Intended for

MSC Naples, LLC
HSI No. 10326

Document type

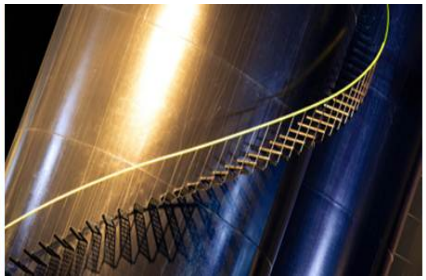
Voluntary Investigation and Remediation Plan and Application

Date

July 2015

Prepared By

Ramboll Environ US Corporation
Atlanta, Georgia USA


Project Number:

0735252C

RAMBOLL ENVIRON

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Acronyms and Abbreviations

ART	Accelerated Remediation Technology
c12DCE	Cis-1,2Dichloroethene
CAP	Corrective Action Plan
Corners	Corners Shopping Center
CSM	Conceptual Site Model
ESE	Environmental Science and Engineering, Inc.
ft bgs	Feet Below Ground Surface
ft/day	Feet per Day
GAC	Granular Activated Carbon
GA EPD	Georgia Environmental Protection Division
HSI	Hazardous Site Inventory
HSRA	Hazardous Site Response Act
ISCO	In Situ Chemical Oxidation
kg	Kilograms
L	Liter
µg	Microgram
m^3/day	Cubic Meters per Day
MCL	Maximum Contaminant Level
MetLife	Metropolitan Life Insurance Company
MSC	MSC Naples, Inc.
PCE	Tetrachloroethylene
ppb	Parts per Billion
RRS	Risk Reduction Standards
SVE	Soil Vapor Extraction
TCE	Trichloroethylene
USEPA	United States Environmental Protection Agency
VC	Vinyl Chloride
VIRP	Voluntary Investigation and Remediation Plan
VISL	Vapor Instrusion Screening Level
VOC	Volatile Organic Compound
VRP	Georgia Voluntary Remediation Program

1. INTRODUCTION

This application to the Georgia Voluntary Remediation Program (VRP) has been prepared for MSC Naples, LLC (MSC). The Corners Shopping Center (Corners) site is located at 2475 Sandy Plains Road, Marietta, Cobb County, Georgia, near the intersection of Sandy Plains Road and Post Oak Tritt Road (**Figure 1**). The Corners site consists of four contiguous parcels and was previously owned by Metropolitan Life Insurance Company (MetLife). The Corners Shopping Center is the largest of the parcels and consists of three tenant spaces and surrounding paved areas. The remainder of the Corners Shopping Center parcel consists of wooded land located north of the developed property. This portion of the property was acquired from the Sandy Plains Baptist Church in 1999. The Corners site also includes one residential parcel formerly owned by an individual that was acquired by MetLife in 1995 (**Figure 2**). MSC then purchased the property in September 2005.

On June 29, 1994, the Georgia Environmental Protection Division (GA EPD) listed the site on the Hazardous Site Inventory (HSI) due to the presence of tetrachloroethene (PCE) and related volatile organic compounds (VOCs) in the soil and groundwater. Following 10 years of site investigation and remediation work, the site was accepted into the Georgia Brownfields Program in August 2005.

Various reports have been submitted to the EPD since the initial listing on the HSI detailing site activities. A Corrective Action Plan (CAP) was submitted on December 5, 2003, and approved by the GA EPD on May 25, 2004. Ramboll Environ US Corporation (Ramboll Environ), formerly ENVIRON International Inc., has prepared this Voluntary Investigation and Remediation Plan (VIRP) on behalf of MSC's application to enroll the site in the VRP. The VIRP Application Form is provided in **Attachment A**.

2. SITE BACKGROUND

This section of the report includes a description of the site and a site history, including the investigations and associated reports submitted to the GA EPD and a summary of soil and groundwater corrective actions associated with the site.

2.1 Site Description

The site is located at 2475 Sandy Plains Road, in Marietta, Cobb County, Georgia. The site is currently owned and maintained by MSC, and consists of Tax Parcel IDs 16055700120, 16055700200, 16055700390, and 16055700530. A warranty deed with a legal description of the property and a tax plat map are included in **Appendix A**. Properties to the south and east of Corners are primarily commercial while the area to the west and north of Corners is primarily residential. The commercial properties include restaurants, a gas station, a bank, and additional retail shopping centers. The area to the west of the property includes Sandy Mill and Kerry Creek residential subdivisions located along Macby Avenue and Kerry Creek Drive, respectively. A site layout, including the subject and surrounding properties, is provided as **Figure 1**.

2.2 Site History

The developed portion of Corners was constructed in the late 1970s. Prior to that time the land was primarily agricultural and residential. A dry cleaner business, located in the northern-most retail space, began operations in 1978 and continued until 1994. Numerous releases of dry cleaning chemicals were documented to have occurred from storage tank overfills and equipment leaks.

A PCE spill was reported in 1984 due to a ruptured line/hose. The volume of the release was not reported.

After the 1984 release, the site was listed on GA EPD's HSI on June 29, 1994 (HSI No. 10326). Following 10 years of site investigation and remediation work, the site was submitted for acceptance into Georgia's Brownfields Program in August 2005. In September 2005, the property was purchased by MSC. A summary of the soil and groundwater corrective action conducted at the site is discussed below.

2.3 Summary of Previous Investigations

The following investigative and remedial activities have occurred since 1993:

- November 1993: Phase II investigation identified PCE in shallow soils and groundwater (Boykin & Associates)
- December 1993: Subsurface investigation identified PCE in deeper soils and in the groundwater (Environmental Science and Engineering, Inc. [ESE])
- March 1994: Subsurface investigation continued (ESE)
- December 1994 through April 1995: Delineation investigation and remediation system design/implementation for the soil; groundwater assessment, soil gas survey (LAW/MACTEC)
- 1998: Remediation system effectiveness study and further delineation evaluation for soil; groundwater assessment (MACTEC)
- 1999: Revised Compliance Status Report submitted (MACTEC)
- May 2002: Additional subsurface investigation in the former dry cleaners space and in the detention pond (MACTEC). Results indicated VOCs in the soil adjacent to the former dry cleaning machine were below detection limits and VOCs within the detention pond area were less than the Type 1 RRS.
- December 2003: Correction Action Plan (CAP)
- December 2010: Begin in-situ chemical oxidation (ISCO) treatment in the groundwater (treatments reported in December 2010, July 2011, February 2012, and late 2013)
- July 2014: Groundwater sampling event (ENVIRON)
- February 2015: Groundwater sampling event (ENVIRON)

2.3.1 Summary of Corrective Actions – Soil

The soil was characterized during assessment and remediation activities were performed between 1993 through 2005. The remediation activities included capping a detention pond with a concrete cover, a security fence was installed around the detention pond where contaminated soil was found, contaminated soil was also excavated and removed from the site, and a soil (and groundwater) treatment system was designed and installed in February 1997. The treatment system consisted of a combination of groundwater recovery and vapor extraction wells to remove VOCs from the soil and groundwater. The soil on the property was certified to meet Type 1 RRS in August 2005; therefore, the GA EPD issued a no further action for the soil.

2.3.2 Summary of Corrective Actions – Groundwater

Groundwater remediation was implemented in 1997 and consisted of a groundwater pump and treat system that included groundwater recovery wells, soil vapor extraction (SVE), and air sparge injection. Extracted groundwater was treated through a low-profile air-stripper and polished with granular activated carbon (GAC). The vapors collected in the SVE system were combined with the off-gas from the air stripper and treated using a vapor phase GAC vessel. The system was operated in this configuration until the last quarter of 2005, when it was discontinued and replaced with a groundwater remediation technology called Accelerated Remediation Technology (ART), which combined in situ air stripping, air sparging, SVE, enhanced bioremediation/oxidation, and subsurface groundwater recirculation. The Type 1 RRS standard for PCE and trichloroethene (TCE), the two primary constituents of concern at the site, is 5 micrograms per liter (µg/L) or parts per billion (ppb), which is equal to the United States Environmental Protection Agency (USEPA) Maximum Contaminant Level (MCL) for these constituents.

