond holdtime.
(b) Confirmed ND by re-analysis beyond hold time.
(c) Associated Initial Calibration invalid.
(d) Associated ICV outside control limits high, however sample ND.
(e) Suspected carry-over. Confirmed by re-analysis beyond hold time.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-41 (17-20)		
Lab Sample ID:	FA95287-12	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	5E32108.D	1000	05/12/22 16:40	CF	n/a	n/a	V5E1471
Run #2 [b]	5E32162.D	2000	05/13/22 18:50	CF	n/a	n/a	V5E1473

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25000	10000	ug/l	
71-43-2	Benzene	ND	1000	310	ug/l	
75-27-4	Bromodichloromethane	ND	1000	240	ug/l	
75-25-2	Bromoform	ND	1000	410	ug/l	
78-93-3	2-Butanone (MEK)	2980	5000	2000	ug/l	J
75-15-0	Carbon Disulfide	ND	2000	530	ug/l	
56-23-5	Carbon Tetrachloride	ND	1000	360	ug/l	
108-90-7	Chlorobenzene	ND	1000	200	ug/l	
75-00-3	Chloroethane [c]	ND	2000	670	ug/l	
67-66-3	Chloroform	ND	1000	300	ug/l	
110-82-7	Cyclohexane [d]	ND	1000	390	ug/l	
124-48-1	Dibromochloromethane	ND	1000	280	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5000	1000	ug/l	
106-93-4	1,2-Dibromoethane	ND	2000	280	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2000	500	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1000	320	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1000	220	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1000	260	ug/l	
75-34-3	1,1-Dichloroethane	ND	1000	340	ug/l	
107-06-2	1,2-Dichloroethane	ND	1000	310	ug/l	
75-35-4	1,1-Dichloroethylene	430	1000	320	ug/l	J
156-59-2	cis-1,2-Dichloroethylene	18900	1000	280	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1000	220	ug/l	
78-87-5	1,2-Dichloropropane	ND	1000	430	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1000	290	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1000	210	ug/l	
100-41-4	Ethylbenzene	ND	1000	360	ug/l	
76-13-1	Freon 113	ND	1000	480	ug/l	
591-78-6	2-Hexanone	ND	10000	2000	ug/l	
98-82-8	Isopropylbenzene	ND	1000	220	ug/l	
79-20-9	Methyl Acetate	ND	20000	5000	ug/l	
74-83-9	Methyl Bromide	ND	5000	2000	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-41 (17-20)		
Lab Sample ID:	FA95287-12	**Date Sampled:**	04/28/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	2000	500	ug/l	
108-87-2	Methylcyclohexane [d]	ND	1000	440	ug/l	
75-09-2	Methylene Chloride	ND	5000	2000	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5000	1000	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1000	230	ug/l	
100-42-5	Styrene	ND	1000	220	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1000	300	ug/l	
127-18-4	Tetrachloroethylene	ND	1000	220	ug/l	
108-88-3	Toluene	ND	1000	300	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2000	500	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1000	250	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1000	470	ug/l	
79-01-6	Trichloroethylene	133000 [e]	2000	690	ug/l	
75-69-4	Trichlorofluoromethane	ND	2000	500	ug/l	
75-01-4	Vinyl Chloride	ND	1000	410	ug/l	
1330-20-7	Xylene (total)	ND	3000	720	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	103%	83-118%
17060-07-0	1,2-Dichloroethane-D4	99%	107%	79-125%
2037-26-5	Toluene-D8	101%	98%	85-112%
460-00-4	4-Bromofluorobenzene	98%	94%	83-118%

(a) Sample vial(s) contained bubbles greater than 6mm.
(b) Sample re-analyzed beyond hold time.
(c) Associated Initial Calibration outside control limits (%RSD > 15%); sample is ND.
(d) Associated ICV outside control limits high, however sample ND.
(e) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-42 (7-10)		
Lab Sample ID:	FA95287-13	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	O68325.D	2	05/13/22 19:52	JL	n/a	n/a	VO2708
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	20	ug/l	
71-43-2	Benzene	ND	2.0	0.62	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.48	ug/l	
75-25-2	Bromoform	ND	2.0	0.81	ug/l	
78-93-3	2-Butanone (MEK) [b]	11.2	10	4.0	ug/l	
75-15-0	Carbon Disulfide	ND	4.0	1.1	ug/l	
56-23-5	Carbon Tetrachloride	ND	2.0	0.71	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.40	ug/l	
75-00-3	Chloroethane [c]	ND	4.0	1.3	ug/l	
67-66-3	Chloroform	ND	2.0	0.60	ug/l	
110-82-7	Cyclohexane	ND	2.0	0.78	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.55	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	2.1	ug/l	
106-93-4	1,2-Dibromoethane	ND	4.0	0.55	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.65	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.43	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.51	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.68	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.62	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.64	ug/l	
156-59-2	cis-1,2-Dichloroethylene	5.1	2.0	0.55	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.44	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.85	ug/l	
10061-01-5	cis-1,3-Dichloropropene [d]	ND	2.0	0.58	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.71	ug/l	
76-13-1	Freon 113	ND	2.0	0.96	ug/l	
591-78-6	2-Hexanone	ND	20	4.0	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	0.44	ug/l	
79-20-9	Methyl Acetate	ND	40	10	ug/l	
74-83-9	Methyl Bromide [c]	ND	10	4.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-42 (7-10)		
Lab Sample ID:	FA95287-13	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	4.0	1.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	0.87	ug/l	
75-09-2	Methylene Chloride	ND	10	4.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	10	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.46	ug/l	
100-42-5	Styrene	ND	2.0	0.44	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.60	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.43	ug/l	
108-88-3	Toluene	ND	2.0	0.60	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.93	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.69	ug/l	
75-69-4	Trichlorofluoromethane [c]	ND	4.0	1.0	ug/l	
75-01-4	Vinyl Chloride	ND	2.0	0.82	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.4	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		83-118%
17060-07-0	1,2-Dichloroethane-D4	101%		79-125%
2037-26-5	Toluene-D8	95%		85-112%
460-00-4	4-Bromofluorobenzene	97%		83-118%

(a) Dilution required due to high silt content in the sample. Vials combined due to high silt. Sample was not preserved to a pH < 2.
(b) Suspected instrument contaminant.
(c) Associated CCV outside control limits high, sample is ND.
(d) Associated BS recovery outside control limits high, sample is ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-42 (15-18)		
Lab Sample ID:	FA95287-14	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	I748043.D	1000	05/17/22 14:04	AK	n/a	n/a	VI2562
Run #2 [b]	I747958.D	1000	05/13/22 12:53	AK	n/a	n/a	VI2559

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25000	10000	ug/l	
71-43-2	Benzene	ND	1000	310	ug/l	
75-27-4	Bromodichloromethane	ND	1000	240	ug/l	
75-25-2	Bromoform	ND	1000	410	ug/l	
78-93-3	2-Butanone (MEK)	ND	5000	2000	ug/l	
75-15-0	Carbon Disulfide	ND	2000	530	ug/l	
56-23-5	Carbon Tetrachloride	ND	1000	360	ug/l	
108-90-7	Chlorobenzene	ND	1000	200	ug/l	
75-00-3	Chloroethane	ND	2000	670	ug/l	
67-66-3	Chloroform	ND	1000	300	ug/l	
110-82-7	Cyclohexane	ND	1000	390	ug/l	
124-48-1	Dibromochloromethane	ND	1000	280	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5000	1000	ug/l	
106-93-4	1,2-Dibromoethane	ND	2000	280	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2000	500	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1000	320	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1000	220	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1000	260	ug/l	
75-34-3	1,1-Dichloroethane	ND	1000	340	ug/l	
107-06-2	1,2-Dichloroethane	ND	1000	310	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1000	320	ug/l	
156-59-2	cis-1,2-Dichloroethylene	50700	1000	280	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1000	220	ug/l	
78-87-5	1,2-Dichloropropane	ND	1000	430	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1000	290	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1000	210	ug/l	
100-41-4	Ethylbenzene	ND	1000	360	ug/l	
76-13-1	Freon 113	ND	1000	480	ug/l	
591-78-6	2-Hexanone	ND	10000	2000	ug/l	
98-82-8	Isopropylbenzene	ND	1000	220	ug/l	
79-20-9	Methyl Acetate	ND	20000	5000	ug/l	
74-83-9	Methyl Bromide	ND	5000	2000	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-42 (15-18)		
Lab Sample ID:	FA95287-14	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	2000	500	ug/l	
108-87-2	Methylcyclohexane	ND	1000	440	ug/l	
75-09-2	Methylene Chloride	ND	5000	2000	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5000	1000	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1000	230	ug/l	
100-42-5	Styrene	ND	1000	220	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1000	300	ug/l	
127-18-4	Tetrachloroethylene	ND	1000	220	ug/l	
108-88-3	Toluene	ND	1000	300	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2000	500	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1000	250	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1000	470	ug/l	
79-01-6	Trichloroethylene	18100	1000	350	ug/l	
75-69-4	Trichlorofluoromethane	ND	2000	500	ug/l	
75-01-4	Vinyl Chloride	860	1000	410	ug/l	J
1330-20-7	Xylene (total)	ND	3000	720	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	96%	102%	79-125%
2037-26-5	Toluene-D8	98%	97%	85-112%
460-00-4	4-Bromofluorobenzene	102%	100%	83-118%

(a) Sample re-analyzed beyond hold time.
(b) Confirmation run.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-43 (7-10)		
Lab Sample ID:	FA95287-15	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	I748044.D	50	05/17/22 14:27	AK	n/a	n/a	VI2562
Run #2 [b]	I747959.D	1	05/13/22 13:16	AK	n/a	n/a	VI2559

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	1300	500	ug/l	
71-43-2	Benzene	ND	50	16	ug/l	
75-27-4	Bromodichloromethane	ND	50	12	ug/l	
75-25-2	Bromoform	ND	50	20	ug/l	
78-93-3	2-Butanone (MEK)	ND	250	100	ug/l	
75-15-0	Carbon Disulfide	ND	100	27	ug/l	
56-23-5	Carbon Tetrachloride	ND	50	18	ug/l	
108-90-7	Chlorobenzene	ND	50	10	ug/l	
75-00-3	Chloroethane	ND	100	33	ug/l	
67-66-3	Chloroform	ND	50	15	ug/l	
110-82-7	Cyclohexane	ND	50	20	ug/l	
124-48-1	Dibromochloromethane	ND	50	14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	52	ug/l	
106-93-4	1,2-Dibromoethane	ND	100	14	ug/l	
75-71-8	Dichlorodifluoromethane	ND	100	25	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	50	16	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	50	11	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	50	13	ug/l	
75-34-3	1,1-Dichloroethane	ND	50	17	ug/l	
107-06-2	1,2-Dichloroethane	ND	50	16	ug/l	
75-35-4	1,1-Dichloroethylene	ND	50	16	ug/l	
156-59-2	cis-1,2-Dichloroethylene	2000	50	14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	50	11	ug/l	
78-87-5	1,2-Dichloropropane	ND	50	21	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	50	15	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	50	11	ug/l	
100-41-4	Ethylbenzene	ND	50	18	ug/l	
76-13-1	Freon 113	ND	50	24	ug/l	
591-78-6	2-Hexanone	ND	500	100	ug/l	
98-82-8	Isopropylbenzene	ND	50	11	ug/l	
79-20-9	Methyl Acetate	ND	1000	250	ug/l	
74-83-9	Methyl Bromide	ND	250	100	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-43 (7-10)		
Lab Sample ID:	FA95287-15	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	100	25	ug/l	
108-87-2	Methylcyclohexane	ND	50	22	ug/l	
75-09-2	Methylene Chloride	ND	250	100	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	250	50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	50	11	ug/l	
100-42-5	Styrene	ND	50	11	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	15	ug/l	
127-18-4	Tetrachloroethylene	ND	50	11	ug/l	
108-88-3	Toluene	ND	50	15	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	100	25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	50	12	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	50	23	ug/l	
79-01-6	Trichloroethylene	ND	50	17	ug/l	
75-69-4	Trichlorofluoromethane	ND	100	25	ug/l	
75-01-4	Vinyl Chloride	404	50	20	ug/l	
1330-20-7	Xylene (total)	ND	150	36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	98%	103%	79-125%
2037-26-5	Toluene-D8	99%	98%	85-112%
460-00-4	4-Bromofluorobenzene	100%	101%	83-118%

(a) Sample re-analyzed beyond hold time.
(b) Confirmation run.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-43 (17-20)		
Lab Sample ID:	FA95287-16	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	I748045.D	50000	05/17/22 14:51	AK	n/a	n/a	VI2562
Run #2 [b]	I747960.D	5000	05/13/22 13:40	AK	n/a	n/a	VI2559

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	1300000	500000	ug/l	
71-43-2	Benzene	ND	50000	16000	ug/l	
75-27-4	Bromodichloromethane	ND	50000	12000	ug/l	
75-25-2	Bromoform	ND	50000	20000	ug/l	
78-93-3	2-Butanone (MEK)	ND	250000	100000	ug/l	
75-15-0	Carbon Disulfide	ND	100000	27000	ug/l	
56-23-5	Carbon Tetrachloride	ND	50000	18000	ug/l	
108-90-7	Chlorobenzene	ND	50000	10000	ug/l	
75-00-3	Chloroethane	ND	100000	33000	ug/l	
67-66-3	Chloroform	ND	50000	15000	ug/l	
110-82-7	Cyclohexane	ND	50000	20000	ug/l	
124-48-1	Dibromochloromethane	ND	50000	14000	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	250000	52000	ug/l	
106-93-4	1,2-Dibromoethane	ND	100000	14000	ug/l	
75-71-8	Dichlorodifluoromethane	ND	100000	25000	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	50000	16000	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	50000	11000	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	50000	13000	ug/l	
75-34-3	1,1-Dichloroethane	ND	50000	17000	ug/l	
107-06-2	1,2-Dichloroethane	ND	50000	16000	ug/l	
75-35-4	1,1-Dichloroethylene	ND	50000	16000	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	50000	14000	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	50000	11000	ug/l	
78-87-5	1,2-Dichloropropane	ND	50000	21000	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	50000	15000	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	50000	11000	ug/l	
100-41-4	Ethylbenzene	ND	50000	18000	ug/l	
76-13-1	Freon 113	ND	50000	24000	ug/l	
591-78-6	2-Hexanone	ND	500000	100000	ug/l	
98-82-8	Isopropylbenzene	ND	50000	11000	ug/l	
79-20-9	Methyl Acetate	ND	1000000	250000	ug/l	
74-83-9	Methyl Bromide	ND	250000	100000	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-43 (17-20)		
Lab Sample ID:	FA95287-16	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	100000	25000	ug/l	
108-87-2	Methylcyclohexane	ND	50000	22000	ug/l	
75-09-2	Methylene Chloride	ND	250000	100000	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	250000	50000	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	50000	11000	ug/l	
100-42-5	Styrene	ND	50000	11000	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	50000	15000	ug/l	
127-18-4	Tetrachloroethylene	ND	50000	11000	ug/l	
108-88-3	Toluene	ND	50000	15000	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	100000	25000	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	50000	12000	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	50000	23000	ug/l	
79-01-6	Trichloroethylene	1250000	50000	17000	ug/l	
75-69-4	Trichlorofluoromethane	ND	100000	25000	ug/l	
75-01-4	Vinyl Chloride	ND	50000	20000	ug/l	
1330-20-7	Xylene (total)	ND	150000	36000	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%	94%	83-118%
17060-07-0	1,2-Dichloroethane-D4	95%	96%	79-125%
2037-26-5	Toluene-D8	99%	97%	85-112%
460-00-4	4-Bromofluorobenzene	100%	104%	83-118%

(a) Sample re-analyzed beyond hold time.
(b) Confirmation run.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-45 (7-10)		
Lab Sample ID:	FA95287-17	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	I748046.D	2	05/17/22 15:15	AK	n/a	n/a	VI2562
Run #2 [b]	I747961.D	1	05/13/22 14:03	AK	n/a	n/a	VI2559

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	20	ug/l	
71-43-2	Benzene	ND	2.0	0.62	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.48	ug/l	
75-25-2	Bromoform	ND	2.0	0.81	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.0	ug/l	
75-15-0	Carbon Disulfide	ND	4.0	1.1	ug/l	
56-23-5	Carbon Tetrachloride	ND	2.0	0.71	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.40	ug/l	
75-00-3	Chloroethane	ND	4.0	1.3	ug/l	
67-66-3	Chloroform	ND	2.0	0.60	ug/l	
110-82-7	Cyclohexane	ND	2.0	0.78	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.55	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	2.1	ug/l	
106-93-4	1,2-Dibromoethane	ND	4.0	0.55	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.65	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.43	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.51	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.68	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.62	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.64	ug/l	
156-59-2	cis-1,2-Dichloroethylene	91.3	2.0	0.55	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.44	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.85	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.58	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.71	ug/l	
76-13-1	Freon 113	ND	2.0	0.96	ug/l	
591-78-6	2-Hexanone	ND	20	4.0	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	0.44	ug/l	
79-20-9	Methyl Acetate	ND	40	10	ug/l	
74-83-9	Methyl Bromide	ND	10	4.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-45 (7-10)		
Lab Sample ID:	FA95287-17	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	4.0	1.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	0.87	ug/l	
75-09-2	Methylene Chloride	ND	10	4.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	10	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.46	ug/l	
100-42-5	Styrene	ND	2.0	0.44	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.60	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.43	ug/l	
108-88-3	Toluene	ND	2.0	0.60	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.93	ug/l	
79-01-6	Trichloroethylene	51.3	2.0	0.69	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	1.0	ug/l	
75-01-4	Vinyl Chloride	9.6	2.0	0.82	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.4	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%	96%	83-118%
17060-07-0	1,2-Dichloroethane-D4	95%	97%	79-125%
2037-26-5	Toluene-D8	99%	98%	85-112%
460-00-4	4-Bromofluorobenzene	101%	99%	83-118%

(a) Sample re-analyzed beyond hold time.
(b) Confirmation run.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-45 (17-20)		
Lab Sample ID:	FA95287-18	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	I748047.D	25000	05/17/22 15:38	AK	n/a	n/a	VI2562
Run #2 [b]	I747962.D	5000	05/13/22 14:27	AK	n/a	n/a	VI2559