After it was determined that the ART system would not bring groundwater at the site into compliance in 2010, a more aggressive and focused remediation technology was employed. Specifically, ISCO was initiated at the site in December 2010. Historical records show that injection events were conducted in December 2010, July 2011, and February 2012. Additionally, based on a figure provided to ENVIRON and observations made in the field, it appears as though an additional injection was conducted in late 2013 or early 2014. Since the implementation of the ISCO events, groundwater concentrations at the site continue to be greater than the Type 1 RRS.

2.3.3 Risk Reduction Standards

Although the site is in a predominantly commercial area, residential development is present on the surrounding properties to the west. Therefore, Type 1/2 RRS (residential/site-specific) for the site were developed in the approved CAP in accordance with the HSRA rules. The Type 1/2 RRS that were developed are: PCE - 5 µg/L; TCE - 5 µg/L; cis-1,2-dichloroethene (cDCE) - 70 µg/L; and vinyl chloride (VC) - 2 µg/L. However, since the submittal of the CAP, the USEPA updated the toxicity values for PCE which resulted in a revised Type 2 RRS for PCE of 19 µg/L.

3. SITE SETTING

3.1 Site Geology

The property is underlain primarily by residual soil consisting of micaceous sandy silt and silty fine to medium sand. Some fill soil is also present, especially near the northern corner of the shopping center building. The residual soils on the property were formed from the in-place weathering of the parent rock. The shallow soils in the wooded area of the property near the stream consist of alluvial sandy clays to a depth of approximately six feet, below which are residual soils.

Partially weathered bedrock was encountered at depths ranging from 25 to 60 feet below ground surface. The partially weathered rock was generally characterized as silty fine to course sand which exhibited standard penetration resistances of greater than 100 blows per foot. Bedrock is distinguished from the overlying partially weathered rock by its greater density, generally resulting in hollow-stem auger refusal. The contact between the bedrock and the overlying partially weathered rock is gradational and was selected as the depth of auger refusal. The rock/partially weathered rock contact, as defined by auger refusal, was encountered in several borings installed by MACTEC at depths ranging from 29 to 68 feet below ground surface.

The rock/partially weathered rock contact occurred at the highest elevation in the south-central portion of the study area near the northern end of the shopping center building and the lowest elevation in the west-central portion of the study area, in the vicinity of GRW-5. The rock elevation data indicates a general downward sloping of the rock surface from south to north, toward the area of GRW-5. A north to northwest-trending trough shaped feature is apparent in this portion of the Property. This trough slopes in a direction consistent with the direction of groundwater flow.

Rock core samples obtained from monitoring wells MW-24 and MW-25 indicate that the underlying bedrock on the property consists predominantly of interlayered muscovite-biotite-hornblende gneiss and hornblende amphibolite. The rock obtained from MW-24 tended to alternate between highly weathered amphibolite and lightly weathered gneiss. This pattern of weathering was less prevalent in the samples obtained from MW-25 although several small zones of highly weathered rock were encountered. A number of moderate to high angle fractures were also noted throughout the core samples, particularly in the amphibolite. Numerous breaks were also observed in the gneiss, parallel to the foliation. Although many of these likely occurred during drilling, they do represent planes of weakness which could potentially influence groundwater flow. We note that the two borings exhibited relatively similar hydraulic conductivities based on the results of the slug tests. This information indicates that, although the rock core samples appear somewhat different, their hydrogeologic properties are similar to one another.

3.2 Site Hydrogeology

Well yield tests performed during investigations activities in January 1998 indicated monitoring wells would produce an estimated 0.5 to 1.5 gallons per minute. A sodium bromide injection study performed in 2000 yielded an estimated groundwater flow velocity range of 0.1 to 12 feet per day. The average hydraulic conductivity calculated from rising head tests in 2001 is 4.19 ft/day.

3.2.1 Groundwater Flow Direction

Groundwater elevations have shown little fluctuation since the submittal of the 2005 O&M Report. Depth to groundwater measurements and corresponding groundwater elevations are presented for the July 2014 and February 2015 sampling events in **Table 1**.

Static water levels in 32 monitoring wells were measured using an electronic water level meter and recorded from the top of the casing prior to sampling the wells during the monitoring events. The water level measurements were used to determine the groundwater elevation at each location and to define the potentiometric surface and groundwater flow direction. Monitoring well locations and general site features are shown on the site layout provided as **Figure 1** and **Figure 2**.

Based on current and historic groundwater sampling events, the groundwater flows generally to the north-northwest, consistent with the surface topography, and is expected to discharge to a small tributary of Noonday Creek located in the wooded portion of the property. The groundwater gradient for these events was approximately 0.006 ft/ft as measured between wells DVEW-03 and DVEW-10, which is consistent with the historic data. The potentiometric surface maps based on the February 2015 gauging data is presented as **Figure 3** and **Figure 4**.

4. NATURE AND EXTENT OF CONTAMINATION

Based on data presented in historic Compliance Status Reports and the Corrective Action Plan, as well as recent monitoring reports, the soil and groundwater in the source area has been characterized and remediated, and the groundwater plume has been delineated.

4.1 Potential Sources

The historical source of impacts at the site is the release of PCE due to overfilling a storage tank, dripping and leaking equipment, and a breakage in a high pressure hose in 1984 that resulted in a release of PCE at the former dry cleaning facility that was located at the northern end of the shopping center building. These releases resulted in impacts to the soil and groundwater associated with the site.

4.2 Soil

The soil associated with the releases of PCE at the site was remediated in between 1993 and 2005. Following remedial action, GA EPD issued an approval letter stating that the soil at the site is in compliance with the Type 1 RRS (August 2005). Consequently, no further action is required at the site for soil impacts.

4.3 Groundwater

For the purpose of assessing impacts to the groundwater, 24 monitoring wells (Figure 2) have been sampled at least annually for the past 20 years. These wells were recently sampled by ENVIRON in July 2014 and February 2015. Based on the data from the last sampling event, PCE was the only VOC present in the groundwater. In the February 2015 sampling event, PCE was detected in 11 wells at concentrations that ranged from 5.6 µg/L in DVEW-08 to 250 µg/L in DVEW-07. The groundwater analytical results collected since June 2013 are summarized in **Table 2.** The PCE concentrations detected in the February 2015 sampling event (and associated isoconcentrations) are presented on **Figure 5**. **Figure 6** is a cross section along the plume axis that presents the February 2015 groundwater PCE concentrations.

Based on the results of the most recent groundwater sampling event, delineation of the groundwater for PCE has been achieved. Concentrations of PCE in the most downgradient well (MW-28) do not exceed the Type 2 RRS of 19 ug/L. The extent of the plume has been adequately defined in the upgradient and downgradient directions, as well as vertically. In addition, as a further measure of groundwater delineation in the downgradient direction, ENVIRON estimated potential concentrations of PCE in the groundwater 1,000 feet downgradient from property boundary. The predicted concentrations are less than the Type 1 RRS for PCE in groundwater. A more detailed discussion of the model used to predict this concentration is presented in **Appendix B**.

The groundwater data are provided in **Appendix C.**

4.4 Surface Water

A surface water sample (SW-01) was collected on July 16, 2014, from a small stream that is several inches deep that flows behind the houses on the east side of Kerry Creek Drive (Figure 2). No VOCs were detected in the surface water sample, indicating that constituents in the groundwater are not impacting the surface water downgradient of the site. The surface water data are provided in **Appendix C**.

4.5 Summary

Based on the available data, horizontal and vertical delineation has been achieved for the regulated substances in the soil and groundwater at the site.

5. EXPOSURE ASSESSMENT

This section presents the exposure assessment for the site, in which currently complete and reasonably-anticipated future exposure pathways are identified. To identify these pathways, the

contaminant sources and release mechanisms are presented, followed by the potential receptors and associated exposure routes.

5.1 Conceptual Site Model

A conceptual site model (CSM) that identifies potential contaminant sources, exposure pathways, and receptors is presented in **Figure 7** and **Figure 8**. The CSM is based on available site information, including data from groundwater and surface water investigations that were conducted at the site during the 21-year period between 1993 and 2014. A discussion of the components of the CSM is presented below.

5.2 Potential Sources and Release Mechanisms

The potential sources of the regulated substances detected at the site were discussed in Section 4.1, and include a number of historical releases of PCE associated with the dry cleaning facility located on the northern portion of the shopping center. The PCE that was spilled impacted the soil at the site and likely migrated to the groundwater beneath the site via infiltration and leaching. The impacted soil in the source area has been remediated under Georgia's HSRA program and the dry cleaning facility is no longer operating; as such, no current sources of contamination are known to be present. In addition, because regulated substances are not present in the surface water, exposure to surface water a pathway that is evaluated further.

5.3 Potential Receptors and Exposure Routes

Based on a review of historical data and approval from the EPD that soil is no longer a concern at the site, the potential exposures associated with the site are:

- Exposure to constituents in groundwater; and,
- Exposure to constituents in indoor air due to vapor intrusion from impacted groundwater beneath occupied buildings.

As discussed in **Section 2**, the site is developed with a shopping center and an asphalt parking lot that surrounds the shopping center buildings and extends out from the southeastern side of the building towards Sandy Plains Road. The remainder of the site consists of an undeveloped forested area to the north and northeast of the shopping center structures and is bordered by property owned by a church. The site is bordered to the west by a residential neighborhood. A drainage ditch originating at the outfall of the detention pond is present in the undeveloped forested area. This ditch generally only contains water during or just after rainfall events. In addition, a stream is located along the east side of Kerry Creek Drive. This stream is several inches deep and flows to the north.

According to the Application for Limitation of Liability and Compliance Status Report (MACTEC, 2005; approved by GA EPD in a letter dated August 24, 2005), the properties (both residential and non-residential) within the vicinity of the site are connected to municipal water supplies. Therefore, the ingestion of groundwater pathway is not a complete exposure pathway. In addition, Cobb County has established an ordinance (Cobb County Code of Ordinance Section 122-221 (b)(8)) that prevents the installation of a drinking water well on private or public property and requires disconnection of existing private wells when existing public water is connected to the premises.

Based on the nature of current and expected future site activities, the potential receptors at the site are construction and utility workers that may be exposed to constituents in the shallow groundwater beneath the site, and onsite retail workers and offsite residential receptors that may be exposed to constituents in the groundwater via vapor intrusion (i.e., indoor air).

A discussion of exposure routes (i.e., incidental ingestion and inhalation) associated with these potentially complete pathways and receptors is provided below.

5.3.1 Groundwater

Groundwater at the site is not used as a drinking water source and there is no evidence of public or private drinking water wells within 1,000 feet of the site. The depth to groundwater at the site ranges from approximately 3.5 feet below ground surface (bgs) to 20 feet bgs, indicating there is potential for construction or utility work to contact the groundwater in certain areas of the site. As such, the potential for exposure to groundwater for human receptors is limited to incidental ingestion by construction workers or utility workers in areas where the groundwater is less than 10 feet bgs. The groundwater elevations are provided on **Table 1**. Wells with water at a depth of less than 10 feet bgs are highlighted on the table.

5.3.2 Indoor Air

Vapor intrusion is considered to be a complete exposure pathway for onsite retail (commercial/industrial) workers and offsite residential receptors at the site. These receptors could inhale airborne, vapour phase contaminants that migrate into buildings from impacted groundwater.

5.3.3 Ecological Receptors

The Corners Shopping Center site is bordered to the north and northeast by 15-20 acres of undeveloped forested land. This area consists of a degraded patch of urban forest populated with invasive species (such as privet and kudzu). The canopy of hardwood forest is approximately 50-70 feet overhead, and many trees are 12-24 inches in diameter at breast height. The understory includes kudzu, thickly-grown privet, blackberry, green briar, and other herbaceous plants. The terrestrial areas are frequented by small mammals, insects and other invertebrates, and song birds.

A drainage ditch originates from the outflow of a detention pond located at the northwestern corner of the shopping center, and traverses into the wooded area (this ditch typically does not contain water). Downgradient of a concrete retention pond constructed behind the site for storm water management, the ditch contains gravel-to-cobble sized stones, ostensibly for stabilization. Beyond the concrete retention pond, the ditch widens and flattens out as it enters a low area. The urban forest shows signs that water movement may occur in this area, but it is not an aquatic habitat, but rather an ephemeral drainage feature.

Several hundred feet north of this area, a small stream flows north along the east side of Kerry Creek Drive. This channel is incised to 4-6' below ground surface, and the water in the channel is several inches deep. This appears to be perennial aquatic habitat, and water striders, dragonflies, and frogs were observed. The water depth is likely too shallow for a fish community. One water sample was taken from this area on July 16, 2014, near where the stream first appears to be perennially flowing behind the houses on the east side of Kerry Creek Drive (**Figure 2**). The water sample was analyzed for VOCs. No VOCs were detected in this sample. Consequently, the ecological habitat that exists immediately downgradient of the site does not appear to be impacted by the groundwater contamination associated with the site.

6. CLEANUP STANDARDS

The subject property has been developed for commercial purposes. Site-specific cleanup standards were developed for the identified potentially complete exposure pathways (i.e., incidental ingestion of groundwater and inhalation of vapor phase constituents); as such, onsite commercial/industrial

(retail) workers, onsite construction and utility workers, and offsite residents were considered in the development of the cleanup standards (**Figure 8**). To calculate these cleanup standards, the exposure factor values used to calculate the criteria were obtained from either state guidance (GA EPD, 2009), federal guidance (USEPA, 2014; USEPA, 2015), or professional judgment, and are discussed below.

6.1 Commercial/Industrial Worker – Vapor Intrusion/Indoor Air (Inhalation)

Commercial/industrial workers were assumed to have a body weight of 70 kilograms (kg) and be present at work for 8 hours per day over the course of 250 days per year for 25 years (GA EPD, 2009; USEPA, 2014; USEPA, 2015). To be consistent with HSRA, the target hazard index (noncarcinogens) was 1 and the target cancer risk was 1E-05 for Class A and Class B carcinogens and 1E-04 for Class C and Class D carcinogens. These exposure factors, target hazard index, and target cancer risk were used in USEPA's Vapor Intrusion Screening Level (VISL) Calculator (USEPA, 2015) which calculates the cleanup standards for groundwater that are protective of the commercial/industrial worker exposed to vapors that may migrate into the building. The input for and output of the VISL Calculator and the generated cleanup standards for groundwater are provided in **Appendix D**. The cleanup standard for construction/industrial workers potentially exposed to PCE in the groundwater at the site via vapor intrusion is 240 µg/L (**Table 3**).

Only one well (DVEW-07) had a detected concentration of PCE that was greater than the cleanup standard with a concentration of 250 ug/L in the most recent sampling event (**Figure 5**). However, DVEW-07 is located approximately 150 feet north of the site buildings and therefore not under or in immediate proximity to current site structures where workers might be exposed to indoor air.

6.2 Off-Site Resident – Vapor Intrusion/Indoor Air (Inhalation)

Residents were assumed to have a body weight of 70 kg and be at home for 24 hours per day over the course of 350 days per year for 26 years (USEPA, 2015). To be consistent with HSRA, the target hazard index (noncarcinogens) was 1 and the target cancer risk was 1E-06 for carcinogens. As with the commercial/industrial worker, these exposure factors, target hazard index, and target cancer risk were used in the USEPA's VISL Calculator to calculate the cleanup standards for groundwater that are protective of off-site residents exposed to vapors that may migrate into the residence. The input for and output of the VISL Calculator and the generated cleanup standards for groundwater are provided in **Appendix D**. The cleanup standard for residents potentially exposed to PCE in the groundwater at the site via vapor intrusion is 15 ug/L (**Table 3**).

PCE was not detected at a concentration greater than 15 ug/L (**Figure 5**) in the off-site wells in the most recent sampling event.

6.3 Construction Worker/Utility Worker – Groundwater (Incidental Ingestion)

Future utility workers were assumed to have a body weight of 70 kg and incidentally ingest 10 ml/event of groundwater (USEPA, 2014) for 1 event per day over the course of 10 days per year (professional judgment) for 25 years (GA EPD, 2009).

Future construction workers were assumed to have a body weight of 70 kg and incidentally ingest 10 ml/event of groundwater (USEPA, 2014) for 1 event per year over the course of 180 days per year for 1 year (i.e., 6 months; professional judgment).

The calculation of the cleanup standards for the utility and construction workers are presented in **Appendix E**. The lesser of the cleanup standards for the utility worker (1,500,000 ug/L) and the construction worker (85,000 ug/L) incidentally ingesting shallow groundwater will be used for the site.