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	630000	250000	ug/l	
71-43-2	Benzene	ND	25000	7800	ug/l	
75-27-4	Bromodichloromethane	ND	25000	6100	ug/l	
75-25-2	Bromoform	ND	25000	10000	ug/l	
78-93-3	2-Butanone (MEK)	ND	130000	50000	ug/l	
75-15-0	Carbon Disulfide	ND	50000	13000	ug/l	
56-23-5	Carbon Tetrachloride	ND	25000	8900	ug/l	
108-90-7	Chlorobenzene	ND	25000	5000	ug/l	
75-00-3	Chloroethane	ND	50000	17000	ug/l	
67-66-3	Chloroform	ND	25000	7500	ug/l	
110-82-7	Cyclohexane	ND	25000	9800	ug/l	
124-48-1	Dibromochloromethane	ND	25000	6900	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	130000	26000	ug/l	
106-93-4	1,2-Dibromoethane	ND	50000	6900	ug/l	
75-71-8	Dichlorodifluoromethane	ND	50000	13000	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	25000	8100	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	25000	5400	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	25000	6400	ug/l	
75-34-3	1,1-Dichloroethane	ND	25000	8500	ug/l	
107-06-2	1,2-Dichloroethane	ND	25000	7800	ug/l	
75-35-4	1,1-Dichloroethylene	ND	25000	8100	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	25000	6900	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	25000	5500	ug/l	
78-87-5	1,2-Dichloropropane	ND	25000	11000	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	25000	7300	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	25000	5400	ug/l	
100-41-4	Ethylbenzene	ND	25000	8900	ug/l	
76-13-1	Freon 113	ND	25000	12000	ug/l	
591-78-6	2-Hexanone	ND	250000	50000	ug/l	
98-82-8	Isopropylbenzene	ND	25000	5500	ug/l	
79-20-9	Methyl Acetate	ND	500000	130000	ug/l	
74-83-9	Methyl Bromide	ND	130000	50000	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-45 (17-20)		
Lab Sample ID:	FA95287-18	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	50000	13000	ug/l	
108-87-2	Methylcyclohexane	ND	25000	11000	ug/l	
75-09-2	Methylene Chloride	ND	130000	50000	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	130000	25000	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	25000	5700	ug/l	
100-42-5	Styrene	ND	25000	5600	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	25000	7500	ug/l	
127-18-4	Tetrachloroethylene	ND	25000	5400	ug/l	
108-88-3	Toluene	ND	25000	7500	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	50000	13000	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	25000	6200	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	25000	12000	ug/l	
79-01-6	Trichloroethylene	1240000	25000	8600	ug/l	
75-69-4	Trichlorofluoromethane	ND	50000	13000	ug/l	
75-01-4	Vinyl Chloride	ND	25000	10000	ug/l	
1330-20-7	Xylene (total)	ND	75000	18000	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%	94%	83-118%
17060-07-0	1,2-Dichloroethane-D4	96%	95%	79-125%
2037-26-5	Toluene-D8	99%	97%	85-112%
460-00-4	4-Bromofluorobenzene	103%	100%	83-118%

(a) Sample re-analyzed beyond hold time.
(b) Confirmation run.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-46 (7-10)		
Lab Sample ID:	FA95287-19	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	I748048.D	1	05/17/22 16:02	AK	n/a	n/a	VI2562
Run #2 [b]	I747963.D	1	05/13/22 14:51	AK	n/a	n/a	VI2559

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	5.0	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-46 (7-10)		
Lab Sample ID:	FA95287-19	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	48.4	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.72	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%	94%	83-118%
17060-07-0	1,2-Dichloroethane-D4	96%	95%	79-125%
2037-26-5	Toluene-D8	99%	96%	85-112%
460-00-4	4-Bromofluorobenzene	101%	102%	83-118%

(a) Sample re-analyzed beyond hold time.
(b) Confirmation run.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-46 (15-18)		
Lab Sample ID:	FA95287-20	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	I748049.D	10000	05/17/22 16:26	AK	n/a	n/a	VI2562
Run #2 [b]	I747964.D	1000	05/13/22 15:14	AK	n/a	n/a	VI2559

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	250000	100000	ug/l	
71-43-2	Benzene	ND	10000	3100	ug/l	
75-27-4	Bromodichloromethane	ND	10000	2400	ug/l	
75-25-2	Bromoform	ND	10000	4100	ug/l	
78-93-3	2-Butanone (MEK)	ND	50000	20000	ug/l	
75-15-0	Carbon Disulfide	ND	20000	5300	ug/l	
56-23-5	Carbon Tetrachloride	ND	10000	3600	ug/l	
108-90-7	Chlorobenzene	ND	10000	2000	ug/l	
75-00-3	Chloroethane	ND	20000	6700	ug/l	
67-66-3	Chloroform	ND	10000	3000	ug/l	
110-82-7	Cyclohexane	ND	10000	3900	ug/l	
124-48-1	Dibromochloromethane	ND	10000	2800	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	50000	10000	ug/l	
106-93-4	1,2-Dibromoethane	ND	20000	2800	ug/l	
75-71-8	Dichlorodifluoromethane	ND	20000	5000	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	10000	3200	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	10000	2200	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10000	2600	ug/l	
75-34-3	1,1-Dichloroethane	ND	10000	3400	ug/l	
107-06-2	1,2-Dichloroethane	ND	10000	3100	ug/l	
75-35-4	1,1-Dichloroethylene	ND	10000	3200	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	10000	2800	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	10000	2200	ug/l	
78-87-5	1,2-Dichloropropane	ND	10000	4300	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	10000	2900	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	10000	2100	ug/l	
100-41-4	Ethylbenzene	ND	10000	3600	ug/l	
76-13-1	Freon 113	ND	10000	4800	ug/l	
591-78-6	2-Hexanone	ND	100000	20000	ug/l	
98-82-8	Isopropylbenzene	ND	10000	2200	ug/l	
79-20-9	Methyl Acetate	ND	200000	50000	ug/l	
74-83-9	Methyl Bromide	ND	50000	20000	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-46 (15-18)		
Lab Sample ID:	FA95287-20	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	20000	5000	ug/l	
108-87-2	Methylcyclohexane	ND	10000	4400	ug/l	
75-09-2	Methylene Chloride	ND	50000	20000	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50000	10000	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	10000	2300	ug/l	
100-42-5	Styrene	ND	10000	2200	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10000	3000	ug/l	
127-18-4	Tetrachloroethylene	ND	10000	2200	ug/l	
108-88-3	Toluene	ND	10000	3000	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	20000	5000	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	10000	2500	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	10000	4700	ug/l	
79-01-6	Trichloroethylene	350000	10000	3500	ug/l	
75-69-4	Trichlorofluoromethane	ND	20000	5000	ug/l	
75-01-4	Vinyl Chloride	ND	10000	4100	ug/l	
1330-20-7	Xylene (total)	ND	30000	7200	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%	97%	83-118%
17060-07-0	1,2-Dichloroethane-D4	94%	102%	79-125%
2037-26-5	Toluene-D8	100%	99%	85-112%
460-00-4	4-Bromofluorobenzene	100%	70% [c]	83-118%

(a) Sample re-analyzed beyond hold time.
(b) Confirmation run.
(c) Outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-47 (7-10)		
Lab Sample ID:	FA95287-21	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	I748050.D	1	05/17/22 16:49	AK	n/a	n/a	VI2562
Run #2 [b]	I747965.D	1	05/13/22 15:37	AK	n/a	n/a	VI2559

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	5.0	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-47 (7-10)		
Lab Sample ID:	FA95287-21	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.72	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	96%	83-118%
17060-07-0	1,2-Dichloroethane-D4	97%	96%	79-125%
2037-26-5	Toluene-D8	99%	97%	85-112%
460-00-4	4-Bromofluorobenzene	101%	101%	83-118%

(a) Sample re-analyzed beyond hold time.
(b) Confirmation run.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-47 (17-20)		
Lab Sample ID:	FA95287-22	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	I748051.D	20000	05/17/22 17:13	AK	n/a	n/a	VI2562
Run #2 [b]	I747966.D	5000	05/13/22 16:01	AK	n/a	n/a	VI2559

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	500000	200000	ug/l	
71-43-2	Benzene	ND	20000	6200	ug/l	
75-27-4	Bromodichloromethane	ND	20000	4800	ug/l	
75-25-2	Bromoform	ND	20000	8100	ug/l	
78-93-3	2-Butanone (MEK)	ND	100000	40000	ug/l	
75-15-0	Carbon Disulfide	ND	40000	11000	ug/l	
56-23-5	Carbon Tetrachloride	ND	20000	7100	ug/l	
108-90-7	Chlorobenzene	ND	20000	4000	ug/l	
75-00-3	Chloroethane	ND	40000	13000	ug/l	
67-66-3	Chloroform	ND	20000	6000	ug/l	
110-82-7	Cyclohexane	ND	20000	7800	ug/l	
124-48-1	Dibromochloromethane	ND	20000	5500	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	100000	21000	ug/l	
106-93-4	1,2-Dibromoethane	ND	40000	5500	ug/l	
75-71-8	Dichlorodifluoromethane	ND	40000	10000	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	20000	6500	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	20000	4300	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	20000	5100	ug/l	
75-34-3	1,1-Dichloroethane	ND	20000	6800	ug/l	
107-06-2	1,2-Dichloroethane	ND	20000	6200	ug/l	
75-35-4	1,1-Dichloroethylene	ND	20000	6400	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	20000	5500	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	20000	4400	ug/l	
78-87-5	1,2-Dichloropropane	ND	20000	8500	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	20000	5800	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	20000	4300	ug/l	
100-41-4	Ethylbenzene	ND	20000	7100	ug/l	
76-13-1	Freon 113	ND	20000	9600	ug/l	
591-78-6	2-Hexanone	ND	200000	40000	ug/l	
98-82-8	Isopropylbenzene	ND	20000	4400	ug/l	
79-20-9	Methyl Acetate	ND	400000	100000	ug/l	
74-83-9	Methyl Bromide	ND	100000	40000	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-47 (17-20)		
Lab Sample ID:	FA95287-22	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	40000	10000	ug/l	
108-87-2	Methylcyclohexane	ND	20000	8700	ug/l	
75-09-2	Methylene Chloride	ND	100000	40000	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	100000	20000	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	20000	4600	ug/l	
100-42-5	Styrene	ND	20000	4400	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20000	6000	ug/l	
127-18-4	Tetrachloroethylene	ND	20000	4300	ug/l	
108-88-3	Toluene	ND	20000	6000	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	40000	10000	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	20000	5000	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	20000	9300	ug/l	
79-01-6	Trichloroethylene	790000	20000	6900	ug/l	
75-69-4	Trichlorofluoromethane	ND	40000	10000	ug/l	
75-01-4	Vinyl Chloride	ND	20000	8200	ug/l	
1330-20-7	Xylene (total)	ND	60000	14000	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%	97%	83-118%
17060-07-0	1,2-Dichloroethane-D4	95%	96%	79-125%
2037-26-5	Toluene-D8	99%	97%	85-112%
460-00-4	4-Bromofluorobenzene	101%	100%	83-118%

(a) Sample re-analyzed beyond hold time.
(b) Confirmation run.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-DUP01		
Lab Sample ID:	FA95287-23	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	I748052.D	50	05/17/22 17:37	AK	n/a	n/a	VI2562
Run #2 [b]	I747967.D	1	05/13/22 16:24	AK	n/a	n/a	VI2559

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	1300	500	ug/l	
71-43-2	Benzene	ND	50	16	ug/l	
75-27-4	Bromodichloromethane	ND	50	12	ug/l	
75-25-2	Bromoform	ND	50	20	ug/l	
78-93-3	2-Butanone (MEK)	ND	250	100	ug/l	
75-15-0	Carbon Disulfide	ND	100	27	ug/l	
56-23-5	Carbon Tetrachloride	ND	50	18	ug/l	
108-90-7	Chlorobenzene	ND	50	10	ug/l	
75-00-3	Chloroethane	ND	100	33	ug/l	
67-66-3	Chloroform	ND	50	15	ug/l	
110-82-7	Cyclohexane	ND	50	20	ug/l	
124-48-1	Dibromochloromethane	ND	50	14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	52	ug/l	
106-93-4	1,2-Dibromoethane	ND	100	14	ug/l	
75-71-8	Dichlorodifluoromethane	ND	100	25	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	50	16	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	50	11	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	50	13	ug/l	
75-34-3	1,1-Dichloroethane	ND	50	17	ug/l	
107-06-2	1,2-Dichloroethane	ND	50	16	ug/l	
75-35-4	1,1-Dichloroethylene	ND	50	16	ug/l	
156-59-2	cis-1,2-Dichloroethylene	2070	50	14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	50	11	ug/l	
78-87-5	1,2-Dichloropropane	ND	50	21	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	50	15	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	50	11	ug/l	
100-41-4	Ethylbenzene	ND	50	18	ug/l	
76-13-1	Freon 113	ND	50	24	ug/l	
591-78-6	2-Hexanone	ND	500	100	ug/l	
98-82-8	Isopropylbenzene	ND	50	11	ug/l	
79-20-9	Methyl Acetate	ND	1000	250	ug/l	
74-83-9	Methyl Bromide	ND	250	100	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-DUP01		
Lab Sample ID:	FA95287-23	**Date Sampled:**	04/29/22
Matrix:	AQ - Ground Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	100	25	ug/l	
108-87-2	Methylcyclohexane	ND	50	22	ug/l	
75-09-2	Methylene Chloride	ND	250	100	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	250	50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	50	11	ug/l	
100-42-5	Styrene	ND	50	11	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	15	ug/l	
127-18-4	Tetrachloroethylene	ND	50	11	ug/l	
108-88-3	Toluene	ND	50	15	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	100	25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	50	12	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	50	23	ug/l	
79-01-6	Trichloroethylene	ND	50	17	ug/l	
75-69-4	Trichlorofluoromethane	ND	100	25	ug/l	
75-01-4	Vinyl Chloride	438	50	20	ug/l	
1330-20-7	Xylene (total)	ND	150	36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	97%	83-118%
17060-07-0	1,2-Dichloroethane-D4	97%	97%	79-125%
2037-26-5	Toluene-D8	98%	98%	85-112%
460-00-4	4-Bromofluorobenzene	100%	99%	83-118%

(a) Sample re-analyzed beyond hold time.
(b) Confirmation run.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01		
Lab Sample ID:	FA95287-24	**Date Sampled:**	04/28/22
Matrix:	AQ - Trip Blank Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	5E32096.D	1	05/12/22 12:03	CF	n/a	n/a	V5E1471
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane [b]	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane [c]	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	5.0	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01		
Lab Sample ID:	FA95287-24	**Date Sampled:**	04/28/22
Matrix:	AQ - Trip Blank Water	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane [c]	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.72	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		83-118%
17060-07-0	1,2-Dichloroethane-D4	107%		79-125%
2037-26-5	Toluene-D8	98%		85-112%
460-00-4	4-Bromofluorobenzene	100%		83-118%

(a) Sample vial(s) contained bubbles greater than 6mm.
(b) Associated Initial Calibration invalid.
(c) Associated ICV outside control limits high, however sample ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

FA95287

SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

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SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: ARCADIS
Address: 10 Patewood Dr. Ste 375
City: Greenville State: SC Zip: 29615
Project Contact: Charles.Lawson@arcadis.com Email:
Phone #:
Sampler(s) Name(s) (Printed) Sampler 1: B Mayer Sampler 2:

Project Information

Project Name: Brenntag Charleston
Street: 4700 Azalea Dr.
City: North charleston State: SC
Project #
Fax #
Client Purchase Order # EM-042522

Analytical Information

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION: OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	VOCs 8260	LAB USE ONLY
1	A#3-40 (7-10)	4/28/22	1220	BM	GW	3			X							X	
2	A#3-40 (17-20)	4/28/22	1305	BM	GW	3			X							X	
3	A#3-39 (7-10)	4/28/22	1402	BM	GW	3			X							X	
4	A#3-39 (17-20)	4/28/22	1417	BM	GW	3			X							X	
5	A#3-37 (7-10)	4/28/22	1505	BM	GW	3			X							X	
6	A#3-37 (~~17-20~~ 15-18)	4/28/22	1532	BM	GW	3			X							X	
					~~GW~~	~~3~~											
7	A#3-38 (7-10)	4/28/22	1632	BM	GW	3			X							X	
8	A#3-38 (12-15)	4/28/22	1700	BM	GW	3			X							X	
9	A#3-44 (7-10)	4/28/22	1745	BM	GW	3			X							X	
10	A#3-44 (15-18)	4/28/22	1805	BM	GW	3			X							X	
11	A#3-41 (7-10)	4/28/22	1545	BM	GW	3			X							X	

Turnaround Time (Business days)

- 10 Day (Business) — Approved By: / Date:
- 7 Day
- 5 Day
- 3 Day *RUSH*
- 2 Day *RUSH*
- 1 Day *RUSH*
- Other

Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- COMMERCIAL "A" (RESULTS ONLY)
- COMMERCIAL "B" (RESULTS PLUS QC)
- REDT1 (EPA LEVEL 3)
- FULLT1 (EPA LEVEL 4)
- EDD'S

Comments / Remarks

INITIAL ASSESSMENT NS

LABEL VERIFICATION MM

Raleigh, NC Service Center

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1 B Mayer/Arcadis	4/29/22 1630	2 Fed Ex	3 4/30/22 915		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 4.0 CTK

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

FA95287: Chain of Custody
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FA95287

SGS North America Inc - Orlando
Chain of Custody

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TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 2 OF 3

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information | **Project Information** | **Analytical Information** | **Matrix Codes**

Company Name: | Project Name:
Address: | Street
City: State: Zip: | City State
Project Contact: Email: | Project #
Phone #: | Fax #
Sampler(s) Name(s) (Printed) Sampler 1: B. Meyers Sampler 2: | Client Purchase Order #

SEE PAGE 1

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	VOC 8260	LAB USE ONLY
12	A#3-41 (17-20)	4/28/22	1925	BM	GW	3			X							X	
13	A#3-42 (7-10)	4/29/22	0835	BM	GW	3			X							X	
14	A#3-42 (15-18)	4/29/22	0913	BM	GW	3			X							X	
15	A#3-43 (7-10)	4/29/22	1010	BM	GW	3			X							X	
16	A#3-43 (17-20)	4/29/22	1030	BM	GW	3			X							X	
17	A#3-45 (7-10)	4/29/22	1125	BM	GW	3			X							X	
18	A#3-45 (17-20)	4/29/22	1155	BM	GW	3			X							X	
19	A#3-46 (7-10)	4/29/22	1245	BM	GW	3			X							X	
20	A#3-46 (15-18)	4/29/22	1312	BM	GW	3			X							X	
21	A#3-47 (7-10)	4/29/22	1424	BM	GW	3			X							X	
22	A#3-47 (17-20)	4/29/22	1445	BM	GW	3			X							X	
23	A#3-DUP-01	4/29/22	—	BM	GW	3			X							X	

Turnaround Time (Business days)

10 Day (Business) | 7 Day | 5 Day | 3 Day *RUSH* | 2 Day *RUSH* | 1 Day *RUSH* | Other
Approved By: / Date:
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

A#3-DUP-01 is a Lina duplicate

Raleigh, NC Service Center

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		4/29/22 1630	2	3		4
	Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
	5		6	7		8

4/30/22 915

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

http://www.sgs.com/en/terms-and-conditions

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FA95287: Chain of Custody
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FA95287

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SGS - ORLANDO JOB # : PAGE 3 OF 3

SGS - ORLANDO Quote #	SKIFF #

Client / Reporting Information

Company Name:
Address:
City: State: Zip:
Project Contact: SEE PAGE 1 Email:
Phone #:
Sampler(s) Name(s) (Printed)
Sampler 1: B. Mayew Sampler 2:

Project Information

Project Name:
Street
City State
Project #
Fax #
Client Purchase Order #

Analytical Information

VOCs 8260 (Trip Blk)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LAB USE ONLY
24	TB-01	—	—	—	WW	2			X							

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Raleigh, NC Service Center

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

4/29/22 1630 — 4/30/22 915

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

SGS Sample Receipt Summary

Job Number: FA95287 **Client:** ARCADIS **Project:** BRENNTAG CHARLESTON

Date / Time Received: 4/30/2022 9:15:00 AM **Delivery Method:** FEDEX **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.4; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (4.0);

Cooler Temps (Corrected) °C: Cooler 1: (4.4);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☑		☐	☐
2. Trip Blank listed on COC	☑		☐	☐

	W	or	S	N/A
3. Type Of TB Received	☑		☐	☐

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☑		☐	☐
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments FOR SAMPLE #13, ID: "A#3-42 (7-10)", WE RECEIVED ONE VIAL WITH HEADSPACE.