Consequently, the cleanup standard for PCE in the groundwater is 85,000 ug/L. The cleanup standards for incidentally ingesting the groundwater are provided in **Table 3** (the calculations used to derive the RRS are provided in **Appendix E**).

PCE was not detected in the groundwater at the site (including monitoring wells with water at a depth of 10 feet bgs or less) at a concentration exceeding the cleanup standard of 85,000 ug/L in the most recent sampling event.

7. PROPOSED CORRECTIVE ACTION

Based on current site conditions, the exposure pathways discussed in **Section 5**, the cleanup standards presented in **Section 6**, and the comparison of site data to the cleanup standards, the following corrective actions are proposed for the site:

- **Vapor Intrusion (Inhalation):** Based on current site conditions, PCE concentrations in the on-site groundwater are not expected to result in adverse health effects for the commercial/industrial worker. The one location where the concentration of PCE in the groundwater exceeded the cleanup standard is not under or in immediate proximity to current site structures where workers might be exposed to indoor air. In addition, PCE concentrations in the off-site groundwater did not exceed the residential cleanup criteria vapor intrusion and are therefore not expected to result in adverse health effects. Based on this information, corrective action related to the groundwater based on potential risks associated with exposure to vapor-phase contaminants is not required.
- **Groundwater (Incidental Ingestion):** There is no direct exposure to groundwater via ingestion at or within 1,000 feet of the site, with the potential exception of construction or utility workers in areas where groundwater is less than 10 feet below the ground surface. However, concentrations of PCE, the only VOC detected in the groundwater, do not exceed the cleanup standard for exposure to a utility or construction workers (regardless of depth). Therefore, corrective action for groundwater at the site based on incidental ingestion is not warranted.

However, to ensure that the future use of the site with respect to potential exposure to site-related impacts does not change, an environmental covenant will be executed on the site in conformance with O.C.G.A. 44-61-1, et seq., the “Georgia Uniform Environmental Covenants Act.” This covenant will require that the land use of the site remains commercial, no drinking water wells will be installed on the site, and any future construction plans for a building on the site will be evaluated for vapor intrusion.

8. PROJECT SCHEDULE

A final Compliance Status Report will be submitted within 90 days of acceptance into the VRP.

9. REFERENCES

Georgia Environmental Protection Division (EPD). 2009. Hazardous Site Response Act, Chapter 391-3-19. Georgia Department of Natural Resources.

MACTEC, 2005. Application for Limitation of Liability and Compliance Status Report, The Corners Shopping Center North, HSI Site No. 10326, July 11.

USEPA, 2014. Region 4 Human Health Risk Assessment Supplemental Guidance, Technical Services Section, Superfund Division, January. Draft Final.

USEPA, 2015. Vapor Intrusion Screening Level Calculator Version 3.4, June 2015 RSLs. OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Soil Vapor Sources to Indoor Air (OSWER Publication 9200.2-154), June.

Tables

Table 1 - Summary of Groundwater Elevations
Corners Shopping Center
Marietta, Georgia

Well ID	Total Depth (ft BTOC)	Screened Interval (ft BTOC)	TOC Elevation (ft amsl)	Date	Depth to Water (ft BTOC)	Groundwater Elevation (ft amsl)
AIW-01	52.49	47.49-52.49	1101.03	7/7/2014	19.09	1081.94
	DW	DW	DW	DW	DW	DW
AIW-02	53.50	48.50-53.50	1100.80	7/8/2014	15.12	1085.68
	DW	DW	DW	DW	DW	DW
AIW-03	49.50	44.50-49.50	1100.46	2/6/2015	19.53	1080.93
AIW-05	48.50	43.50-48.50	1085.31	NA	NA	NA
	DW	DW	DW	DW	DW	DW
ART-01	NA	NA	NA	7/7/2014	20.79	NA
			NA	2/6/2015	19.51	NA
ART-02	30.00	NA	NA	7/8/2014	15.12	NA
			NA	2/6/2015	7.05	NA
ART-03	NA	NA	NA	7/8/2014	12.32	NA
			NA	2/6/2015	7.55	NA
DVEW-01	42.00	7.00-42.00	1102.03	7/7/2014	18.92	1083.11
	DW	DW	DW	DW	DW	DW
DVEW-02	35.00	10.00-35.00	1100.36	7/8/2014	18.05	1082.31
	DW	DW	DW	DW	DW	DW
DVEW-03	48.00	8.00-48.00	1100.57	7/7/2014	19.50	1081.07
			1100.57	2/6/2015	19.44	1081.13
DVEW-04	43.50	3.50-43.50	1090.73	7/8/2014	6.30	1084.43
	DW	DW	DW	DW	DW	DW
DVEW-05	48.50	3.50-48.50	1085.36	7/8/2014	5.80	1079.56
	DW	DW	DW	DW	DW	DW
DVEW-06	64.00	4.00-64.00	1089.16	7/8/2014	11.26	1077.90
			1089.16	2/6/2015	9.22	1079.94
DVEW-07	57.00	7.00-57.00	1095.19	7/8/2014	13.69	1081.50
			1095.19	2/6/2015	12.07	1083.12
DVEW-08	62.00	7.00-62.00	1098.39	7/8/2014	17.83	1080.56
			1098.39	2/6/2015	17.10	1081.29
DVEW-09	63.00	3.00-63.00	1094.34	7/8/2014	15.88	1078.46
			1094.34	2/6/2015	14.85	1079.49
DVEW-10 [1]	53.50	3.50-53.50	1083.27	7/8/2014	6.20	1077.07
			1087.02	2/6/2015	7.27	1079.75
GRW-01	29.00	4.00-29.00	1070.44	7/7/2014	CNL	CNL
			1070.44	2/6/2015	CNL	CNL
GRW-02 [1]	33.50	3.50-33.50	1075.07	7/8/2014	5.20	1069.87
			1079.01	2/6/2015	7.58	1071.43
GRW-03 [1]	39.50	4.50-39.50	1077.45	7/8/2014	4.74	1072.71
			1081.74	2/6/2015	7.03	1074.71
GRW-04 [1]	40.00	5.00-40.00	1079.05	7/8/2014	5.61	1073.44
			1083.37	2/6/2015	7.85	1075.52
GRW-05 [1]	65.00	5.00-65.00	1085.01	7/8/2014	10.45	1074.56
			1089.49	2/6/2015	13.10	1076.39
GRW-06 [1]	48.50	3.50-48.50	1080.27	7/8/2014	5.05	1075.22
			1084.02	2/6/2015	7.55	1076.47
GRW-07 [1]	53.50	8.50-53.50	1084.11	NA	NA	NA
			1088.96	2/6/2015	10.50	1078.46

Table 1 - Summary of Groundwater Elevations
Corners Shopping Center
Marietta, Georgia

Well ID	Total Depth (ft BTOC)	Screened Interval (ft BTOC)	TOC Elevation (ft amsl)	Date	Depth to Water (ft BTOC)	Groundwater Elevation (ft amsl)
GRW-08 [1]	46.00	6.00-46.00	1082.54	7/8/2014	5.17	1077.37
			1086.57	2/6/2015	7.10	1079.47
GRW-09 [1]	39.00	9.00-39.00	1086.69	7/8/2014	10.63	1076.06
			1090.94	2/6/2015	12.58	1078.36
MW-01	24.88	9.88-24.88	1099.22	7/7/2014	18.92	1080.30
			1099.22	2/6/2015	CNL	CNL
MW-01A	36.50	31.50-36.50	1098.66	7/7/2014	CNL	CNL
			1098.66	2/6/2015	CNL	CNL
MW-02	22.50	12.50-22.50	NA	7/7/2014	NA	NA
	DW	DW	DW	2/6/2015	DW	DW
MW-06	67.68	62.68-67.68	1099.71	7/7/2014	20.39	1079.32
			1099.71	2/6/2015	19.14	1080.57
MW-07	8.50	3.50-8.50	NA	7/7/2014	CNL	CNL
			NA	2/6/2015	CNL	CNL
MW-08	7.00	2.00-7.00	1082.46	7/7/2014	CNL	CNL
			1082.46	2/6/2015	CNL	CNL
MW-09	10.00	5.00-10.00	NA	7/7/2014	CNL	CNL
			NA	2/6/2015	CNL	CNL
MW-10	11.00	6.00-11.00	1077.96	7/7/2014	7.79	1070.17
			1079.22	2/6/2015	6.79	1072.43
MW-11	58.00	8.00-58.00	1082.79	7/7/2014	NA	NA
			1082.79	2/6/2015	4.70	1078.09
MW-12	48.50	43.50-48.50	1077.96	7/7/2014	NA	NA
			1077.96	2/6/2015	4.40	1073.56
MW-13	44.00	39.00-44.00	1071.04	7/7/2014	NA	NA
			1071.04	2/6/2015	NA	NA
MW-14	39.00	34.00-39.00	1089.45	7/7/2014	10.81	1078.64
			1089.45	2/6/2015	9.10	1080.35
MW-16	55.00	40.00-55.00	1085.35	CNL	CNL	CNL
			1085.35	CNL	CNL	CNL
MW-17	60.00	45.00-60.00	1093.28	7/8/2014	16.45	1076.83
			1093.28	2/6/2015	15.50	1077.78
MW-18	51.00	36.00-51.00	1084.62	7/8/2014	9.62	1075.00
			1084.62	2/6/2015	7.88	1076.74
MW-19	64	49.00-64.00	1085.61	7/8/2014	11.84	1073.77
			1085.61	2/6/2015	10.28	1075.33
MW-20	40	25.00-40.00	1081.89	7/8/2014	7.38	1074.51
			1081.89	2/6/2015	5.77	1076.12
MW-21	65	50.00-65.00	1073.70	7/8/2014	4.68	1069.02
			1073.70	2/6/2015	3.48	1070.22
MW-22	20	5.00-20.00	1082.68	CNL	CNL	CNL
			1082.68	CNL	CNL	CNL
MW-23	30	15.00-30.00	1099.10	NA	NA	NA
			1099.10	2/6/2015	18.10	1081.00
MW-24	87.00	77-87	1100.73	7/8/2014	19.29	1081.44
			1100.73	2/6/2015	19.72	1081.01
MW-25	75.00	70-75	1082.84	CNL	CNL	CNL
			1082.84	CNL	CNL	CNL

Table 1 - Summary of Groundwater Elevations
Corners Shopping Center
Marietta, Georgia

Well ID	Total Depth (ft BTOC)	Screened Interval (ft BTOC)	TOC Elevation (ft amsl)	Date	Depth to Water (ft BTOC)	Groundwater Elevation (ft amsl)
MW-27	20.18	NA	1074.37	7/7/2014	5.72	1068.65
			1074.37	2/6/2015	4.59	1069.78
MW-28	68.00	NA	1086.62	NA	NA	NA
			1086.62	2/6/2015	12.91	1073.71
VEW-01	13.61	3.61-13.61	NA	7/7/2014	NA	NA
	DW	DW	DW	DW	DW	DW
VEW-02	15.10	5.10-15.10	NA	7/7/2014	14.66 [2]	NA
	DW	DW	DW	DW	DW	DW
VEW-03	15.24	5.24-15.24	NA	7/7/2014	14.78 [2]	NA
	DW	DW	DW	DW	DW	DW
VEW-04	15.06	5.06-15.06	NA	7/7/2014	14.49 [2]	NA
	DW	DW	DW	DW	DW	DW
VEW-05	15.50	5.50-15.50	NA	NA	NA	NA
	DW	DW	DW	DW	DW	DW

Notes:

ft BTOC - feet below top of casing

ft amsl - feet above mean sea level

DW - Decommissioned Well

NA - Not Available

CNL - Could Not Locate

Blue highlighting indicates well was used to evaulate construction and utility worker exposure

[1] Former system well converted to a monitoring well

[2] Cap water = dry

Elevations relative to mean sea level (msl) using the NAVD-88 Trans datum

Table 2 - Summary of CVOCs in Groundwater
Corners Shopping Center
February 2015

		Analyte	1,1-DCA	1,1-DCE	1,2-DCA	c12DCE	PCE	t12DCE	TCE	Vinyl Chloride
		CAS No.	75-34-3	75-35-4	107-06-2	156-59-2	127-18-4	156-60-5	79-01-6	75-01-4
		MCL [(1)]		7	5	70	5	100	5	2
Well ID	Date Sampled	Units								
AIW-03	7/11/2014	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**5.2**	< 5.0	< 5.0	< 2.0
	2/6/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**8.5**	< 5.0	< 5.0	< 2.0
AIW-04	2/18/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
ART-02	6/12/2013	ug/l	--	--	< 1.0	< 1.0	**6.5**	< 1.0	< 1.0	< 1.0
	12/3/2013	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**6.6**	< 5.0	< 5.0	< 2.0
	5/26/2014	ug/l	--	--	--	< 5.0	**45**	< 5.0	< 5.0	< 2.0
	2/5/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**7.7**	< 5.0	< 5.0	< 2.0
DVEW-06	6/14/2013	ug/l	--	--	< 1.0	< 1.0	**10**	< 1.0	1.1	< 1.0
	12/6/2013	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**6.7**	< 5.0	< 5.0	< 2.0
	5/27/2014	ug/l	--	--	--	< 5.0	**110**	< 5.0	**17**	< 2.0
	7/9/2014	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**44**	< 5.0	**5.9**	< 2.0
DUP-01	7/9/2014	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**50**	< 5.0	**6.2**	< 2.0
	2/3/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**14**	< 5.0	< 5.0	< 2.0
DUP-02	2/3/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**18**	< 5.0	< 5.0	< 2.0
DVEW-07	6/19/2013	ug/l	--	--	**5.8**	1.8	**153**	< 1.0	0.91 J	< 1.0
	8/19/2013	ug/l	< 5.0	< 5.0	< 5.0	6	**360**	< 5.0	< 5.0	< 2.0
	9/13/2013	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**400**	< 5.0	< 5.0	< 2.0
	10/9/2013	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**650**	< 5.0	< 5.0	< 2.0
	12/6/2013	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**450**	< 5.0	< 5.0	< 2.0
	5/27/2014	ug/l	--	--	--	< 5.0	**630**	< 5.0	< 5.0	< 2.0
	2/2/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**250**	< 5.0	< 5.0	< 2.0
DUP-01	2/2/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**230**	< 5.0	< 5.0	< 2.0
DVEW-08	7/9/2014	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**7.8**	< 5.0	< 5.0	< 2.0
	2/3/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**5.6**	< 5.0	< 5.0	< 2.0
GRW-04	6/19/2013	ug/l	--	--	**5.9**	< 1.0	1.5	< 1.0	< 1.0	< 1.0
	12/5/2013	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
	5/26/2014	ug/l	--	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
	2/6/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
GRW-05	6/13/2013	ug/l	--	--	< 1.0	1.3	**23.3**	< 1.0	1.2	< 1.0
	12/5/2013	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**12**	< 5.0	< 5.0	< 2.0
	5/27/2014	ug/l	--	--	--	< 5.0	**29**	< 5.0	< 5.0	< 2.0
	2/5/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**6.1**	< 5.0	< 5.0	< 2.0
GRW-09	6/13/2013	ug/l	--	--	< 1.0	< 1.0	0.94 J	< 1.0	< 1.0	< 1.0
	12/3/2013	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
	5/26/2014	ug/l	--	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
	2/6/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
MW-06	6/12/2013	ug/l	--	--	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	12/3/2013	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**5.7**	< 5.0	**9.1**	< 2.0
	5/26/2014	ug/l	--	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
	2/2/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0