SM001
Rev. Date 05/24/17

Technician: SAMUELM Date: 4/30/2022 9:15:00 AM Reviewer: _____ Date: _____

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

ARCADIS Geraghty & Miller

Brenntag; 4260 Azalea Dr, N Charleston, SC

SC000204.0011.00001

SGS Job Number: FA95280

Sampling Date: 04/29/22

Report to:

ARCADIS Geraghty & Miller
1450 Greene St Suite 220
Augusta, GA 30901
charles.lawson@arcadis.com; Edward.Hirshenson@arcadis.com

ATTN: Charles Lawson

Total number of pages in report: 75

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Evita Martinez 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

Test results relate only to samples analyzed.

Sections: 1 2 3 4 5 6 7 8 9

Table of Contents

Sample Summary

ARCADIS Geraghty & Miller

Job No: FA95280

Brenntag; 4260 Azalea Dr, N Charleston, SC
Project No: SC000204.0011.00001

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA95280-1	04/29/22	12:20	BM	04/30/22	SO	Soil	A3-45(5)-SOIL
FA95280-2	04/29/22	13:35	BM	04/30/22	SO	Soil	A3-46(5)-SOIL
FA95280-3	04/29/22	13:30	BM	04/30/22	SO	Soil	A3-46(5)-TCLP
FA95280-3L	04/29/22	13:30	BM	04/30/22	SO	Soil	A3-46(5)-TCLP
FA95280-4	04/29/22	00:00	BM	04/30/22	AQ	Trip Blank Soil	TB-01

This report contains results reported as ND = Not detected. The following applies:
Organics ND = Not detected above the MDL

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Summary of Hits

Job Number: FA95280
Account: ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC
Collected: 04/29/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
FA95280-1	**A3-45(5)-SOIL**					
Trichloroethylene		20.8	3.8	0.75	ug/kg	SW846 8260D
FA95280-2	**A3-46(5)-SOIL**					
1,1-Dichloroethylene		255 J	340	68	ug/kg	SW846 8260D
cis-1,2-Dichloroethylene		59200 J	140000	38000	ug/kg	SW846 8260D
trans-1,2-Dichloroethylene		1750	340	68	ug/kg	SW846 8260D
Ethylbenzene		88.5 J	340	68	ug/kg	SW846 8260D
Tetrachloroethylene [a]		28100 E	340	87	ug/kg	SW846 8260D
Trichloroethylene		18100000	1400000	270000	ug/kg	SW846 8260D
Vinyl Chloride		1660	340	68	ug/kg	SW846 8260D
Xylene (total)		433 J	1000	140	ug/kg	SW846 8260D
FA95280-3	**A3-46(5)-TCLP**					
No hits reported in this sample.						
FA95280-3L	**A3-46(5)-TCLP**					
Trichloroethylene		23.7	0.25	0.086	mg/l	SW846 8260D
FA95280-4	**TB-01**					
2-Butanone (MEK) [b]		2.2 JB	5.0	2.0	ug/l	SW846 8260D

(a) Compound below calibration range in higher dilution.
(b) Sample vial(s) contained bubbles greater than 6mm. Suspected instrument contaminant.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	A3-45(5)-SOIL		
Lab Sample ID:	FA95280-1	**Date Sampled:**	04/29/22
Matrix:	SO - Soil	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	92.6
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C17789.D	1	05/04/22 12:43	CV	n/a	n/a	V3C780
Run #2							

	Initial Weight	Final Volume
Run #1	7.19 g	5.0 ml
Run #2		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	150	75	ug/kg	
71-43-2	Benzene	ND	3.8	0.92	ug/kg	
75-27-4	Bromodichloromethane	ND	3.8	0.75	ug/kg	
75-25-2	Bromoform	ND	3.8	0.75	ug/kg	
78-93-3	2-Butanone (MEK)	ND	19	5.5	ug/kg	
75-15-0	Carbon Disulfide	ND	3.8	0.75	ug/kg	
56-23-5	Carbon Tetrachloride	ND	3.8	0.77	ug/kg	
108-90-7	Chlorobenzene	ND	3.8	0.75	ug/kg	
75-00-3	Chloroethane	ND	3.8	1.5	ug/kg	
67-66-3	Chloroform	ND	3.8	1.0	ug/kg	
110-82-7	Cyclohexane	ND	3.8	0.94	ug/kg	
124-48-1	Dibromochloromethane	ND	3.8	0.75	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.8	1.4	ug/kg	
106-93-4	1,2-Dibromoethane	ND	3.8	0.75	ug/kg	
75-71-8	Dichlorodifluoromethane [a]	ND	3.8	1.5	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	3.8	0.75	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	3.8	0.75	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	3.8	0.86	ug/kg	
75-34-3	1,1-Dichloroethane	ND	3.8	1.3	ug/kg	
107-06-2	1,2-Dichloroethane	ND	3.8	0.75	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	3.8	0.75	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	3.8	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	3.8	0.75	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.8	0.75	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.8	0.75	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.8	0.75	ug/kg	
100-41-4	Ethylbenzene	ND	3.8	0.75	ug/kg	
76-13-1	Freon 113	ND	3.8	0.99	ug/kg	
591-78-6	2-Hexanone	ND	19	5.6	ug/kg	
98-82-8	Isopropylbenzene	ND	3.8	0.75	ug/kg	
79-20-9	Methyl Acetate	ND	19	6.7	ug/kg	
74-83-9	Methyl Bromide	ND	3.8	1.5	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-45(5)-SOIL		
Lab Sample ID:	FA95280-1	**Date Sampled:**	04/29/22
Matrix:	SO - Soil	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	92.6
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride [a]	ND	3.8	1.5	ug/kg	
108-87-2	Methylcyclohexane	ND	3.8	1.3	ug/kg	
75-09-2	Methylene Chloride	ND	15	8.3	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	19	5.6	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	3.8	0.75	ug/kg	
100-42-5	Styrene	ND	3.8	0.75	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.8	0.75	ug/kg	
127-18-4	Tetrachloroethylene	ND	3.8	0.96	ug/kg	
108-88-3	Toluene	ND	15	7.5	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	3.8	0.75	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.8	0.75	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.8	0.75	ug/kg	
79-01-6	Trichloroethylene	20.8	3.8	0.75	ug/kg	
75-69-4	Trichlorofluoromethane	ND	3.8	1.5	ug/kg	
75-01-4	Vinyl Chloride	ND	3.8	0.75	ug/kg	
1330-20-7	Xylene (total)	ND	11	1.6	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		75-124%
17060-07-0	1,2-Dichloroethane-D4	102%		72-135%
2037-26-5	Toluene-D8	99%		75-126%
460-00-4	4-Bromofluorobenzene	102%		71-133%

(a) Associated BS recovery outside control limits low.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-46(5)-SOIL		
Lab Sample ID:	FA95280-2	**Date Sampled:**	04/29/22
Matrix:	SO - Soil	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	70.7
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C17790.D	1	05/04/22 13:08	CV	n/a	n/a	V3C780
Run #2	3C17849.D	10	05/06/22 16:48	CV	n/a	n/a	V3C781
Run #3	3C17887.D	100	05/10/22 10:50	CV	n/a	n/a	V3C783

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	7.47 g	5.0 ml	100 ul
Run #2	7.47 g	5.0 ml	2.5 ul
Run #3	7.47 g	5.0 ml	2.5 ul

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	14000	6800	ug/kg	
71-43-2	Benzene	ND	340	83	ug/kg	
75-27-4	Bromodichloromethane	ND	340	68	ug/kg	
75-25-2	Bromoform	ND	340	68	ug/kg	
78-93-3	2-Butanone (MEK)	ND	1700	490	ug/kg	
75-15-0	Carbon Disulfide	ND	340	68	ug/kg	
56-23-5	Carbon Tetrachloride	ND	340	69	ug/kg	
108-90-7	Chlorobenzene	ND	340	68	ug/kg	
75-00-3	Chloroethane	ND	340	140	ug/kg	
67-66-3	Chloroform	ND	340	91	ug/kg	
110-82-7	Cyclohexane	ND	340	85	ug/kg	
124-48-1	Dibromochloromethane	ND	340	68	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	340	130	ug/kg	
106-93-4	1,2-Dibromoethane	ND	340	68	ug/kg	
75-71-8	Dichlorodifluoromethane [a]	ND	340	140	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	340	68	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	340	68	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	340	78	ug/kg	
75-34-3	1,1-Dichloroethane	ND	340	120	ug/kg	
107-06-2	1,2-Dichloroethane	ND	340	68	ug/kg	
75-35-4	1,1-Dichloroethylene	255	340	68	ug/kg	J
156-59-2	cis-1,2-Dichloroethylene	59200 [b]	140000	38000	ug/kg	J
156-60-5	trans-1,2-Dichloroethylene	1750	340	68	ug/kg	
78-87-5	1,2-Dichloropropane	ND	340	68	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	340	68	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	340	68	ug/kg	
100-41-4	Ethylbenzene	88.5	340	68	ug/kg	J
76-13-1	Freon 113	ND	340	90	ug/kg	
591-78-6	2-Hexanone	ND	1700	510	ug/kg	
98-82-8	Isopropylbenzene	ND	340	68	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-46(5)-SOIL		
Lab Sample ID:	FA95280-2	**Date Sampled:**	04/29/22
Matrix:	SO - Soil	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	70.7
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-20-9	Methyl Acetate	ND	1700	610	ug/kg	
74-83-9	Methyl Bromide	ND	340	140	ug/kg	
74-87-3	Methyl Chloride [a]	ND	340	140	ug/kg	
108-87-2	Methylcyclohexane	ND	340	120	ug/kg	
75-09-2	Methylene Chloride	ND	1400	750	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	1700	510	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	340	68	ug/kg	
100-42-5	Styrene	ND	340	68	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	340	68	ug/kg	
127-18-4	Tetrachloroethylene [c]	28100	340	87	ug/kg	E
108-88-3	Toluene	ND	1400	680	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	340	68	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	340	68	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	340	68	ug/kg	
79-01-6	Trichloroethylene	18100000 [d]	1400000	270000	ug/kg	
75-69-4	Trichlorofluoromethane	ND	340	140	ug/kg	
75-01-4	Vinyl Chloride	1660	340	68	ug/kg	
1330-20-7	Xylene (total)	433	1000	140	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
1868-53-7	Dibromofluoromethane	98%	101%	98%	75-124%
17060-07-0	1,2-Dichloroethane-D4	103%	112%	105%	72-135%
2037-26-5	Toluene-D8	96%	97%	96%	75-126%
460-00-4	4-Bromofluorobenzene	96%	96%	96%	71-133%

(a) Associated BS recovery outside control limits low.
(b) Result is from Run# 2
(c) Compound below calibration range in higher dilution.
(d) Result is from Run# 3

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-46(5)-TCLP		
Lab Sample ID:	FA95280-3	**Date Sampled:**	04/29/22
Matrix:	SO - Soil	**Date Received:**	04/30/22
		Percent Solids:	76.5
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide, Total	< 0.14	0.14	mg/kg	1	05/12/22 10:20	GT	SW846 9012B
Solids, Percent	76.5		%	1	05/06/22 15:21	JB	SM19 2540G

RL = Reporting Limit

Report of Analysis

Client Sample ID:	A3-46(5)-TCLP		
Lab Sample ID:	FA95280-3L	**Date Sampled:**	04/29/22
Matrix:	SO - Soil	**Date Received:**	04/30/22
Method:	SW846 8260D SW846 1311	**Percent Solids:**	76.5
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I747762.D	250	05/09/22 23:36	AK	05/03/22 10:00	OP91025	VI2551
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP List **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.25	0.078	mg/l	
78-93-3	2-Butanone (MEK) [a]	ND	D035	200	1.3	0.50	mg/l	
56-23-5	Carbon Tetrachloride	ND	D019	0.50	0.25	0.089	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.25	0.050	mg/l	
67-66-3	Chloroform	ND	D022	6.0	0.25	0.075	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.25	0.064	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.25	0.078	mg/l	
75-35-4	1,1-Dichloroethylene	ND	D029	0.70	0.25	0.081	mg/l	
127-18-4	Tetrachloroethylene	ND	D039	0.70	0.25	0.054	mg/l	
79-01-6	Trichloroethylene	23.7	D040	0.50	0.25	0.086	mg/l	
75-01-4	Vinyl Chloride	ND	D043	0.20	0.25	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		83-118%
17060-07-0	1,2-Dichloroethane-D4	109%		79-125%
2037-26-5	Toluene-D8	103%		85-112%
460-00-4	4-Bromofluorobenzene	100%		83-118%

(a) Associated CCV outside control limits high, sample is ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-46(5)-TCLP		
Lab Sample ID:	FA95280-3L	**Date Sampled:**	04/29/22
Matrix:	SO - Soil	**Date Received:**	04/30/22
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	76.5
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X081354.D	1	05/05/22 19:16	WH	05/05/22 08:18	OP91083	SX3253
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP List **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.050	0.0056	mg/l	
	3&4-Methylphenol	ND	D024	200	0.050	0.0098	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.25	0.050	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.0074	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0075	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.050	0.0050	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.050	0.0081	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.050	0.0069	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.050	0.0050	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.016	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.050	0.0093	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.10	0.020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	39%		14-67%
4165-62-2	Phenol-d5	27%		10-50%
118-79-6	2,4,6-Tribromophenol	67%		33-118%
4165-60-0	Nitrobenzene-d5	63%		42-108%
321-60-8	2-Fluorobiphenyl	72%		40-106%
1718-51-0	Terphenyl-d14	87%		39-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-46(5)-TCLP		
Lab Sample ID:	FA95280-3L	**Date Sampled:**	04/29/22
Matrix:	SO - Soil	**Date Received:**	04/30/22
Method:	SW846 8151A SW846 3510C	**Percent Solids:**	76.5
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC082309.D	1	05/09/22 14:22	AF	05/07/22 08:00	OP91112	GCC2086
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	5.0 ml
Run #2		

Herbicide TCLP List **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D	ND	D016	10	0.050	0.017	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0050	0.0013	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	51%		39-135%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-46(5)-TCLP		
Lab Sample ID:	FA95280-3L	**Date Sampled:**	04/29/22
Matrix:	SO - Soil	**Date Received:**	04/30/22
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	76.5
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ST161591.D	1	05/09/22 17:50	WH	05/07/22 11:30	OP91111	GST3932
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	5.0 ml
Run #2		

Pesticide TCLP List **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.00010	0.000022	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0010	0.00038	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.00020	0.000021	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.00010	0.000026	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.00010	0.000020	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00020	0.000050	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0050	0.0021	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	110%		42-127%
2051-24-3	Decachlorobiphenyl	82%		27-127%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A3-46(5)-TCLP		
Lab Sample ID:	FA95280-3L	**Date Sampled:**	04/29/22
Matrix:	SO - Soil	**Date Received:**	04/30/22
		Percent Solids:	76.5
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.10	D004	5.0	0.10	mg/l	1	05/10/22	05/11/22	LM	SW846 6010D [2]	SW846 3010A [4]
Barium	< 2.0	D005	100	2.0	mg/l	1	05/10/22	05/11/22	LM	SW846 6010D [2]	SW846 3010A [4]
Cadmium	< 0.050	D006	1.0	0.050	mg/l	1	05/10/22	05/11/22	LM	SW846 6010D [2]	SW846 3010A [4]
Chromium	< 0.10	D007	5.0	0.10	mg/l	1	05/10/22	05/11/22	LM	SW846 6010D [2]	SW846 3010A [4]
Lead	< 0.050	D008	5.0	0.050	mg/l	1	05/10/22	05/11/22	LM	SW846 6010D [2]	SW846 3010A [4]
Mercury	< 0.0050	D009	0.20	0.0050	mg/l	1	05/03/22	05/03/22	LM	SW846 7470A [1]	SW846 7470A [3]
Selenium	< 0.10	D010	1.0	0.10	mg/l	1	05/10/22	05/11/22	LM	SW846 6010D [2]	SW846 3010A [4]
Silver	< 0.10	D011	5.0	0.10	mg/l	1	05/10/22	05/11/22	LM	SW846 6010D [2]	SW846 3010A [4]

(1) Instrument QC Batch: MA18649
(2) Instrument QC Batch: MA18667
(3) Prep QC Batch: MP40641
(4) Prep QC Batch: MP40674

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Report of Analysis

Client Sample ID:	TB-01		
Lab Sample ID:	FA95280-4	**Date Sampled:**	04/29/22
Matrix:	AQ - Trip Blank Soil	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	O68309.D	1	05/13/22 13:14	JL	n/a	n/a	VO2708
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
78-93-3	2-Butanone (MEK) [b]	2.2	5.0	2.0	ug/l	JB
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane [c]	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene [d]	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide [c]	ND	5.0	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01		
Lab Sample ID:	FA95280-4	**Date Sampled:**	04/29/22
Matrix:	AQ - Trip Blank Soil	**Date Received:**	04/30/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Brenntag; 4260 Azalea Dr, N Charleston, SC		

VOA TCL 4.2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane [c]	ND	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.72	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		83-118%
17060-07-0	1,2-Dichloroethane-D4	100%		79-125%
2037-26-5	Toluene-D8	95%		85-112%
460-00-4	4-Bromofluorobenzene	97%		83-118%

(a) Sample vial(s) contained bubbles greater than 6mm.
(b) Suspected instrument contaminant.
(c) Associated CCV outside control limits high, sample is ND.
(d) Associated BS recovery outside control limits high, sample is ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

FA95280

SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information
Company Name: ARCADIS
Address: 10 Patewood Dr. Ste 375
City: Greenville State: SC Zip: 2965
Project Contact: Email: Charles.Lawson@arcadis.com
Phone #:
Sampler(s) Name(s) (Printed) Sampler 1: B. Mayerd Sampler 2:

Project Information
Project Name: Brenntag Charleston
Street: 4260 Azalea Dr.
City: North Charleston State: SC
Project #
Fax #
Client Purchase Order #: EM-042522

Analytical Information: VOC 8260; TCLP FULL, CW; VOC 8260 (trip blank)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	Date	Time	Sampled By	Matrix	Total # of Bottles	Other	None	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI Water	MeOH	VOC 8260	TCLP FULL, CW	VOC 8260 (trip blank)	LAB USE ONLY
1	A#3-45(S)-SOIL	4/19/22	1220	BM	SO	4		X						X	X	X			
2	A#3-46(S)-SOIL	4/19/22	1335	BM	SO	4		X						X	X	X			
3	A#3-46(S)-TCLP	4/19/22	1330	BM	SO	5		X									X		
4	TB-01	–	–	–	WW	2			X									X	

Turnaround Time (Business days)
- (10 Day (Business)) — circled
- 7 Day
- 5 Day
- 3 Day *RUSH*
- 2 Day *RUSH*
- 1 Day *RUSH*
- Other

Approved By: / Date:

Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information
- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks
INITIAL ASSESSMENT
LABEL VERIFICATION
Raleigh, NC Service Center

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1 [signature] ARCADIS	4/19/22 1630	2 [signature] 4/30/22 915	3		4
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 4.8 CT [illegible]

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

FA95280: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: FA95280 **Client:** ARCADIS **Project:** BRENNTAG CHARLESTON

Date / Time Received: 4/30/2022 9:15:00 AM **Delivery Method:** FEDEX **Airbill #'s:** 5707 9049 5432

Therm ID: IR 1; **Therm CF:** 0.4; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (4.8);

Cooler Temps (Corrected) °C: Cooler 1: (5.2);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments FROZEN @ 04/30/22 // 1300.