Table 2 - Summary of CVOCs in Groundwater
Corners Shopping Center
February 2015

		Analyte	1,1-DCA	1,1-DCE	1,2-DCA	c12DCE	PCE	t12DCE	TCE	Vinyl Chloride
		CAS No.	75-34-3	75-35-4	107-06-2	156-59-2	127-18-4	156-60-5	79-01-6	75-01-4
		MCL [(1)]		7	5	70	5	100	5	2
Well ID	Date Sampled	Units								
MW-11	7/9/2014	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**5.9**	< 5.0	< 5.0	< 2.0
	2/3/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
MW-12	2/5/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
MW-14	6/14/2013	ug/l	--	--	< 1.0	< 1.0	**12.6**	< 1.0	< 1.0	< 1.0
	12/6/2013	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**25**	< 5.0	< 5.0	< 2.0
	5/27/2014	ug/l	--	--	--	< 5.0	**8.2**	< 5.0	< 5.0	< 2.0
	2/2/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
MW-17	7/9/2014	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**70**	< 5.0	< 5.0	< 2.0
	2/3/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**53**	< 5.0	< 5.0	< 2.0
MW-18	6/14/2013	ug/l	--	--	< 1.0	< 1.0	**11.3**	< 1.0	< 1.0	< 1.0
	12/5/2013	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**14**	< 5.0	< 5.0	< 2.0
	5/27/2014	ug/l	--	--	--	< 5.0	**11**	< 5.0	< 5.0	< 2.0
	2/5/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
MW-19	6/14/2013	ug/l	--	--	< 1.0	1.5	**16.9**	< 1.0	0.62 J	< 1.0
	12/5/2013	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**13**	< 5.0	< 5.0	< 2.0
	5/27/2014	ug/l	--	--	--	< 5.0	**42**	< 5.0	< 5.0	< 2.0
	2/5/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**69**	< 5.0	< 5.0	< 2.0
MW-20	7/9/2014	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**13**	< 5.0	< 5.0	< 2.0
	2/5/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**13**	< 5.0	< 5.0	< 2.0
MW-27	7/10/2014	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**7.9**	< 5.0	< 5.0	< 2.0
	2/5/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**17**	< 5.0	< 5.0	< 2.0
MW-28	2/18/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	**7.4**	< 5.0	< 5.0	< 2.0
TW-01	2/4/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
TW-02	2/4/2015	ug/l	< 5.0	< 5.0	< 5.0	5.5	**210**	< 5.0	**20**	< 2.0
TW-03	2/4/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	5	< 5.0	< 5.0	< 2.0
TW-04	2/4/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
TW-05	2/5/2015	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0

Notes:

(1) USEPA Maximum Contaminant Levels for Drinking Water (May 2014)

ug/l -- Micrograms per liter (parts per billion)

< -- Analyte was not detected at the laboratory reporting limit indicated

Bold and highlighted values indicate an exceedance of the MCL

Table 3 - Summary of Cleanup Criteria
Corners Shopping Center
Marietta, Georgia

Constituent	Groundwater Based on Incidental Ingestion		Groundwater Criteria Based on Vapor Intrusion	
	Type 4 RRS Construction Worker (ug/L)	Type 4 RRS Utility Worker (ug/L)	Residential (ug/L)	Commercial (ug/L)
Tetrachloroethene	85,000	1,500,000	15	240

Notes:
Vapor intrusion criteria calculated using the USEPA's Vapor Instrusion Screening Calculator (USEPA, 2015)

Figures

RAMBOLL ENVIRON

Site Location Map

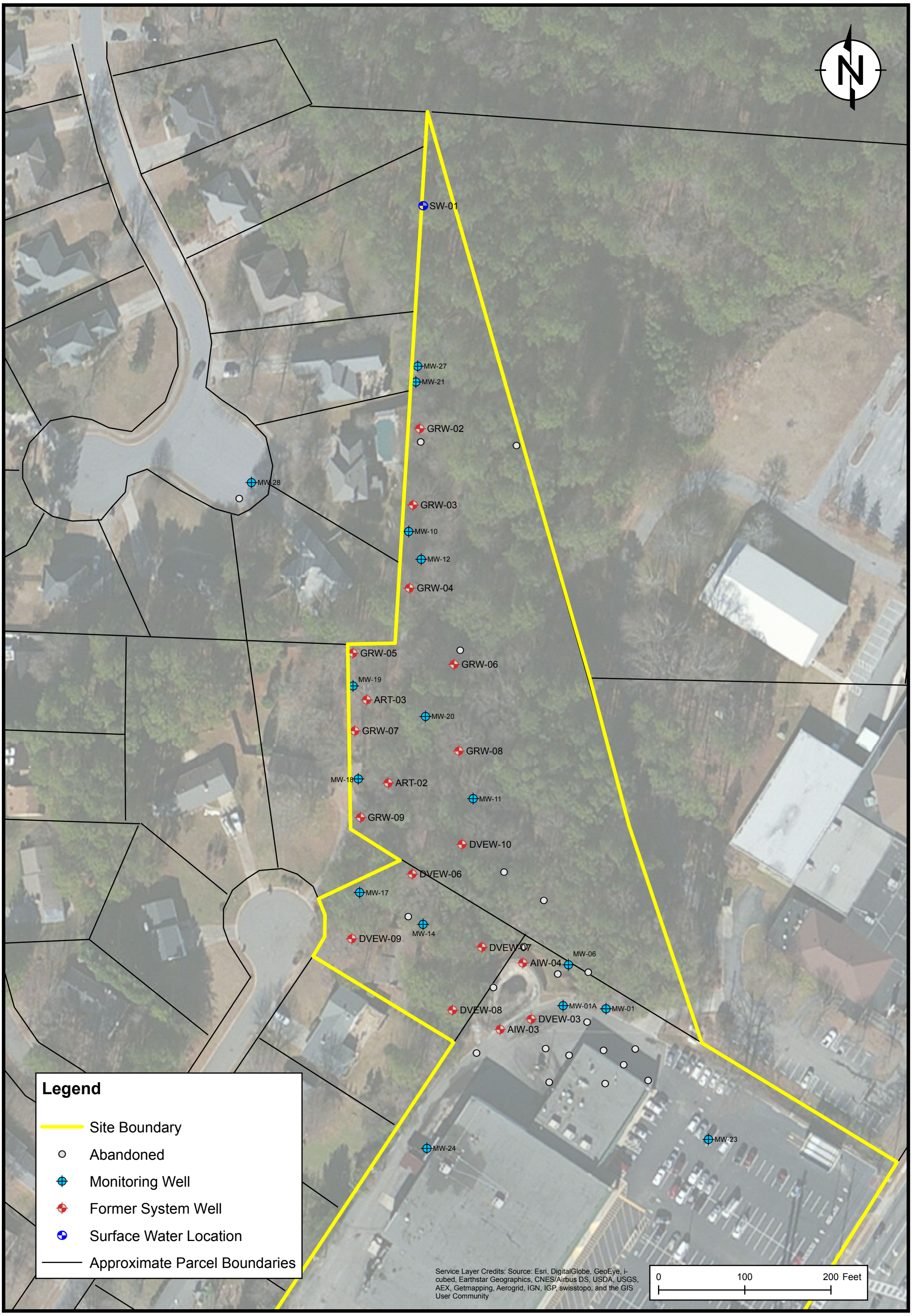
The Corners Shopping Center
Marietta, Georgia