SM001
Rev. Date 05/24/17

Technician: SAMUELM Date: 4/30/2022 9:15:00 AM Reviewer: _____ Date: _____

FA95280: Chain of Custody
Page 2 of 2

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C780-MB	3C17784.D	1	05/04/22	CV	n/a	n/a	V3C780

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-1, FA95280-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	200	100	ug/kg	
71-43-2	Benzene	ND	5.0	1.2	ug/kg	
75-27-4	Bromodichloromethane	ND	5.0	1.0	ug/kg	
75-25-2	Bromoform	ND	5.0	1.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	25	7.3	ug/kg	
75-15-0	Carbon Disulfide	ND	5.0	1.0	ug/kg	
56-23-5	Carbon Tetrachloride	ND	5.0	1.0	ug/kg	
108-90-7	Chlorobenzene	ND	5.0	1.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	2.0	ug/kg	
67-66-3	Chloroform	ND	5.0	1.3	ug/kg	
110-82-7	Cyclohexane	ND	5.0	1.3	ug/kg	
124-48-1	Dibromochloromethane	ND	5.0	1.0	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.9	ug/kg	
106-93-4	1,2-Dibromoethane	ND	5.0	1.0	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	2.0	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	5.0	1.0	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	5.0	1.0	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	5.0	1.2	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.0	1.8	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.0	1.0	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.0	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.0	1.4	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.0	1.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	1.0	ug/kg	
76-13-1	Freon 113	ND	5.0	1.3	ug/kg	
591-78-6	2-Hexanone	ND	25	7.5	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	1.0	ug/kg	
79-20-9	Methyl Acetate	19.0	25	8.9	ug/kg	J
74-83-9	Methyl Bromide	ND	5.0	2.0	ug/kg	
74-87-3	Methyl Chloride	ND	5.0	2.0	ug/kg	
108-87-2	Methylcyclohexane	ND	5.0	1.7	ug/kg	
75-09-2	Methylene Chloride	ND	20	11	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	25	7.5	ug/kg	

Method Blank Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C780-MB	3C17784.D	1	05/04/22	CV	n/a	n/a	V3C780

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-1, FA95280-2

CAS No.	Compound	Result	RL	MDL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	5.0	1.0	ug/kg	
100-42-5	Styrene	ND	5.0	1.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	1.0	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.0	1.3	ug/kg	
108-88-3	Toluene	ND	20	10	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.0	1.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.0	1.0	ug/kg	
79-01-6	Trichloroethylene	ND	5.0	1.0	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	2.0	ug/kg	
75-01-4	Vinyl Chloride	ND	5.0	1.0	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	92%	75-124%
17060-07-0	1,2-Dichloroethane-D4	98%	72-135%
2037-26-5	Toluene-D8	98%	75-126%
460-00-4	4-Bromofluorobenzene	100%	71-133%

Method Blank Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C781-MB	3C17829.D	1	05/06/22	CV	n/a	n/a	V3C781

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-2

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	ND	5.0	1.4	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	75-124%
17060-07-0	1,2-Dichloroethane-D4	102%	72-135%
2037-26-5	Toluene-D8	98%	75-126%
460-00-4	4-Bromofluorobenzene	97%	71-133%

Method Blank Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C783-MB	3C17886.D	1	05/10/22	CV	n/a	n/a	V3C783

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-2

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	5.0	1.0	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	75-124%
17060-07-0	1,2-Dichloroethane-D4	104%	72-135%
2037-26-5	Toluene-D8	98%	75-126%
460-00-4	4-Bromofluorobenzene	95%	71-133%

Method Blank Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VO2708-MB	O68307.D	1	05/13/22	JL	n/a	n/a	VO2708

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
78-93-3	2-Butanone (MEK)	4.1	5.0	2.0	ug/l	J
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	5.0	2.0	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	

Method Blank Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VO2708-MB	O68307.D	1	05/13/22	JL	n/a	n/a	VO2708

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-4

CAS No.	Compound	Result	RL	MDL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.72	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	79-125%
2037-26-5	Toluene-D8	96%	85-112%
460-00-4	4-Bromofluorobenzene	96%	83-118%

Leachate Blank Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91025-LB	C0155993.D	10	05/06/22	CV	05/03/22	OP91025	VC6277

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-3L

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	10	3.1	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	20	ug/l	
56-23-5	Carbon Tetrachloride	ND	10	3.6	ug/l	
108-90-7	Chlorobenzene	ND	10	2.0	ug/l	
67-66-3	Chloroform	ND	10	3.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	2.6	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	3.1	ug/l	
75-35-4	1,1-Dichloroethylene	ND	10	3.2	ug/l	
127-18-4	Tetrachloroethylene	ND	10	2.2	ug/l	
79-01-6	Trichloroethylene	ND	10	3.5	ug/l	
75-01-4	Vinyl Chloride	ND	10	4.1	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	79-125%
2037-26-5	Toluene-D8	94%	85-112%
460-00-4	4-Bromofluorobenzene	99%	83-118%

Leachate Blank Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91025-LB	I747759.D	10	05/09/22	AK	05/03/22	OP91025	VI2551

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-3L

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	10	3.1	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	20	ug/l	
56-23-5	Carbon Tetrachloride	ND	10	3.6	ug/l	
108-90-7	Chlorobenzene	ND	10	2.0	ug/l	
67-66-3	Chloroform	ND	10	3.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	2.6	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	3.1	ug/l	
75-35-4	1,1-Dichloroethylene	ND	10	3.2	ug/l	
127-18-4	Tetrachloroethylene	ND	10	2.2	ug/l	
79-01-6	Trichloroethylene	ND	10	3.5	ug/l	
75-01-4	Vinyl Chloride	ND	10	4.1	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	98%	83-118%
17060-07-0	1,2-Dichloroethane-D4	108%	79-125%
2037-26-5	Toluene-D8	103%	85-112%
460-00-4	4-Bromofluorobenzene	99%	83-118%

Blank Spike Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C780-BS	3C17782.D	1	05/04/22	CV	n/a	n/a	V3C780

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-1, FA95280-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	250	228	91	61-152
71-43-2	Benzene	50	49.2	98	76-126
75-27-4	Bromodichloromethane	50	50.7	101	74-130
75-25-2	Bromoform	50	48.5	97	76-127
78-93-3	2-Butanone (MEK)	250	241	96	75-137
75-15-0	Carbon Disulfide	50	43.3	87	72-122
56-23-5	Carbon Tetrachloride	50	45.4	91	78-133
108-90-7	Chlorobenzene	50	50.6	101	81-129
75-00-3	Chloroethane	50	40.1	80	68-133
67-66-3	Chloroform	50	45.0	90	72-123
110-82-7	Cyclohexane	50	49.8	100	73-126
124-48-1	Dibromochloromethane	50	51.4	103	76-127
96-12-8	1,2-Dibromo-3-chloropropane	50	46.0	92	70-137
106-93-4	1,2-Dibromoethane	50	51.1	102	77-126
75-71-8	Dichlorodifluoromethane	50	26.8	54*	68-168
95-50-1	1,2-Dichlorobenzene	50	53.2	106	80-129
541-73-1	1,3-Dichlorobenzene	50	53.9	108	81-129
106-46-7	1,4-Dichlorobenzene	50	53.6	107	76-130
75-34-3	1,1-Dichloroethane	50	46.9	94	73-125
107-06-2	1,2-Dichloroethane	50	46.2	92	74-128
75-35-4	1,1-Dichloroethylene	50	43.5	87	81-136
156-59-2	cis-1,2-Dichloroethylene	50	46.8	94	74-126
156-60-5	trans-1,2-Dichloroethylene	50	46.6	93	70-127
78-87-5	1,2-Dichloropropane	50	49.9	100	74-125
10061-01-5	cis-1,3-Dichloropropene	50	53.1	106	80-123
10061-02-6	trans-1,3-Dichloropropene	50	53.8	108	75-131
100-41-4	Ethylbenzene	50	52.6	105	77-123
76-13-1	Freon 113	50	48.5	97	71-129
591-78-6	2-Hexanone	250	265	106	72-133
98-82-8	Isopropylbenzene	50	53.3	107	80-136
79-20-9	Methyl Acetate	250	241	96	67-137
74-83-9	Methyl Bromide	50	43.6	87	65-139
74-87-3	Methyl Chloride	50	33.6	67*	71-144
108-87-2	Methylcyclohexane	50	54.7	109	75-128
75-09-2	Methylene Chloride	50	43.9	88	74-137
108-10-1	4-Methyl-2-pentanone (MIBK)	250	254	102	76-132

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C780-BS	3C17782.D	1	05/04/22	CV	n/a	n/a	V3C780

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-1, FA95280-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	50	50.3	101	77-120
100-42-5	Styrene	50	54.7	109	78-125
79-34-5	1,1,2,2-Tetrachloroethane	50	52.9	106	71-126
127-18-4	Tetrachloroethylene	50	54.5	109	79-130
108-88-3	Toluene	50	50.6	101	76-124
120-82-1	1,2,4-Trichlorobenzene	50	57.9	116	78-130
71-55-6	1,1,1-Trichloroethane	50	42.9	86	70-129
79-00-5	1,1,2-Trichloroethane	50	53.3	107	74-124
79-01-6	Trichloroethylene	50	49.6	99	75-128
75-69-4	Trichlorofluoromethane	50	45.7	91	73-145
75-01-4	Vinyl Chloride	50	39.8	80	76-141
1330-20-7	Xylene (total)	150	157	105	80-129

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	95%	75-124%
17060-07-0	1,2-Dichloroethane-D4	93%	72-135%
2037-26-5	Toluene-D8	100%	75-126%
460-00-4	4-Bromofluorobenzene	99%	71-133%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C781-BS [a]	3C17827.D	1	05/06/22	CV	n/a	n/a	V3C781

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
156-59-2	cis-1,2-Dichloroethylene	50	44.6	89	74-126

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	75-124%
17060-07-0	1,2-Dichloroethane-D4	97%	72-135%
2037-26-5	Toluene-D8	98%	75-126%
460-00-4	4-Bromofluorobenzene	99%	71-133%

(a) No MSD available for this run.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI2551-BS	I747756.D	10	05/09/22	AK	n/a	n/a	VI2551

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-3L

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	250	297	119	81-122
78-93-3	2-Butanone (MEK)	1250	1550	124	56-143
56-23-5	Carbon Tetrachloride	250	267	107	76-136
108-90-7	Chlorobenzene	250	274	110	82-124
67-66-3	Chloroform	250	269	108	80-124
106-46-7	1,4-Dichlorobenzene	250	259	104	78-120
107-06-2	1,2-Dichloroethane	250	296	118	75-125
75-35-4	1,1-Dichloroethylene	250	299	120	78-137
127-18-4	Tetrachloroethylene	250	278	111	76-135
79-01-6	Trichloroethylene	250	282	113	81-126
75-01-4	Vinyl Chloride	250	303	121	69-159

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	83-118%
17060-07-0	1,2-Dichloroethane-D4	111%	79-125%
2037-26-5	Toluene-D8	105%	85-112%
460-00-4	4-Bromofluorobenzene	95%	83-118%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C783-BS	3C17884.D	1	05/10/22	CV	n/a	n/a	V3C783

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
79-01-6	Trichloroethylene	50	51.6	103	75-128

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	75-124%
17060-07-0	1,2-Dichloroethane-D4	100%	72-135%
2037-26-5	Toluene-D8	98%	75-126%
460-00-4	4-Bromofluorobenzene	98%	71-133%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VO2708-BS	O68305.D	1	05/13/22	JL	n/a	n/a	VO2708

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	149	119	50-147
71-43-2	Benzene	25	30.1	120	81-122
75-27-4	Bromodichloromethane	25	28.9	116	79-123
75-25-2	Bromoform	25	27.1	108	66-123
78-93-3	2-Butanone (MEK)	125	133	106	56-143
75-15-0	Carbon Disulfide	25	26.6	106	66-148
56-23-5	Carbon Tetrachloride	25	30.7	123	76-136
108-90-7	Chlorobenzene	25	28.6	114	82-124
75-00-3	Chloroethane	25	23.2	93	62-144
67-66-3	Chloroform	25	29.0	116	80-124
110-82-7	Cyclohexane	25	28.7	115	73-138
124-48-1	Dibromochloromethane	25	28.1	112	78-122
96-12-8	1,2-Dibromo-3-chloropropane	25	27.1	108	64-123
106-93-4	1,2-Dibromoethane	25	28.5	114	75-120
75-71-8	Dichlorodifluoromethane	25	24.3	97	42-167
95-50-1	1,2-Dichlorobenzene	25	29.2	117	82-124
541-73-1	1,3-Dichlorobenzene	25	29.7	119	84-125
106-46-7	1,4-Dichlorobenzene	25	28.2	113	78-120
75-34-3	1,1-Dichloroethane	25	30.2	121	81-122
107-06-2	1,2-Dichloroethane	25	29.9	120	75-125
75-35-4	1,1-Dichloroethylene	25	31.1	124	78-137
156-59-2	cis-1,2-Dichloroethylene	25	28.3	113	78-120
156-60-5	trans-1,2-Dichloroethylene	25	30.3	121	76-127
78-87-5	1,2-Dichloropropane	25	29.2	117	76-124
10061-01-5	cis-1,3-Dichloropropene	25	30.3	121*	75-118
10061-02-6	trans-1,3-Dichloropropene	25	29.8	119	80-120
100-41-4	Ethylbenzene	25	28.7	115	81-121
76-13-1	Freon 113	25	29.9	120	72-134
591-78-6	2-Hexanone	125	125	100	61-129
98-82-8	Isopropylbenzene	25	29.0	116	83-132
79-20-9	Methyl Acetate	125	132	106	65-126
74-83-9	Methyl Bromide	25	28.9	116	59-143
74-87-3	Methyl Chloride	25	24.6	98	50-159
108-87-2	Methylcyclohexane	25	29.2	117	76-129
75-09-2	Methylene Chloride	25	27.0	108	69-135
108-10-1	4-Methyl-2-pentanone (MIBK)	125	123	98	66-122

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VO2708-BS	O68305.D	1	05/13/22	JL	n/a	n/a	VO2708

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	25	28.3	113	72-117
100-42-5	Styrene	25	28.3	113	78-119
79-34-5	1,1,2,2-Tetrachloroethane	25	28.0	112	72-120
127-18-4	Tetrachloroethylene	25	29.1	116	76-135
108-88-3	Toluene	25	28.8	115	80-120
120-82-1	1,2,4-Trichlorobenzene	25	30.5	122	73-129
71-55-6	1,1,1-Trichloroethane	25	28.7	115	75-130
79-00-5	1,1,2-Trichloroethane	25	27.7	111	76-119
79-01-6	Trichloroethylene	25	29.0	116	81-126
75-69-4	Trichlorofluoromethane	25	28.7	115	71-156
75-01-4	Vinyl Chloride	25	24.6	98	69-159
1330-20-7	Xylene (total)	75	86.0	115	80-126

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	83-118%
17060-07-0	1,2-Dichloroethane-D4	102%	79-125%
2037-26-5	Toluene-D8	98%	85-112%
460-00-4	4-Bromofluorobenzene	100%	83-118%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA95310-1MS	3C17851.D	1	05/06/22	CV	n/a	n/a	V3C781
FA95310-1	3C17834.D	1	05/06/22	CV	n/a	n/a	V3C781

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-2

CAS No.	Compound	FA95310-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Limits
156-59-2	cis-1,2-Dichloroethylene	5.5	U	53.6	36.0	67*	74-126

CAS No.	Surrogate Recoveries	MS	FA95310-1	Limits
1868-53-7	Dibromofluoromethane	101%	102%	75-124%
17060-07-0	1,2-Dichloroethane-D4	107%	110%	72-135%
2037-26-5	Toluene-D8	95%	96%	75-126%
460-00-4	4-Bromofluorobenzene	97%	96%	71-133%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA95248-1MS	3C17805.D	1	05/04/22	CV	n/a	n/a	V3C780
FA95248-1MSD	3C17806.D	1	05/04/22	CV	n/a	n/a	V3C780
FA95248-1	3C17785.D	1	05/04/22	CV	n/a	n/a	V3C780

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-1, FA95280-2

CAS No.	Compound	FA95248-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	180	U	276	188	68	267	189	71	1	61-152/27
71-43-2	Benzene	4.5	U	55.1	41.0	74*	53.4	39.2	73*	4	76-126/26
75-27-4	Bromodichloromethane	4.5	U	55.1	38.4	70*	53.4	34.9	65*	10	74-130/25
75-25-2	Bromoform	4.5	U	55.1	31.4	57*	53.4	28.2	53*	11	76-127/26
78-93-3	2-Butanone (MEK)	23	U	276	196	71*	267	194	73*	1	75-137/25
75-15-0	Carbon Disulfide	4.5	U	55.1	35.4	64*	53.4	34.7	65*	2	72-122/29
56-23-5	Carbon Tetrachloride	4.5	U	55.1	38.8	70*	53.4	37.3	70*	4	78-133/29
108-90-7	Chlorobenzene	4.5	U	55.1	38.4	70*	53.4	36.1	68*	6	81-129/29
75-00-3	Chloroethane	4.5	U	55.1	34.3	62*	53.4	32.1	60*	7	68-133/29
67-66-3	Chloroform	4.5	U	55.1	37.0	67*	53.4	35.3	66*	5	72-123/26
110-82-7	Cyclohexane	4.5	U	55.1	42.9	78	53.4	41.5	78	3	73-126/32
124-48-1	Dibromochloromethane	4.5	U	55.1	35.7	65*	53.4	32.3	60*	10	76-127/27
96-12-8	1,2-Dibromo-3-chloropropane	4.5	U	55.1	31.0	56*	53.4	28.3	53*	9	70-137/29
106-93-4	1,2-Dibromoethane	4.5	U	55.1	37.3	68*	53.4	33.8	63*	10	77-126/26
75-71-8	Dichlorodifluoromethane	4.5	U	55.1	16.5	30*	53.4	15.8	30*	4	68-168/29
95-50-1	1,2-Dichlorobenzene	4.5	U	55.1	31.8	58*	53.4	27.8	52*	13	80-129/32
541-73-1	1,3-Dichlorobenzene	4.5	U	55.1	33.7	61*	53.4	30.0	56*	12	81-129/33
106-46-7	1,4-Dichlorobenzene	4.5	U	55.1	32.9	60*	53.4	29.4	55*	11	76-130/32
75-34-3	1,1-Dichloroethane	4.5	U	55.1	40.0	73	53.4	38.0	71*	5	73-125/27
107-06-2	1,2-Dichloroethane	4.5	U	55.1	35.5	64*	53.4	32.9	62*	8	74-128/23
75-35-4	1,1-Dichloroethylene	4.5	U	55.1	38.8	70*	53.4	37.8	71*	3	81-136/28
156-59-2	cis-1,2-Dichloroethylene	4.5	U	55.1	39.0	71*	53.4	36.6	69*	6	74-126/26
156-60-5	trans-1,2-Dichloroethylene	4.5	U	55.1	40.2	73	53.4	38.4	72	5	70-127/27
78-87-5	1,2-Dichloropropane	4.5	U	55.1	40.0	73*	53.4	37.1	69*	8	74-125/25
10061-01-5	cis-1,3-Dichloropropene	4.5	U	55.1	39.7	72*	53.4	35.8	67*	10	80-123/26
10061-02-6	trans-1,3-Dichloropropene	4.5	U	55.1	38.1	69*	53.4	35.0	66*	8	75-131/28
100-41-4	Ethylbenzene	4.5	U	55.1	40.9	74*	53.4	38.3	72*	7	77-123/31
76-13-1	Freon 113	4.5	U	55.1	45.1	82	53.4	44.2	83	2	71-129/30
591-78-6	2-Hexanone	23	U	276	211	77	267	204	76	3	72-133/26
98-82-8	Isopropylbenzene	4.5	U	55.1	39.5	72*	53.4	37.1	69*	6	80-136/32
79-20-9	Methyl Acetate	23	U	276	224	81	267	222	83	1	67-137/30
74-83-9	Methyl Bromide	4.5	U	55.1	33.7	61*	53.4	32.8	61*	3	65-139/31
74-87-3	Methyl Chloride	4.5	U	55.1	24.6	45*	53.4	23.5	44*	5	71-144/27
108-87-2	Methylcyclohexane	4.5	U	55.1	44.5	81	53.4	42.6	80	4	75-128/31
75-09-2	Methylene Chloride	18	U	55.1	41.5	75	53.4	38.4	72*	8	74-137/28
108-10-1	4-Methyl-2-pentanone (MIBK)	23	U	276	197	71*	267	189	71*	4	76-132/26

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA95248-1MS	3C17805.D	1	05/04/22	CV	n/a	n/a	V3C780
FA95248-1MSD	3C17806.D	1	05/04/22	CV	n/a	n/a	V3C780
FA95248-1	3C17785.D	1	05/04/22	CV	n/a	n/a	V3C780

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-1, FA95280-2

CAS No.	Compound	FA95248-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
1634-04-4	Methyl Tert Butyl Ether	4.5 U		55.1	37.1	67*	53.4	34.4	64*	8	77-120/24
100-42-5	Styrene	4.5 U		55.1	39.9	72*	53.4	35.8	67*	11	78-125/30
79-34-5	1,1,2,2-Tetrachloroethane	4.5 U		55.1	38.4	70*	53.4	35.4	66*	8	71-126/30
127-18-4	Tetrachloroethylene	4.5 U		55.1	40.4	73*	53.4	38.8	73*	4	79-130/31
108-88-3	Toluene	18 U		55.1	41.2	75*	53.4	38.6	72*	7	76-124/30
120-82-1	1,2,4-Trichlorobenzene	4.5 U		55.1	23.0	42*	53.4	19.8	37*	15	78-130/34
71-55-6	1,1,1-Trichloroethane	4.5 U		55.1	38.0	69*	53.4	36.7	69*	3	70-129/27
79-00-5	1,1,2-Trichloroethane	4.5 U		55.1	38.3	70*	53.4	35.8	67*	7	74-124/28
79-01-6	Trichloroethylene	4.5 U		55.1	47.3	86	53.4	44.7	84	6	75-128/27
75-69-4	Trichlorofluoromethane	4.5 U		55.1	41.9	76	53.4	40.5	76	3	73-145/31
75-01-4	Vinyl Chloride	4.5 U		55.1	32.2	58*	53.4	30.9	58*	4	76-141/27
1330-20-7	Xylene (total)	14 U		165	120	73*	160	112	70*	7	80-129/30

CAS No.	Surrogate Recoveries	MS	MSD	FA95248-1	Limits
1868-53-7	Dibromofluoromethane	98%	97%	95%	75-124%
17060-07-0	1,2-Dichloroethane-D4	100%	100%	103%	72-135%
2037-26-5	Toluene-D8	100%	99%	100%	75-126%
460-00-4	4-Bromofluorobenzene	100%	100%	101%	71-133%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA94792-4RMS [a]	I747774.D	10	05/10/22	AK	n/a	n/a	VI2551
FA94792-4RMSD [a]	I747775.D	10	05/10/22	AK	n/a	n/a	VI2551
FA94792-4R [a]	I747767.D	10	05/10/22	AK	05/03/22	OP91025	VI2551

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-3L

CAS No.	Compound	FA94792-4R ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	10 U		250	296	118	250	285	114	4	81-122/14
78-93-3	2-Butanone (MEK)	50 U		1250	1460	117	1250	1480	118	1	56-143/18
56-23-5	Carbon Tetrachloride	10 U		250	265	106	250	247	99	7	76-136/23
108-90-7	Chlorobenzene	10 U		250	271	108	250	259	104	5	82-124/14
67-66-3	Chloroform	10 U		250	276	110	250	261	104	6	80-124/15
106-46-7	1,4-Dichlorobenzene	10 U		250	256	102	250	245	98	4	78-120/15
107-06-2	1,2-Dichloroethane	10 U		250	299	120	250	280	112	7	75-125/14
75-35-4	1,1-Dichloroethylene	10 U		250	308	123	250	287	115	7	78-137/18
127-18-4	Tetrachloroethylene	10 U		250	254	102	250	243	97	4	76-135/16
79-01-6	Trichloroethylene	10 U		250	275	110	250	267	107	3	81-126/15
75-01-4	Vinyl Chloride	10 U		250	258	103	250	262	105	2	69-159/18

CAS No.	Surrogate Recoveries	MS	MSD	FA94792-4R Limits
1868-53-7	Dibromofluoromethane	103%	99%	96% 83-118%
17060-07-0	1,2-Dichloroethane-D4	114%	114%	110% 79-125%
2037-26-5	Toluene-D8	104%	106%	102% 85-112%
460-00-4	4-Bromofluorobenzene	97%	97%	101% 83-118%

(a) Sample was treated with an anti-foaming agent.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA95395-10MS	3C17907.D	1	05/10/22	CV	n/a	n/a	V3C783
FA95395-10MSD	3C17908.D	1	05/10/22	CV	n/a	n/a	V3C783
FA95395-10	3C17894.D	1	05/10/22	CV	n/a	n/a	V3C783

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-2

CAS No.	Compound	FA95395-10 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
79-01-6	Trichloroethylene	0.87	I	49.5	47.4	94	51	46.8	90	1	75-128/27

CAS No.	Surrogate Recoveries	MS	MSD	FA95395-10	Limits
1868-53-7	Dibromofluoromethane	98%	98%	94%	75-124%
17060-07-0	1,2-Dichloroethane-D4	96%	96%	100%	72-135%
2037-26-5	Toluene-D8	98%	97%	98%	75-126%
460-00-4	4-Bromofluorobenzene	99%	98%	99%	71-133%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA95296-11MS	O68328.D	1	05/14/22	JL	n/a	n/a	VO2708
FA95296-11MSD	O68329.D	1	05/14/22	JL	n/a	n/a	VO2708
FA95296-11 [a]	O68319.D	1	05/13/22	JL	n/a	n/a	VO2708

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-4

CAS No.	Compound	FA95296-11 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	25 U		125	104	83	125	127	102	20	50-147/21
71-43-2	Benzene	1.0 U		25	27.1	108	25	27.4	110	1	81-122/14
75-27-4	Bromodichloromethane	1.0 U		25	26.9	108	25	26.6	106	1	79-123/19
75-25-2	Bromoform	1.0 U		25	24.4	98	25	25.7	103	5	66-123/21
78-93-3	2-Butanone (MEK)	5.0 U		125	92.9	74	125	115	92	21*	56-143/18
75-15-0	Carbon Disulfide	2.0 U		25	24.0	96	25	23.7	95	1	66-148/23
56-23-5	Carbon Tetrachloride	1.0 U		25	28.8	115	25	28.4	114	1	76-136/23
108-90-7	Chlorobenzene	1.0 U		25	25.9	104	25	26.3	105	2	82-124/14
75-00-3	Chloroethane	2.0 U		25	28.5	114	25	25.7	103	10	62-144/20
67-66-3	Chloroform	1.0 U		25	26.1	104	25	26.2	105	0	80-124/15
110-82-7	Cyclohexane	1.0 U		25	25.1	100	25	25.3	101	1	73-138/18
124-48-1	Dibromochloromethane	1.0 U		25	25.8	103	25	25.8	103	0	78-122/19
96-12-8	1,2-Dibromo-3-chloropropane	5.0 U		25	19.9	80	25	24.7	99	22*	64-123/18
106-93-4	1,2-Dibromoethane	2.0 U		25	24.4	98	25	25.7	103	5	75-120/13
75-71-8	Dichlorodifluoromethane	2.0 U		25	25.4	102	25	25.6	102	1	42-167/19
95-50-1	1,2-Dichlorobenzene	1.0 U		25	25.7	103	25	26.7	107	4	82-124/14
541-73-1	1,3-Dichlorobenzene	1.0 U		25	26.1	104	25	27.1	108	4	84-125/14
106-46-7	1,4-Dichlorobenzene	1.0 U		25	25.5	102	25	25.9	104	2	78-120/15
75-34-3	1,1-Dichloroethane	1.0 U		25	27.2	109	25	27.6	110	1	81-122/15
107-06-2	1,2-Dichloroethane	1.0 U		25	26.6	106	25	26.9	108	1	75-125/14
75-35-4	1,1-Dichloroethylene	1.0 U		25	27.7	111	25	28.3	113	2	78-137/18
156-59-2	cis-1,2-Dichloroethylene	1.0 U		25	25.6	102	25	26.4	106	3	78-120/15
156-60-5	trans-1,2-Dichloroethylene	1.0 U		25	27.2	109	25	27.7	111	2	76-127/17
78-87-5	1,2-Dichloropropane	1.0 U		25	25.8	103	25	26.6	106	3	76-124/14
10061-01-5	cis-1,3-Dichloropropene	1.0 U		25	25.5	102	25	25.9	104	2	75-118/23
10061-02-6	trans-1,3-Dichloropropene	1.0 U		25	25.5	102	25	26.2	105	3	80-120/22
100-41-4	Ethylbenzene	1.0 U		25	25.5	102	25	26.1	104	2	81-121/14
76-13-1	Freon 113	1.0 U		25	26.4	106	25	26.5	106	0	72-134/20
591-78-6	2-Hexanone	10 U		125	89.3	71	125	111	89	22*	61-129/18
98-82-8	Isopropylbenzene	1.0 U		25	25.7	103	25	26.4	106	3	83-132/15
79-20-9	Methyl Acetate	20 U		125	86.4	69	125	105	84	19*	65-126/18
74-83-9	Methyl Bromide	5.0 U		25	26.2	105	25	26.0	104	1	59-143/19
74-87-3	Methyl Chloride	2.0 U		25	25.8	103	25	26.4	106	2	50-159/19
108-87-2	Methylcyclohexane	1.0 U		25	25.0	100	25	25.2	101	1	76-129/17
75-09-2	Methylene Chloride	5.0 U		25	24.9	100	25	23.6	94	5	69-135/16
108-10-1	4-Methyl-2-pentanone (MIBK)	5.0 U		125	92.3	74	125	112	90	19*	66-122/16

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA95296-11MS	O68328.D	1	05/14/22	JL	n/a	n/a	VO2708
FA95296-11MSD	O68329.D	1	05/14/22	JL	n/a	n/a	VO2708
FA95296-11 [a]	O68319.D	1	05/13/22	JL	n/a	n/a	VO2708

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-4

CAS No.	Compound	FA95296-11 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1634-04-4	Methyl Tert Butyl Ether	1.0	U	25	24.4	98	25	26.0	104	6	72-117/14
100-42-5	Styrene	1.0	U	25	24.8	99	25	25.2	101	2	78-119/23
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	25	22.5	90	25	25.6	102	13	72-120/14
127-18-4	Tetrachloroethylene	1.0	U	25	25.5	102	25	26.4	106	3	76-135/16
108-88-3	Toluene	1.0	U	25	26.2	105	25	26.7	107	2	80-120/14
120-82-1	1,2,4-Trichlorobenzene	2.0	U	25	25.8	103	25	26.9	108	4	73-129/20
71-55-6	1,1,1-Trichloroethane	1.0	U	25	26.3	105	25	27.0	108	3	75-130/16
79-00-5	1,1,2-Trichloroethane	1.0	U	25	24.1	96	25	25.9	104	7	76-119/14
79-01-6	Trichloroethylene	1.0	U	25	26.0	104	25	26.1	104	0	81-126/15
75-69-4	Trichlorofluoromethane	2.0	U	25	30.4	122	25	30.4	122	0	71-156/21
75-01-4	Vinyl Chloride	1.0	U	25	26.7	107	25	26.1	104	2	69-159/18
1330-20-7	Xylene (total)	3.0	U	75	76.3	102	75	78.5	105	3	80-126/15

CAS No.	Surrogate Recoveries	MS	MSD	FA95296-11	Limits
1868-53-7	Dibromofluoromethane	103%	103%	96%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	99%	102%	79-125%
2037-26-5	Toluene-D8	97%	99%	95%	85-112%
460-00-4	4-Bromofluorobenzene	100%	100%	96%	83-118%

(a) RR1x INST ERROR. ECC outside 12hr window

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA94792-1RDUP	I747764.D	10	05/10/22	AK	n/a	n/a	VI2551
FA94792-1R	I747763.D	10	05/09/22	AK	05/03/22	OP91025	VI2551

The QC reported here applies to the following samples: **Method:** SW846 8260D

FA95280-3L

CAS No.	Compound	FA94792-1R ug/l	Q	DUP ug/l	Q	RPD	Limits
71-43-2	Benzene	10 U		ND		nc	14
78-93-3	2-Butanone (MEK)	50 U		ND		nc	18
56-23-5	Carbon Tetrachloride	10 U		ND		nc	23
108-90-7	Chlorobenzene	10 U		ND		nc	14
67-66-3	Chloroform	10 U		ND		nc	15
106-46-7	1,4-Dichlorobenzene	10 U		ND		nc	15
107-06-2	1,2-Dichloroethane	10 U		ND		nc	14
75-35-4	1,1-Dichloroethylene	10 U		ND		nc	18
127-18-4	Tetrachloroethylene	10 U		ND		nc	16
79-01-6	Trichloroethylene	10 U		ND		nc	15
75-01-4	Vinyl Chloride	10 U		ND		nc	18

CAS No.	Surrogate Recoveries	DUP	FA94792-1R	Limits
1868-53-7	Dibromofluoromethane	98%	97%	83-118%
17060-07-0	1,2-Dichloroethane-D4	109%	109%	79-125%
2037-26-5	Toluene-D8	101%	104%	85-112%
460-00-4	4-Bromofluorobenzene	99%	98%	83-118%

* = Outside of Control Limits.

MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Leachate Blank Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91083-LB	X081353.D	1	05/05/22	WH	05/05/22	OP91083	SX3253

The QC reported here applies to the following samples: **Method:** SW846 8270E

FA95280-3L

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	50	5.6	ug/l	
	3&4-Methylphenol	ND	50	9.8	ug/l	
87-86-5	Pentachlorophenol	ND	250	50	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	50	7.4	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	50	7.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	50	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	50	8.1	ug/l	
118-74-1	Hexachlorobenzene	ND	50	6.9	ug/l	
87-68-3	Hexachlorobutadiene	ND	50	5.0	ug/l	
67-72-1	Hexachloroethane	ND	50	16	ug/l	
98-95-3	Nitrobenzene	ND	50	9.3	ug/l	
110-86-1	Pyridine	ND	100	20	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	33%	14-67%
4165-62-2	Phenol-d5	24%	10-50%
118-79-6	2,4,6-Tribromophenol	61%	33-118%
4165-60-0	Nitrobenzene-d5	55%	42-108%
321-60-8	2-Fluorobiphenyl	62%	40-106%
1718-51-0	Terphenyl-d14	90%	39-121%

Blank Spike Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91083-LBS	X081352.D	1	05/05/22	WH	05/05/22	OP91083	SX3253

The QC reported here applies to the following samples: **Method:** SW846 8270E

FA95280-3L

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-48-7	2-Methylphenol	500	269	54	43-90
	3&4-Methylphenol	1000	517	52	36-88
87-86-5	Pentachlorophenol	1000	686	69	61-115
95-95-4	2,4,5-Trichlorophenol	500	459	92	62-109
88-06-2	2,4,6-Trichlorophenol	500	442	88	59-107
106-46-7	1,4-Dichlorobenzene	500	318	64	45-98
121-14-2	2,4-Dinitrotoluene	500	449	90	61-110
118-74-1	Hexachlorobenzene	500	422	84	63-108
87-68-3	Hexachlorobutadiene	500	350	70	42-102
67-72-1	Hexachloroethane	500	299	60	42-100
98-95-3	Nitrobenzene	500	320	64	50-104
110-86-1	Pyridine	500	209	42	23-74

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	40%	14-67%
4165-62-2	Phenol-d5	29%	10-50%
118-79-6	2,4,6-Tribromophenol	74%	33-118%
4165-60-0	Nitrobenzene-d5	64%	42-108%
321-60-8	2-Fluorobiphenyl	74%	40-106%
1718-51-0	Terphenyl-d14	85%	39-121%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91083-MS	X081355.D	1	05/05/22	WH	05/05/22	OP91083	SX3253
OP91083-MSD	X081356.D	1	05/05/22	WH	05/05/22	OP91083	SX3253
FA95280-3L	X081354.D	1	05/05/22	WH	05/05/22	OP91083	SX3253

The QC reported here applies to the following samples: **Method:** SW846 8270E

FA95280-3L

CAS No.	Compound	FA95280-3L ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-48-7	2-Methylphenol	ND		500	272	54	500	363	73	29*	43-90/28
	3&4-Methylphenol	ND		1000	516	52	1000	730	73	34*	36-88/28
87-86-5	Pentachlorophenol	ND		1000	704	70	1000	708	71	1	61-115/26
95-95-4	2,4,5-Trichlorophenol	ND		500	477	95	500	497	99	4	62-109/22
88-06-2	2,4,6-Trichlorophenol	ND		500	451	90	500	471	94	4	59-107/23
106-46-7	1,4-Dichlorobenzene	ND		500	338	68	500	381	76	12	45-98/25
121-14-2	2,4-Dinitrotoluene	ND		500	468	94	500	475	95	1	61-110/21
118-74-1	Hexachlorobenzene	ND		500	436	87	500	424	85	3	63-108/22
87-68-3	Hexachlorobutadiene	ND		500	363	73	500	406	81	11	42-102/28
67-72-1	Hexachloroethane	ND		500	326	65	500	366	73	12	42-100/29
98-95-3	Nitrobenzene	ND		500	327	65	500	366	73	11	50-104/28
110-86-1	Pyridine	ND		500	211	42	500	237	47	12	23-74/34

CAS No.	Surrogate Recoveries	MS	MSD	FA95280-3L	Limits
367-12-4	2-Fluorophenol	40%	51%	39%	14-67%
4165-62-2	Phenol-d5	28%	47%	27%	10-50%
118-79-6	2,4,6-Tribromophenol	75%	78%	67%	33-118%
4165-60-0	Nitrobenzene-d5	64%	73%	63%	42-108%
321-60-8	2-Fluorobiphenyl	75%	81%	72%	40-106%
1718-51-0	Terphenyl-d14	87%	86%	87%	39-121%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91083-DUP	X081358.D	1	05/05/22	WH	05/05/22	OP91083	SX3253
FA95209-1	X081357.D	1	05/05/22	WH	05/05/22	OP91083	SX3253

The QC reported here applies to the following samples: **Method:** SW846 8270E

FA95280-3L

CAS No.	Compound	FA95209-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
95-48-7	2-Methylphenol	ND		ND		nc	28
	3&4-Methylphenol	ND		ND		nc	28
87-86-5	Pentachlorophenol	ND		ND		nc	26
95-95-4	2,4,5-Trichlorophenol	ND		ND		nc	22
88-06-2	2,4,6-Trichlorophenol	ND		ND		nc	23
106-46-7	1,4-Dichlorobenzene	ND		ND		nc	25
121-14-2	2,4-Dinitrotoluene	ND		ND		nc	21
118-74-1	Hexachlorobenzene	ND		ND		nc	22
87-68-3	Hexachlorobutadiene	ND		ND		nc	28
67-72-1	Hexachloroethane	ND		ND		nc	29
98-95-3	Nitrobenzene	ND		ND		nc	28
110-86-1	Pyridine	ND		ND		nc	34

CAS No.	Surrogate Recoveries	DUP	FA95209-1	Limits
367-12-4	2-Fluorophenol	39%	37%	14-67%
4165-62-2	Phenol-d5	28%	27%	10-50%
118-79-6	2,4,6-Tribromophenol	69%	71%	33-118%
4165-60-0	Nitrobenzene-d5	65%	63%	42-108%
321-60-8	2-Fluorobiphenyl	71%	69%	40-106%
1718-51-0	Terphenyl-d14	90%	93%	39-121%

* = Outside of Control Limits.