Figure
1

DRAFTED BY: ahottenstein

DATE: 6/4/2015

07-35252C



RAMBOLL ENVIRON

Site Layout

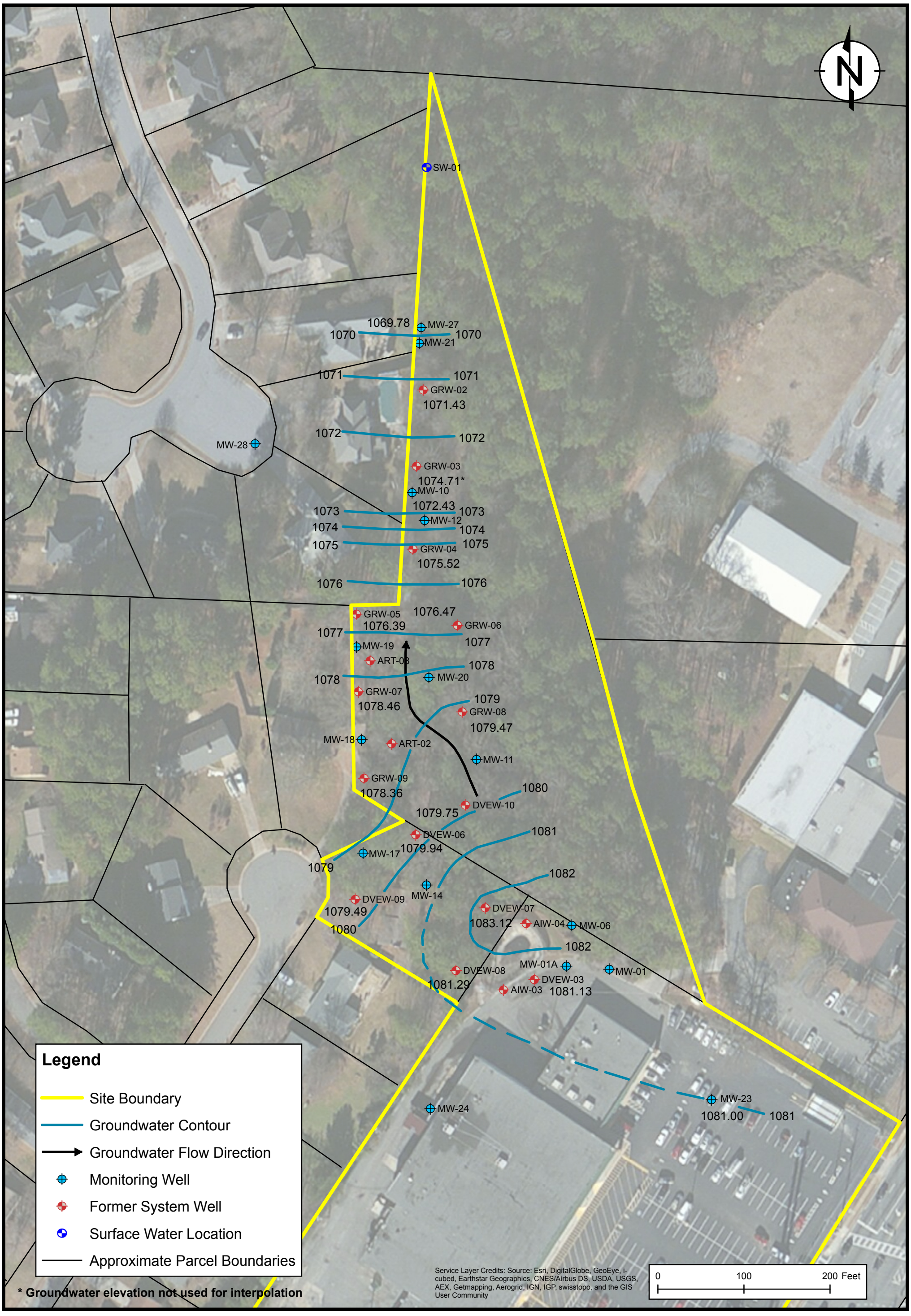
The Corners Shopping Center
Marietta, Georgia

Figure
2

DRAFTED BY: hthompson

DATE: 6/24/2015

07-35252C



RAMBOLL ENVIRON

DRAFTED BY: hthompson

DATE: 6/26/2015

Shallow Potentiometric Surface Map
February 2015

The Corners Shopping Center
Marietta, Georgia

Figure
3

07-35252C

SW-01
MW-27
MW-21
1070.22
1071
1071
1072
1072
GRW-02
1073
1073
MW-28
1073.71
GRW-03
1074
1074
MW-10
MW-12
GRW-04
1075
1075
GRW-05
GRW-06
MW-19
1075.33
ART-03
1076
MW-20
1076.12
1076
GRW-07
GRW-08
1077
MW-18
1076.74
ART-02
MW-11
1077
GRW-09
1078
DVEW-10
DVEW-06
1079
MW-17
1077.78
1078
1079
1080
MW-14
1080.35
DVEW-09
1080
DVEW-07
AIW-04
MW-06
1080.57
1081
MW-01A
MW-01
DVEW-08
DVEW-03
AIW-03
1080.93
MW-23
MW-24
1081.01
1081

Legend

- Site Boundary
- Groundwater Contour
- Groundwater Flow Direction
- Monitoring Well
- Former System Well
- Surface Water Location
- Approximate Parcel Boundaries

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 100 200 Feet

RAMBOLL ENVIRON

Deep Potentiometric Surface Map
February 2015
The Corners Shopping Center
Marietta, Georgia

Figure
4

DRAFTED BY: hthompson

DATE: 6/26/2015

07-35252C

SW-01
17
MW-27
MW-21
GRW-02
7.4
MW-28
GRW-03
MW-10
< 5.0
< 5.0
MW-12
6.1
GRW-04
< 5.0
GRW-05
69
TW-05
GRW-06
MW-19
< 5.0
13
ART-03
MW-20
TW-04
GRW-07
< 5.0
< 5.0
7.7
GRW-08
< 5.0
MW-18
ART-02
MW-11
5
GRW-09
18
TW-03
210
DVEW-10
< 5.0
TW-02
DVEW-06
250
MW-17
TW-01
MW-14**
< 5.0
53
DVEW-09
100
DVEW-07
50
20
AIW-04
MW-06
< 5.0
< 5.0
MW-01A
DVEW-08
MW-01
DVEW-03
AIW-03
5.6
8.5
MW-24
MW-23
N
0
100
200 Feet
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

LEGEND

- Site Boundary
- 20 ppb PCE Concentration
- 50 ppb PCE Concentration
- 100 ppb PCE Concentration
- Monitoring Well
- Former System Well
- Temporary Well
- Surface Water Location
- Approximate Parcel Boundaries

** Not Included in Isoconcentration

RAMBOLL ENVIRON

Shallow PCE Isoconcentration Map
February 2015

The Corners Shopping Center
Marietta, Georgia

Figure
5

DRAFTED BY: hthompson

DATE: 6/26/2015

07-35252C

A

A'

MW-23
DVEW-2*
AIW-2*
MW-1A
MW-6
MW-16
AIW-5*
MW-11
MW-20
GRW-4
MW-12
GRW-3
TW-4
MW-27
GRW-1
MW-13

1100
1090
1080
1070
1060
1050
1040
1030
1020

PCE - ND
TCE - ND
DCE - ND

PCE - ND
TCE - ND
DCE - ND

PCE - 13
TCE - ND
DCE - ND

PCE - ND
TCE - ND
DCE - ND

PCE - ND
TCE - ND
DCE - ND

PCE - 17
TCE - ND
DCE - ND

LEGEND

* - ABANDONED WELL

PCE - TETRACHLOROETHENE

TCE - TRICHLOROETHENE

DCE - DICHLOROETHENE

- SCREENED INTERVAL

10
SCALE
IN
FEET
0
75

NOTE: LABORATORY TESTING DATA PRESENTED REPRESENTS THE MOST RECENT SAMPLING EVENT FOR EACH WELL.