GC/LC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Leachate Blank Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91112-LB	CC082297.D	1	05/09/22	AF	05/07/22	OP91112	GCC2086

The QC reported here applies to the following samples: **Method:** SW846 8151A

FA95280-3L

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D	ND	50	17	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	5.0	1.3	ug/l	

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	86%	39-135%

Leachate Blank Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91111-LB	ST161582.D	1	05/09/22	WH	05/07/22	OP91111	GST3932

The QC reported here applies to the following samples: **Method:** SW846 8081B

FA95280-3L

CAS No.	Compound	Result	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	0.10	0.022	ug/l	
12789-03-6	Chlordane	ND	1.0	0.38	ug/l	
72-20-8	Endrin	ND	0.20	0.021	ug/l	
76-44-8	Heptachlor	ND	0.10	0.026	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.10	0.020	ug/l	
72-43-5	Methoxychlor	ND	0.20	0.050	ug/l	
8001-35-2	Toxaphene	ND	5.0	2.1	ug/l	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	73%	42-127%
2051-24-3	Decachlorobiphenyl	73%	27-127%

Blank Spike Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91112-LBS	CC082298.D	1	05/09/22	AF	05/07/22	OP91112	GCC2086

The QC reported here applies to the following samples: **Method:** SW846 8151A

FA95280-3L

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
94-75-7	2,4-D	250	278	111	58-128
93-72-1	2,4,5-TP (Silvex)	25	29.8	119	57-134

CAS No.	Surrogate Recoveries	BSP	Limits
19719-28-9	2,4-DCAA	96%	39-135%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91111-LBS	ST161580.D	1	05/09/22	WH	05/07/22	OP91111	GST3932

The QC reported here applies to the following samples: **Method:** SW846 8081B

FA95280-3L

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
58-89-9	gamma-BHC (Lindane)	2.5	1.9	76	68-132
72-20-8	Endrin	2.5	2.2	88	71-147
76-44-8	Heptachlor	2.5	1.9	76	63-130
1024-57-3	Heptachlor epoxide	2.5	2.0	80	67-129
72-43-5	Methoxychlor	2.5	2.0	80	60-136

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	64%	42-127%
2051-24-3	Decachlorobiphenyl	70%	27-127%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91112-MS	CC082299.D	1	05/09/22	AF	05/07/22	OP91112	GCC2086
OP91112-MSD	CC082300.D	1	05/09/22	AF	05/07/22	OP91112	GCC2086
FA95197-1L	CC082303.D	1	05/09/22	AF	05/07/22	OP91112	GCC2086

The QC reported here applies to the following samples: **Method:** SW846 8151A

FA95280-3L

CAS No.	Compound	FA95197-1L ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
94-75-7	2,4-D	50 U		250	219	88	250	286	114	27	58-128/28
93-72-1	2,4,5-TP (Silvex)	5.0 U		25	22.5	90	25	24.8	99	10	57-134/28

CAS No.	Surrogate Recoveries	MS	MSD	FA95197-1L	Limits
19719-28-9	2,4-DCAA	67%	77%	43%	39-135%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91111-MS	ST161584.D	1	05/09/22	WH	05/07/22	OP91111	GST3932
OP91111-MSD	ST161585.D	1	05/09/22	WH	05/07/22	OP91111	GST3932
FA95197-1L	ST161583.D	1	05/09/22	WH	05/07/22	OP91111	GST3932

The QC reported here applies to the following samples: **Method:** SW846 8081B

FA95280-3L

CAS No.	Compound	FA95197-1L ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
58-89-9	gamma-BHC (Lindane)	0.10	U	2.5	2.2	88	2.5	2.1	84	5	68-132/22
72-20-8	Endrin	0.20	U	2.5	2.5	100	2.5	2.4	96	4	71-147/23
76-44-8	Heptachlor	0.10	U	2.5	2.2	88	2.5	2.1	84	5	63-130/23
1024-57-3	Heptachlor epoxide	0.10	U	2.5	2.3	92	2.5	2.2	88	4	67-129/23
72-43-5	Methoxychlor	0.20	U	2.5	2.2	88	2.5	2.2	88	0	60-136/25

CAS No.	Surrogate Recoveries	MS	MSD	FA95197-1L	Limits
877-09-8	Tetrachloro-m-xylene	72%	67%	74%	42-127%
2051-24-3	Decachlorobiphenyl	83%	82%	81%	27-127%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91112-DUP	CC082301.D	1	05/09/22	AF	05/07/22	OP91112	GCC2086
FA95279-1	CC082306.D	1	05/09/22	AF	05/07/22	OP91112	GCC2086

The QC reported here applies to the following samples: **Method:** SW846 8151A

FA95280-3L

CAS No.	Compound	FA95279-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
94-75-7	2,4-D	ND		ND		nc	28
93-72-1	2,4,5-TP (Silvex)	ND		ND		nc	28

CAS No.	Surrogate Recoveries	DUP	FA95279-1	Limits
19719-28-9	2,4-DCAA	59%	47%	39-135%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA95280
Account: ARCGMSCA ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91111-DUP	ST161587.D	1	05/09/22	WH	05/07/22	OP91111	GST3932
FA95279-1	ST161586.D	1	05/09/22	WH	05/07/22	OP91111	GST3932

The QC reported here applies to the following samples: **Method:** SW846 8081B

FA95280-3L

CAS No.	Compound	FA95279-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
58-89-9	gamma-BHC (Lindane)	ND		ND		nc	22
12789-03-6	Chlordane	ND		ND		nc	25
72-20-8	Endrin	ND		ND		nc	23
76-44-8	Heptachlor	ND		ND		nc	23
1024-57-3	Heptachlor epoxide	ND		ND		nc	23
72-43-5	Methoxychlor	ND		ND		nc	25
8001-35-2	Toxaphene	ND		ND		nc	25

CAS No.	Surrogate Recoveries	DUP	FA95279-1	Limits
877-09-8	Tetrachloro-m-xylene	69%	65%	42-127%
2051-24-3	Decachlorobiphenyl	86%	79%	27-127%

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

QC Batch ID: MP40641 Methods: SW846 7470A
Matrix Type: LEACHATE Units: mg/l

Prep Date:				05/03/22		05/03/22		05/03/22	
Metal	RL	IDL	MDL	MB raw	final	MB raw	final	MB raw	final
Mercury	0.00050	.00003	.00005	-0.000025	<0.00050	-0.000090	<0.0050	-0.000075	<0.0050

Associated samples MP40641: FA95280-3L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

QC Batch ID: MP40641
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date: 05/03/22

Metal	FA95197-1L Original	MS	Spikelot HGFLWS1	% Rec	QC Limits
Mercury	0.0	0.029	0.030	96.7	80-120

Associated samples MP40641: FA95280-3L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

QC Batch ID: MP40641
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date: 05/03/22 05/03/22

Metal	FA95197-1L Original	MSD	Spikelot HGFLWS1	% Rec	MSD RPD	QC Limit	FA95280-3L Original	DUP	RPD	QC Limits
Mercury	0.0	0.030	0.030	100.0	3.4	20	0.0	0.0	NC	0-20

Associated samples MP40641: FA95280-3L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

QC Batch ID: MP40641 Methods: SW846 7470A
Matrix Type: LEACHATE Units: mg/l

Prep Date: 05/03/22 05/03/22

Metal	BSP Result	Spikelot HGFLWS1	% Rec	QC Limits	BSP Result	Spikelot HGFLWS1	% Rec	QC Limits
Mercury	0.0030	0.0030	100.0	80-120	0.028	0.030	93.3	80-120

Associated samples MP40641: FA95280-3L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

QC Batch ID: MP40641
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date: 05/03/22

Metal	BSP Result	Spikelot HGFLWS1	% Rec	QC Limits
Mercury	0.028	0.030	93.3	80-120

Associated samples MP40641: FA95280-3L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

QC Batch ID: MP40641 Methods: SW846 7470A
Matrix Type: LEACHATE Units: ug/l

Prep Date: 05/03/22

Metal	FA95197-1L Original	SDL 1:5	%DIF	QC Limits
Mercury	0.00	0.00	NC	0-10

Associated samples MP40641: FA95280-3L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

QC Batch ID: MP40674
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date:					05/10/22		05/10/22
Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Aluminum	0.20	.014	.014				
Antimony	0.0060	.001	.001				
Arsenic	0.010	.0013	.0013	-0.00010	<0.010	-0.0020	<0.10
Barium	0.20	.0005	.005	0.00010	<0.20	0.0	<2.0
Beryllium	0.0040	.0001	.0002				
Cadmium	0.0050	.0001	.0002	0.00010	<0.0050	0.0	<0.050
Calcium	1.0	.05	.05				
Chromium	0.010	.0005	.001	0.0	<0.010	0.0010	<0.10
Cobalt	0.050	.0002	.0002				
Copper	0.025	.001	.001				
Iron	0.30	.015	.017				
Lead	0.0050	.001	.0011	-0.00030	<0.0050	-0.0080	<0.050
Magnesium	5.0	.035	.035				
Manganese	0.015	.00025	.001				
Molybdenum	0.050	.0003	.0003				
Nickel	0.040	.0004	.0004				
Potassium	10	.1	.2				
Selenium	0.010	.002	.0029	0.0016	<0.010	-0.0040	<0.10
Silver	0.010	.0005	.0007	0.0014	<0.010	0.011	<0.10
Sodium	10	.25	.5				
Strontium	0.010	.00025	.0005				
Thallium	0.010	.001	.0014				
Tin	0.050	.0005	.001				
Titanium	0.010	.0005	.001				
Vanadium	0.050	.0005	.0006				
Zinc	0.020	.003	.01				

Associated samples MP40674: FA95280-3L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

QC Batch ID: MP40674
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 05/10/22

Metal	FA95291-1 Original	MS	Spikelot MPFLICP2	% Rec	QC Limits
Aluminum					
Antimony	anr				
Arsenic	0.0	20.1	20.0	100.5	80-120
Barium	0.039	21.0	20.0	104.8	80-120
Beryllium	anr				
Cadmium	0.059	0.57	0.50	102.2	80-120
Calcium					
Chromium	0.012	2.1	2.0	104.4	80-120
Cobalt					
Copper	anr				
Iron					
Lead	0.0	4.9	5.0	98.0	80-120
Magnesium					
Manganese					
Molybdenum					
Nickel	anr				
Potassium					
Selenium	0.0	20.2	20.0	101.0	80-120
Silver	0.015	0.52	0.50	101.0	80-120
Sodium					
Strontium					
Thallium	anr				
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP40674: FA95280-3L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

QC Batch ID: MP40674
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date:					05/10/22				05/10/22	
Metal	FA95291-1 Original	MSD	Spikelot MPFLICP2	% Rec	MSD RPD	QC Limit	FA95280-3L Original	DUP	RPD	QC Limits
Aluminum										
Antimony	anr									
Arsenic	0.0	20.1	20.0	100.5	0.0	20	0.0	0.0	NC	0-20
Barium	0.039	21.0	20.0	104.8	0.0	20	0.13	0.13	0.0	0-20
Beryllium	anr									
Cadmium	0.059	0.57	0.50	102.2	0.0	20	0.0	0.0	NC	0-20
Calcium										
Chromium	0.012	2.1	2.0	104.4	0.0	20	0.0060	0.0	200.0(a)	0-20
Cobalt										
Copper	anr									
Iron										
Lead	0.0	4.9	5.0	98.0	0.0	20	0.031	0.030	3.3	0-20
Magnesium										
Manganese										
Molybdenum										
Nickel	anr									
Potassium										
Selenium	0.0	20.1	20.0	100.5	0.5	20	0.0	0.0	NC	0-20
Silver	0.015	0.52	0.50	101.0	0.0	20	0.014	0.014	0.0	0-20
Sodium										
Strontium										
Thallium	anr									
Tin										
Titanium										
Vanadium										
Zinc										

Associated samples MP40674: FA95280-3L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) RPD acceptable due to low duplicate and sample concentrations.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

QC Batch ID: MP40674
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date:		05/10/22				05/10/22	
Metal	BSP Result	Spikelot MPFLICP2	% Rec	QC Limits	BSP Result	Spikelot MPFLICP2	% Rec	QC Limits
Aluminum								
Antimony	anr							
Arsenic	2.0	2.0	100.0	80-120	20.4	20.0	102.0	80-120
Barium	2.1	2.0	105.0	80-120	21.4	20.0	107.0	80-120
Beryllium	anr							
Cadmium	0.051	0.050	102.0	80-120	0.51	0.50	102.0	80-120
Calcium								
Chromium	0.21	0.20	105.0	80-120	2.1	2.0	105.0	80-120
Cobalt								
Copper	anr							
Iron								
Lead	0.49	0.50	98.0	80-120	5.1	5.0	102.0	80-120
Magnesium								
Manganese								
Molybdenum								
Nickel	anr							
Potassium								
Selenium	2.0	2.0	100.0	80-120	20.5	20.0	102.5	80-120
Silver	0.051	0.050	102.0	80-120	0.52	0.50	104.0	80-120
Sodium								
Strontium								
Thallium	anr							
Tin								
Titanium								
Vanadium								
Zinc								

Associated samples MP40674: FA95280-3L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

QC Batch ID: MP40674
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: ug/l

Prep Date: 05/10/22

Metal	FA95291-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	0.00	0.00	NC	0-10
Barium	3.90	3.50	10.3 (a)	0-10
Beryllium	anr			
Cadmium	5.90	6.40	8.5	0-10
Calcium				
Chromium	1.20	0.00	100.0(a)	0-10
Cobalt				
Copper	anr			
Iron				
Lead	0.00	0.00	NC	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	0.00	0.00	NC	0-10
Silver	1.50	6.70	346.7(a)	0-10
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP40674: FA95280-3L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Cyanide, Total	GP37702/GN91303	0.11	0.0	mg/kg	2.35	2.15	91.4	75-118%

Associated Samples:
Batch GP37702: FA95280-3
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Percent	GN91264	FA95274-33	%	12.6	10.8	15.4*	0-5%

Associated Samples:
Batch GN91264: FA95280-1, FA95280-2, FA95280-3
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Cyanide, Total	GP37702/GN91303	FA95280-3	mg/kg	0.0	2.9	2.6	89.5	75-118%

Associated Samples:
Batch GP37702: FA95280-3
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FA95280
Account: ARCGMSCA - ARCADIS Geraghty & Miller
Project: Brenntag; 4260 Azalea Dr, N Charleston, SC

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Cyanide, Total	GP37702/GN91303	FA95280-3	mg/kg	0.0	2.85	2.6	0.0	30%

Associated Samples:
Batch GP37702: FA95280-3
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Appendix B

Boring Logs

SOIL BORING LOG

ARCADIS Design & Consultancy for natural and built assets

MIP/Soil Boring A#3-43 Project/No. 30132220 Page 1 of 1

Site Location Brenntag Charleston, SC

MIP Start
Boring Start 4/29/2022

MIP Complete
Boring Complete 4/29/2022

Drilling Contractor ARM Drilling

Driller

Helper

Drilling Fluid Used None

Drilling Method Geoprobe

Length and Diameter of Coring Device 3" x 5'

Sampling Interval Cont feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated

Datum

Total Depth of MIP Feet

Total Depth of Boring 20 Feet

Hole Diameter 3"

Coring Device Soil Macro Core

Prepared By B. Mayeax

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
			DID NOT SAMPLE

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	PID	PID Depth (Feet)	Sample/Core Description Soil type, %, Grain Size, Angularity, Grading, Consistency, Plasticity, Color, etc.
0.0	1.0				No return
1.0	2.0		2.7	2-3	Gravel approximately 1/4 to 3/4"
2.0	3.0				Silts with very fine sands; dar brown to black
3.0	4.0		1.3	3-4	Same as above but more very fine grain sands
4.0	5.0		0.5	4-5	Very fine sands with silts, trace of clays; saturated at 4.5 ft bls; dark brown, black,
					dark gray.
5.0	6.0				No return
6.0	7.0		1.2	6-7	Very fine sands with silts, trace of clays; dark brown, black,
7.0	10.0		2.6	7-8	Very fine sands, saturated, dark gray
10.0	15.0		1.2	8-9	No return
15.0	18.0		0.2	9-10	Silty clays with shell fragments; some very fine sands; dark blue gray;
18.0	20.0		215.3	15-16	Swollen clays, dark blue gray
			2654.0	16-17	
			4194.0	17-18	
			1722.0	18-19	
			733.2	19-20	
					Note: Soil Shaker Test is positive for DNAPL

SOIL BORING LOG

ARCADIS Design & Consultancy for natural and built assets

MIP/Soil Boring A#3-44 Project/No. 30132220 Page 1 of 1

Site Location Brenntag Charleston, SC

MIP Start ____ MIP Complete ____

Boring Start 4/29/2022 Boring Complete 4/29/2022

Drilling Contractor ARM Drilling

Driller ____ Helper ____

Drilling Fluid Used None

Drilling Method Geoprobe

Length and Diameter of Coring Device 3" x 5'

Sampling Interval Cont feet

Land-Surface Elev. ____ feet ☐ Surveyed ☐ Estimated

Datum ____

Total Depth of MIP ____ Feet

Hole Diameter 3"

Coring Device Soil Macro Core

Total Depth of Boring 20 Feet

Prepared By B. Mayeax

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
			DID NOT SAMPLE

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	PID	PID Depth (Feet)	Sample/Core Description Soil type, %, Grain Size, Angularity, Grading, Consistency, Plasticity, Color, etc.
0.0	1.0				No return
1.0	2.0		1.6	2-3	Gravel approximately 1/4 to 1/2"
2.0	4.5		4.2	3-4	Clay with very fine sands; medium stiffness; moist; dark gray; red, gray, brown from
					4 to 4.5 ft
4.5	5.0		3.9	4-5	Very fine sands with silts; red, gray, brown, saturated about 5 ft bls
5.0	7.0				No return
7.0	7.5		3.8	7-8	No return
7.5	10.0		4.8	8-9	Very fine sands; saturated; tan to white
10.0	15.0		10.0	9-10	No return; may be due to fine sands sliding out of barrel
15.0	17.0		154.2	15-16	Silty clays with shell fragments; dark blue gray; saturated
17.0	20.0		2966.0	16-17	Swollen clays; dark blue gray
			1416.0	17-18	
			1526.0	18-19	
			1481.0	19-20	
					Note: Soil Shaker Test is positive for DNAPL

SOIL BORING LOG

ARCADIS Design & Consultancy for natural and built assets

MIP/Soil Boring A#3-45 Project/No. 30132220 Page 1 of 1

Site Location Brenntag Charleston, SC

MIP Start
Boring Start 4/29/2022

MIP Complete
Boring Complete 4/29/2022

Drilling Contractor ARM Drilling

Driller

Helper

Drilling Fluid Used None

Drilling Method Geoprobe

Length and Diameter of Coring Device 3" x 5'

Sampling Interval Cont feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated

Datum

Total Depth of MIP Feet

Hole Diameter 3"

Coring Device Soil Macro Core

Total Depth of Boring 20 Feet

Prepared By B. Mayeax

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
			DID NOT SAMPLE

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	PID	PID Depth (Feet)	Sample/Core Description Soil type, %, Grain Size, Angularity, Grading, Consistency, Plasticity, Color, etc.
0.0	2.5				No return
2.5	3.0				Gravel 1/4 to 3/4"
3.0	5.0		0.0	3-4	Silts with very fine sands, some gravel pieces; dark brown; moist at 5 ft bls
5.0	7.0		0.0	4-5	No return
7.0	7.5				Same as 3 to 5 ft bls but saturated
7.5	8.0		0.1	7-8	Same as 3 to 5 ft bls but saturated; some minor clays evident
8.0	10.0		2.4	8-9	Very fine sands; saturated; medium to dark gray and brown
10.0	15.0		5.4	9-10	No return
15.0	18.0		15000.0	15-16	Silty clays with shell fragments; saturated; bluish to gray
18.0	20.0		1935.0	16-17	Swollen clays; dark gray to blue in color
			756.3	17-18	
			731.7	18-19	
			921.9	19-20	
					Note: Soil Shaker Test is positive for DNAPL

SOIL BORING LOG

ARCADIS Design & Consultancy for natural and built assets

MIP/Soil Boring A#3-46 Project/No. 30132220 Page 1 of 1

Site Location Brenntag Charleston, SC

MIP Start — MIP Complete —
Boring Start 4/29/2022 Boring Complete 4/29/2022

Drilling Contractor ARM Drilling Driller — Helper —

Drilling Fluid Used None Drilling Method Geoprobe

Length and Diameter of Coring Device 3" x 5' Sampling Interval Cont feet

Land-Surface Elev. — feet ☐ Surveyed ☐ Estimated Datum —

Total Depth of MIP — Feet Hole Diameter 3" Coring Device Soil Macro Core

Total Depth of Boring 20 Feet

Prepared By B. Mayeax

Sampling Data:

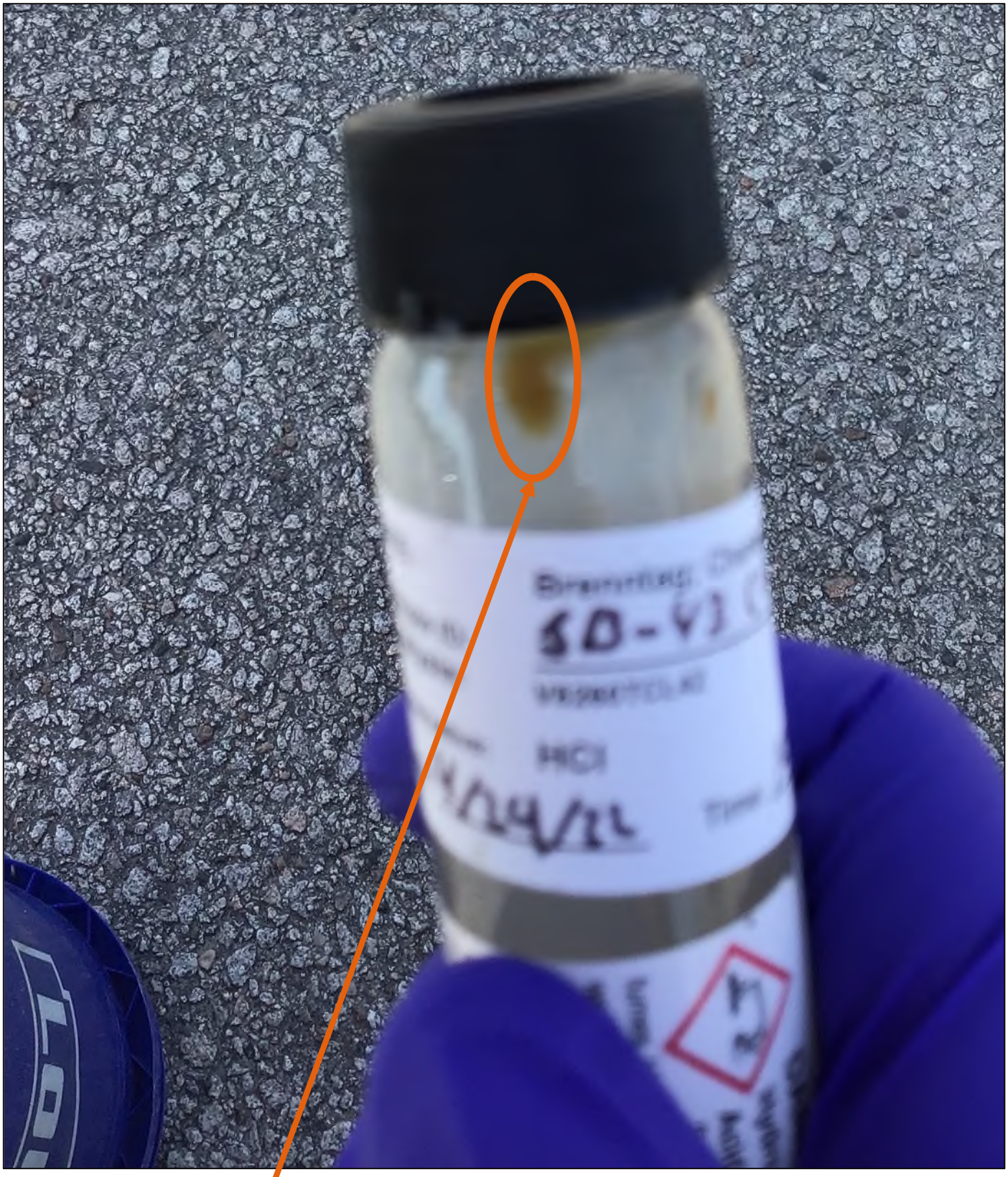
Depth	Grab/Composite	Time	Laboratory Analysis
			DID NOT SAMPLE

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	PID	PID Depth (Feet)	Sample/Core Description Soil type, %, Grain Size, Angularity, Grading, Consistency, Plasticity, Color, etc.
0.0	2.0				No return
2.0	3.5				Gravel from 1/4 to 1"
3.5	5.0		8.2	4-5	Clay and silts with very fine sands; saturated at 4' ft bls; gray to brown
5.0	6.0				No return
6.0	10.0		138.6	6-7	Very fine sands; saturated; dark gray to brown
10.0	15.0		9.9	7-8	No return
15.0	16.0		3.9	8-9	Silty clays with shell fragments; saturated; dark blue to gray
16.0	20.0		2.1	9-10	Swollen clays; dark blue to gray
			93.8	15-16	
			140.6	16-17	
			76.0	17-18	
			100.1	18-19	
			33.1	19-20	
					Note: Soil Shaker Test is negative for DNAPL

Appendix C

DNAPL Observation Log



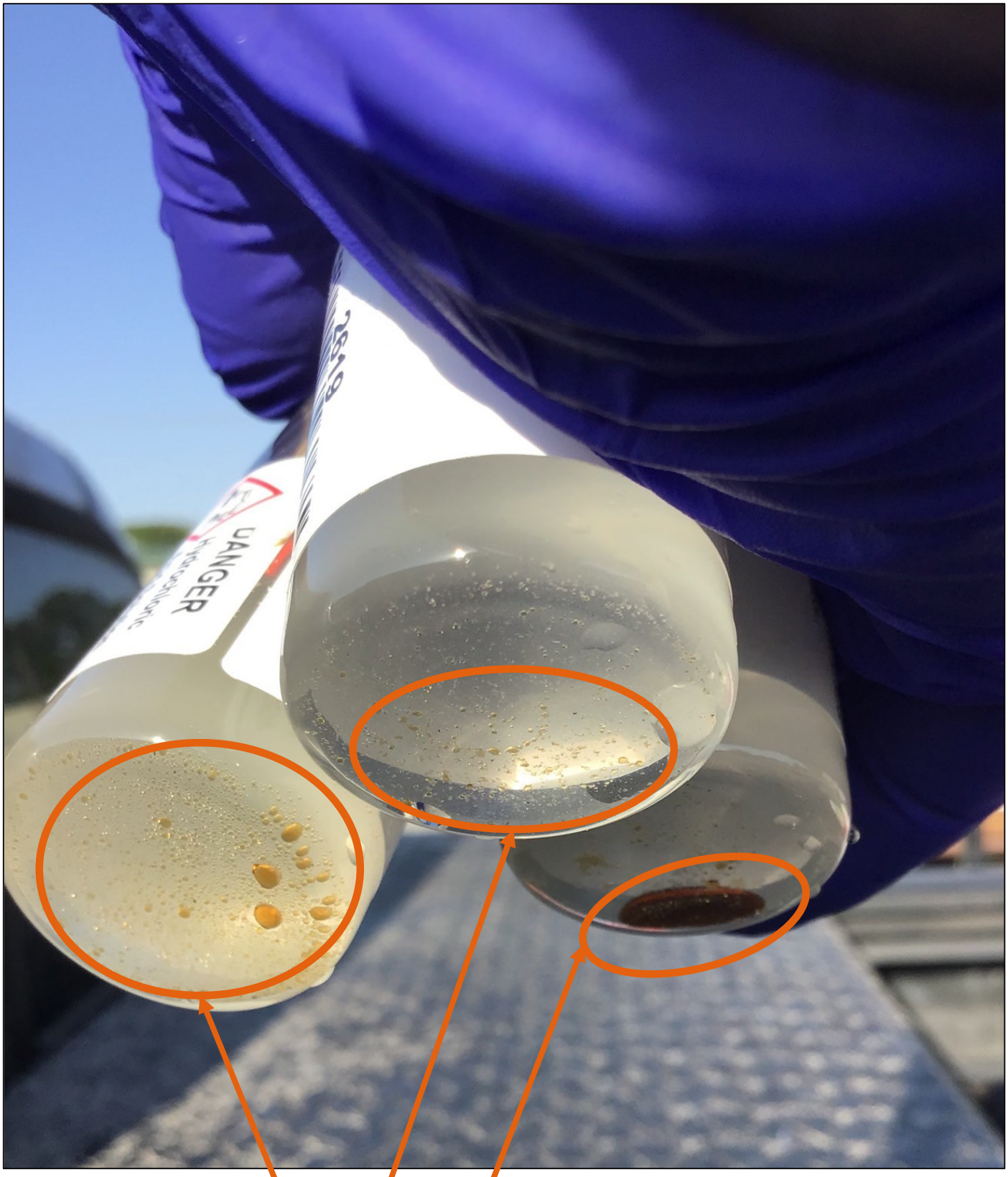
APPENDIX C
DNAPL OBSERVATION RECORD

GROUNDWATER SAMPLE,
A3-43 (17-20)

ARCADIS

FIGURE
C-1

8/24/2022 10:52:56 AM



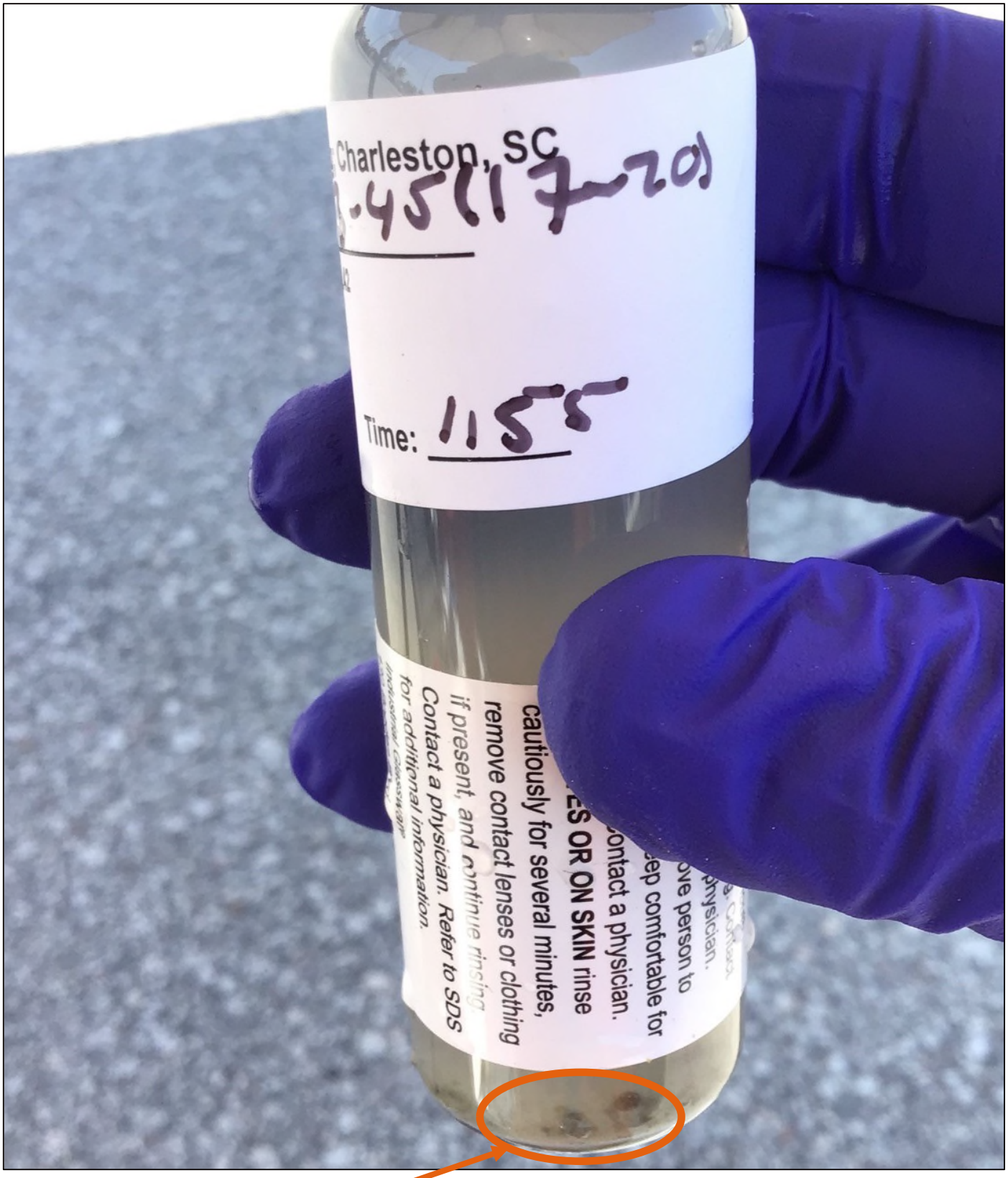
APPENDIX C
DNAPL OBSERVATION RECORD

GROUNDWATER SAMPLE,
A3-44 (17-20)

ARCADIS

FIGURE
C-2

8/24/2022 10:52:57 AM



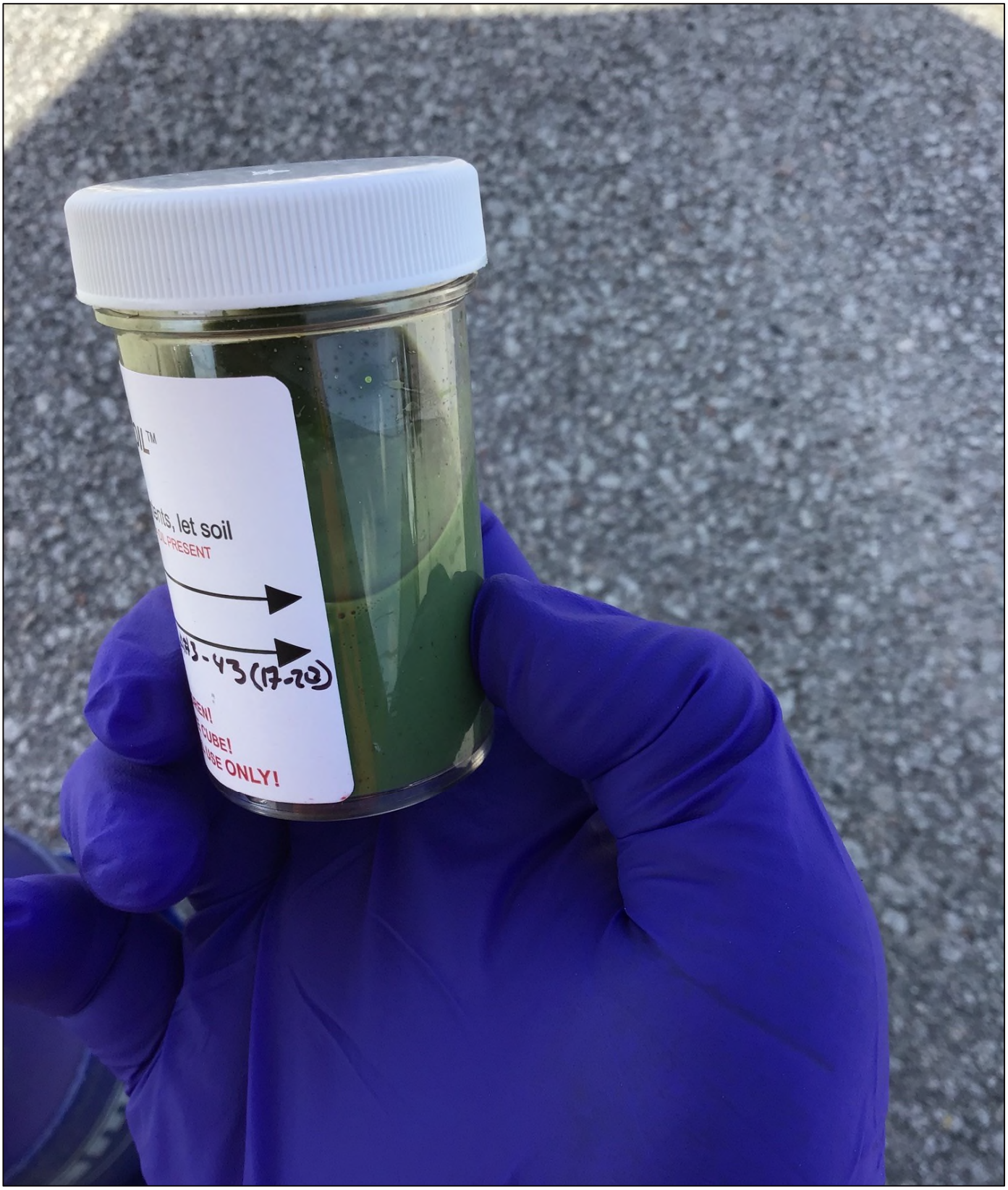
APPENDIX C
DNAPL OBSERVATION RECORD

GROUNDWATER SAMPLE,
A3-45 (17-20)

ARCADIS

FIGURE
C-3

8/24/2022 10:52:57 AM



Positive indication of DNAPL
(difficult to see in picture)

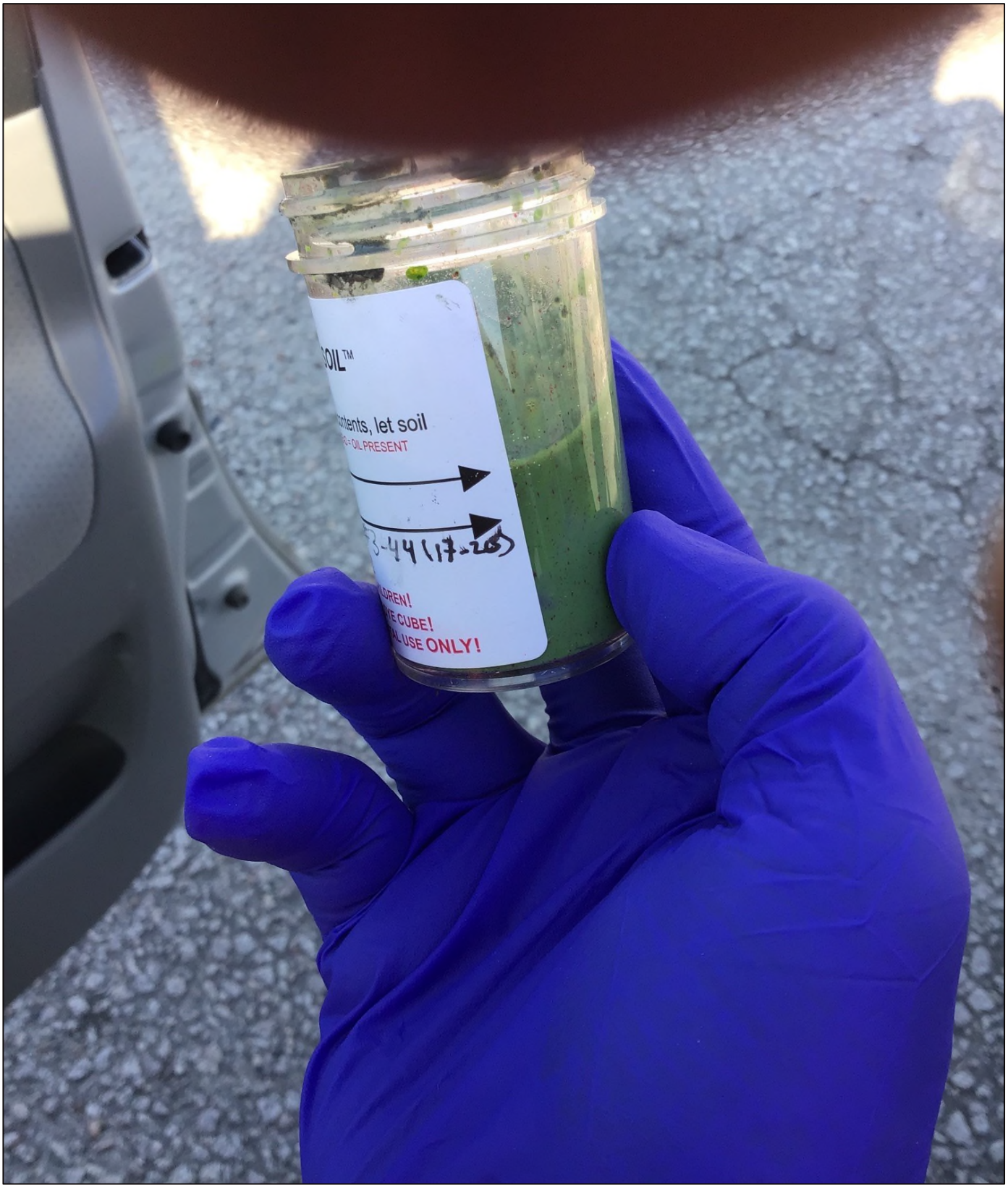
APPENDIX C
DNAPL OBSERVATION RECORD

SOIL DNAPL DYE SHAKE TEST,
A3-43 (17-20)

ARCADIS

FIGURE
C-4

8/24/2022 10:52:57 AM



Positive indication of DNAPL
(difficult to see in picture)

APPENDIX C
DNAPL OBSERVATION RECORD

SOIL DNAPL DYE SHAKE TEST,
A3-44 (17-20)

ARCADIS

FIGURE
C-5

8/24/2022 10:52:58 AM

Positive indication of DNAPL
(difficult to see in picture)

APPENDIX C
DNAPL OBSERVATION RECORD

SOIL DNAPL DYE SHAKE TEST,
A3-45 (15-18)

ARCADIS

FIGURE
C-6

8/24/2022 10:52:58 AM

Negative indication of DNAPL
(difficult to see in picture)

APPENDIX C
DNAPL OBSERVATION RECORD

SOIL DNAPL DYE SHAKE TEST,
A3-46 (17-20)

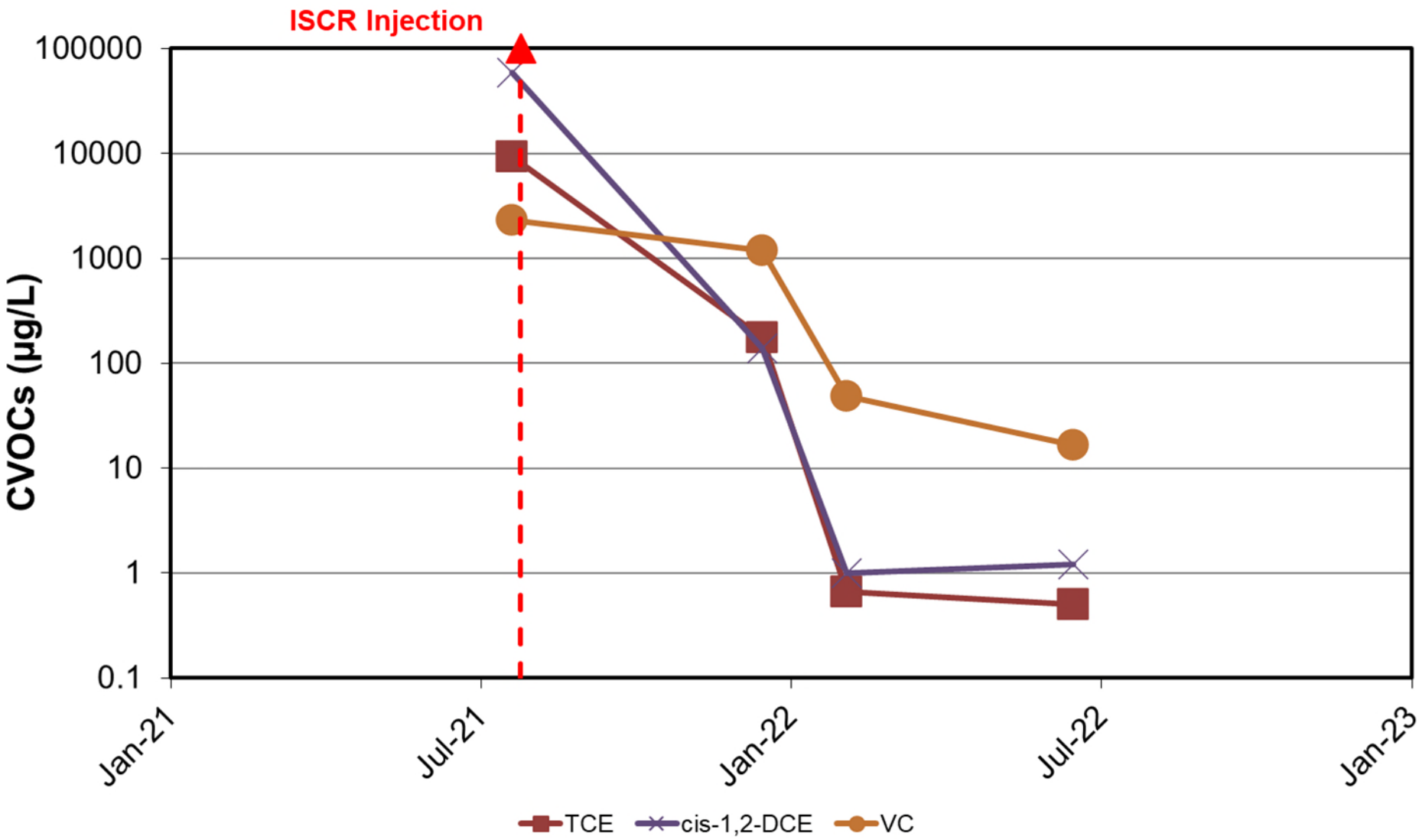
ARCADIS

FIGURE
C-7

8/24/2022 10:52:58 AM

Appendix D

Area #1 Trend Charts

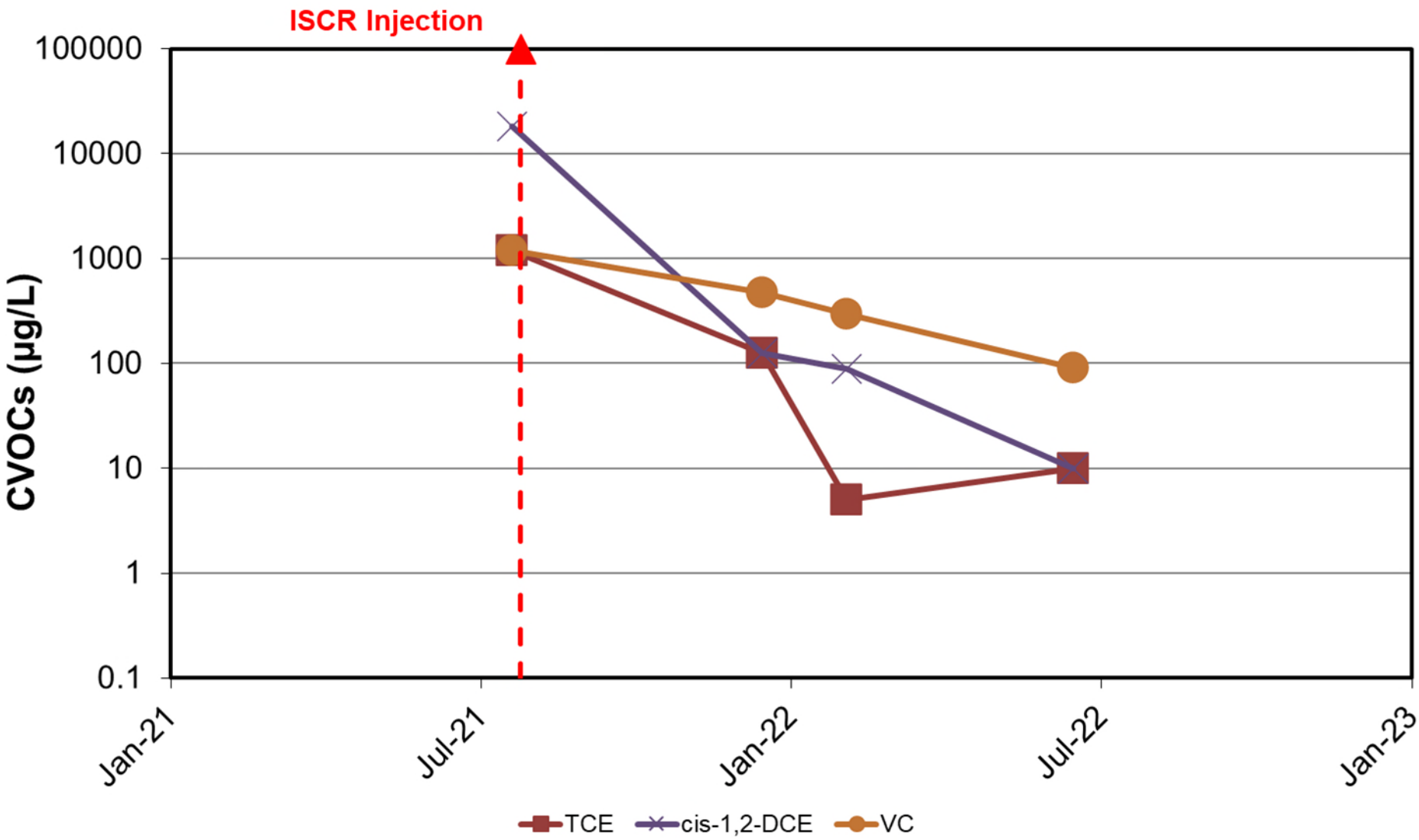


APPENDIX D
AREA #1 TREND CHARTS

MW-7 TREND CHART

ARCADIS

FIGURE
D-1

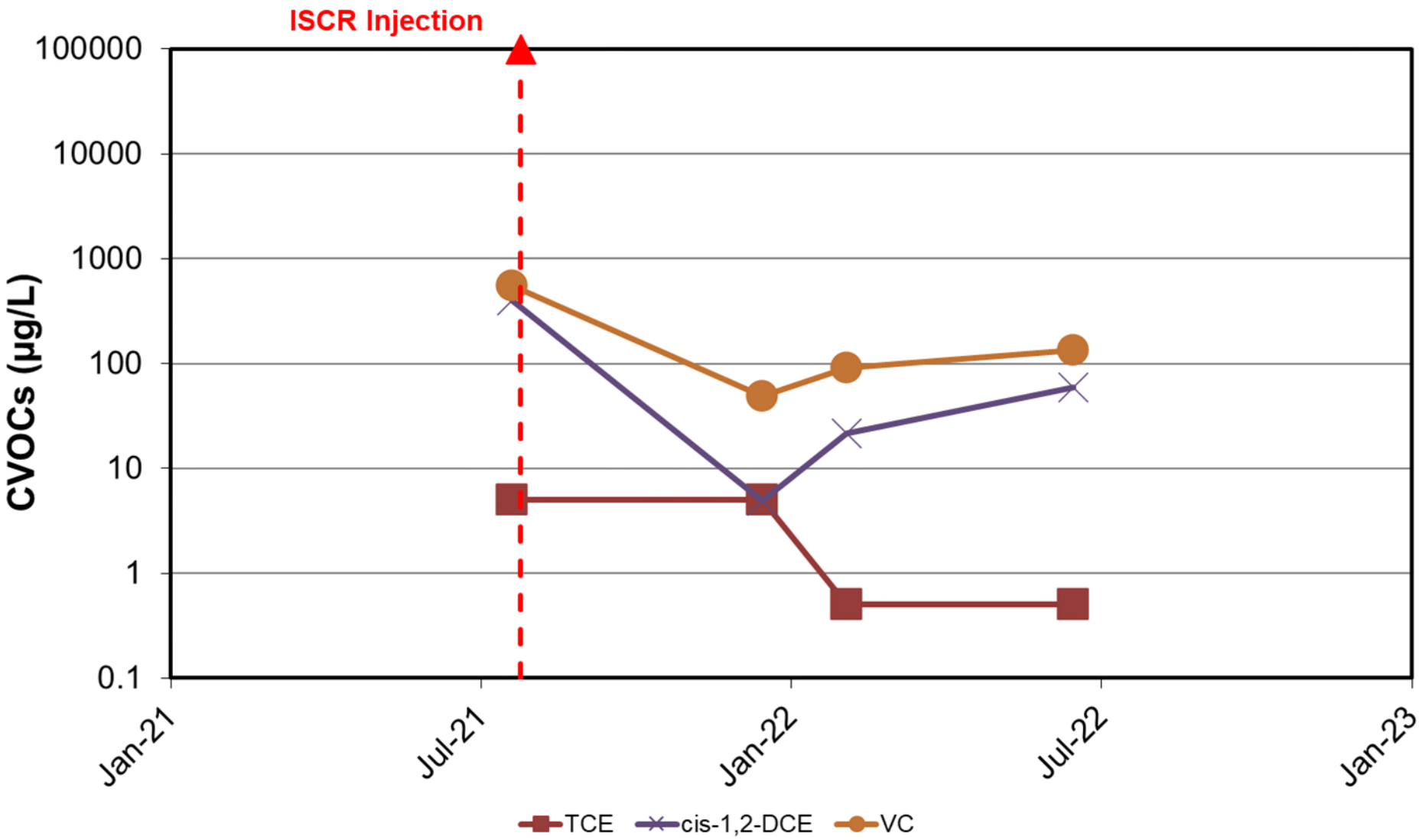


APPENDIX D
AREA #1 TREND CHARTS

MW-13 TREND CHART

ARCADIS

FIGURE
D-2

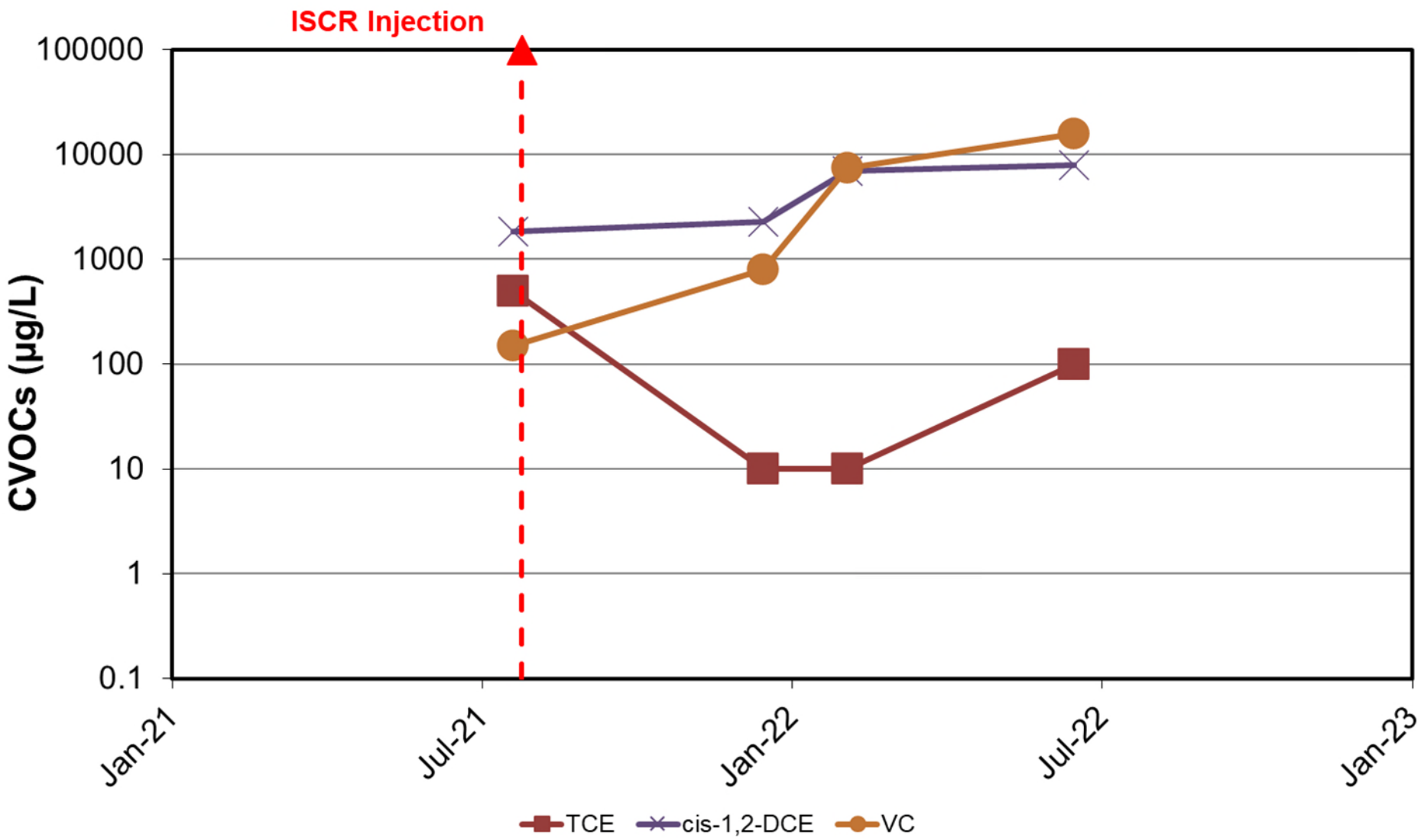


APPENDIX D
AREA #1 TREND CHARTS

MW-20 TREND CHART

ARCADIS

FIGURE
D-3



APPENDIX D
AREA #1 TREND CHARTS

MW-21 TREND CHART

ARCADIS

FIGURE
D-4

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