RAMBOLL ENVIRON

DRAFTED BY: APR | DATE: 6/4/15

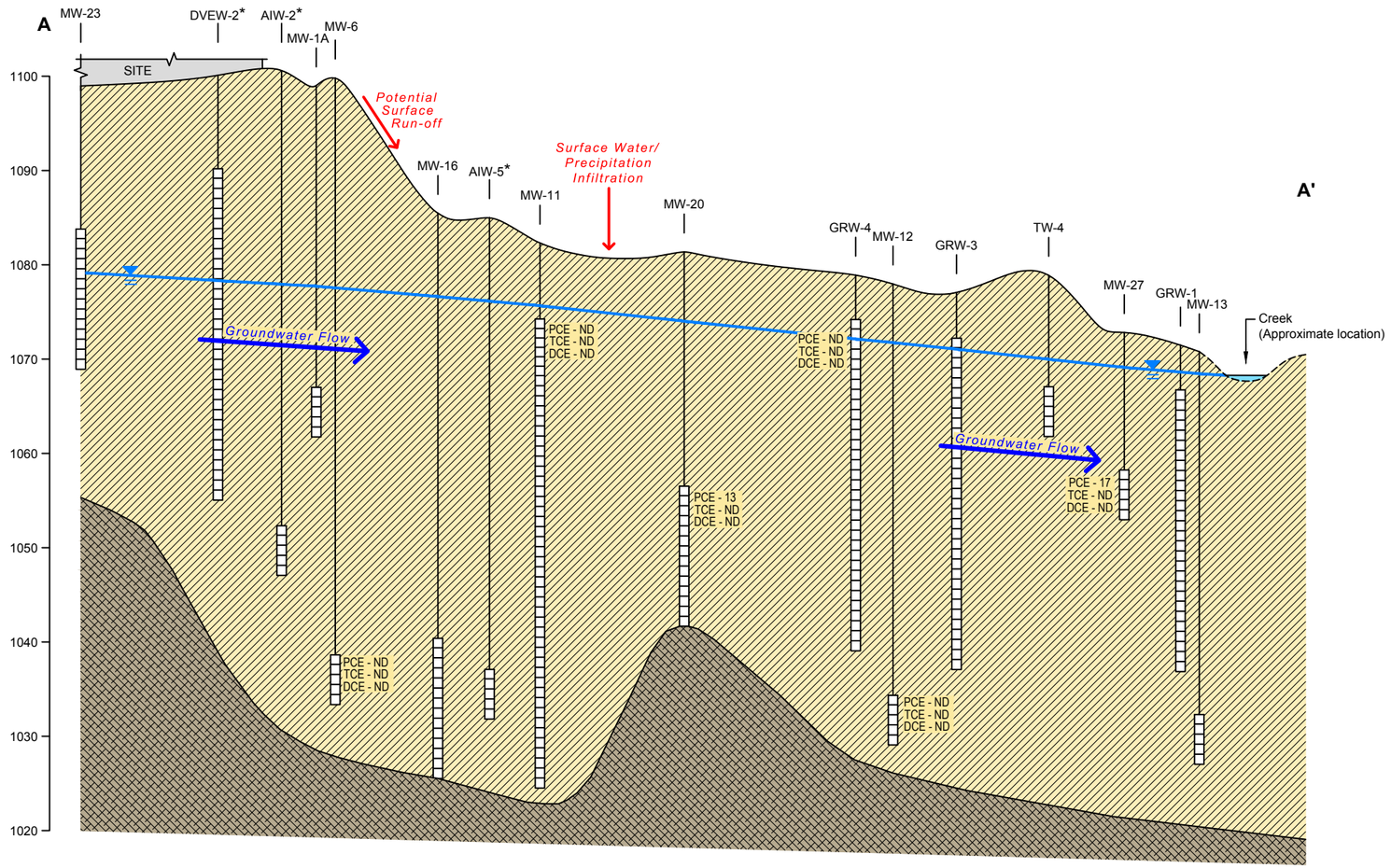
CROSS-SECTION A-A', FEBRUARY 2015

THE CORNERS SHOPPING CENTER
MARIETTA, GEORGIA

FIGURE
6

0735252C

PRAMIREZ 6/4/15 C:\USERS\PRODRIGUEZ.ENVIRONCORP\DESKTOP\PROJECTS\07\CORNERS_SG SURVEY, VRP, & GW MON 0735252C < 06_CROSS-SECTION A-A', FEB 2015 >



LEGEND

* - ABANDONED WELL

PCE - TETRACHLOROETHENE

TCE - TRICHLOROETHENE

DCE - DICHLOROETHENE

- SCREENED INTERVAL

WATER TABLE

SOIL / SAPROLITE

BEDROCK

NOTE:

LABORATORY TESTING DATA PRESENTED REPRESENTS THE MOST RECENT SAMPLING EVENT FOR EACH WELL.

15

SCALE IN FEET

0 112.5

C:\Users\prodriguez.ENVIRONCORP\Desktop\Projects\07\Corners_SG Survey, VRP, & GW Mon 0735252C <

RAMBOLL ENVIRON

DRAFTED BY: APR | DATE: 6/17/15

CONCEPTUAL SITE MODEL (3D)

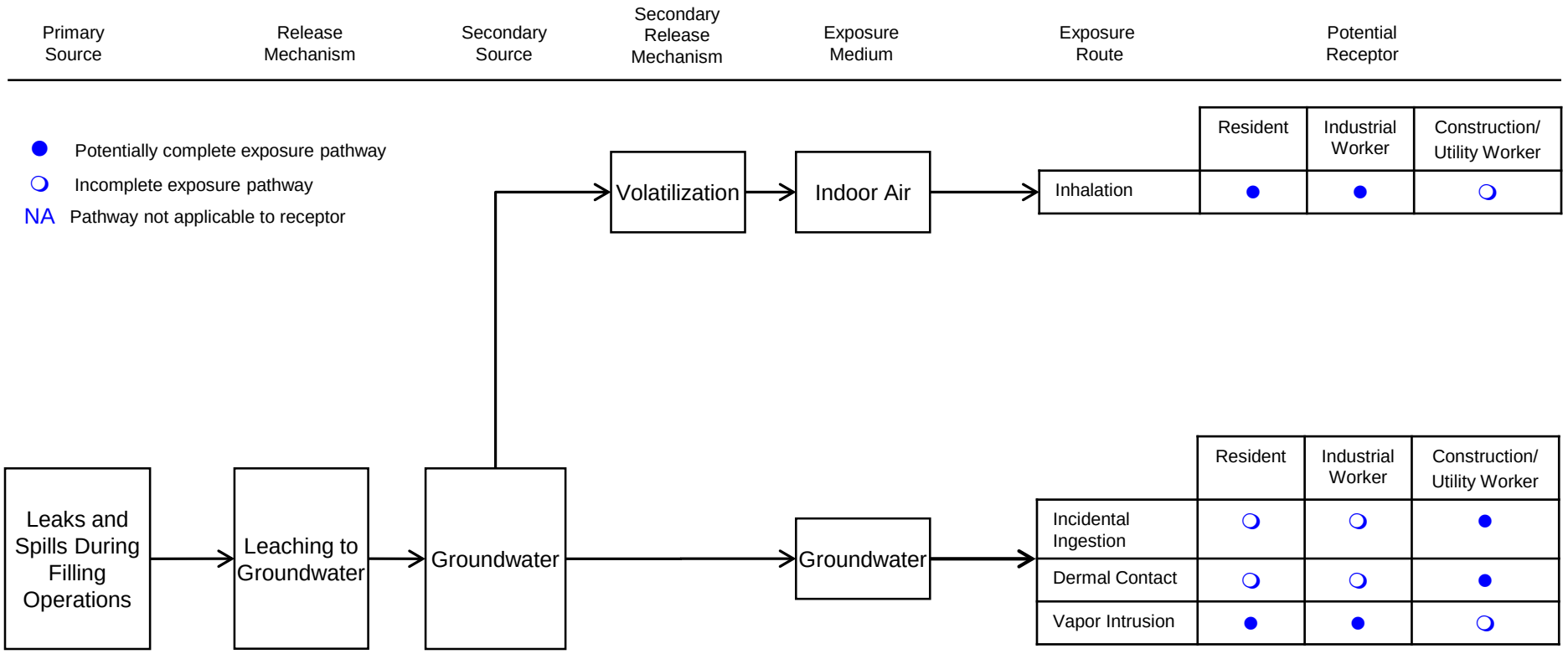
THE CORNERS SHOPPING CENTER

MARIETTA, GEORGIA

FIGURE

7

0735252C



RAMBOLL ENVIRON

CONCEPTUAL SITE MODEL
THE CORNERS SHOPPING CENTER
MARIETTA, GEORGIA

Figure 8

DRAFTED BY: MJA

DATE: 6/10/15

Attachment A

VRP Application Form and Checklist

Voluntary Investigation and Remediation Plan Application Form and Checklist

VRP APPLICANT INFORMATION					
COMPANY NAME	MSC Naples, LLC				
CONTACT PERSON/TITLE	Mr. Glen Howell				
ADDRESS	4000 Blue Ridge Rd.; Suite 100, Raleigh, NC 27612				
PHONE	919-247-6354	**FAX**		**E-MAIL**	howell.glenn@gmail.com

GEORGIA CERTIFIED PROFESSIONAL GEOLOGIST OR PROFESSIONAL ENGINEER OVERSEEING CLEANUP					
NAME	Keith Cole			**GA PE/PG NUMBER**	PE #21809
COMPANY	Ramboll Environ US				
ADDRESS	1600 Parkwood Circle, Suite 310, Atlanta, Georgia 30339				
PHONE	678-388-1648	**FAX**	770-874-5011	**E-MAIL**	kcole@environcorp.com

APPLICANT'S CERTIFICATION

In order to be considered a qualifying property for the VRP:

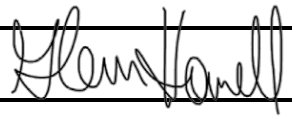
(1) The property must have a release of regulated substances into the environment;
(2) The property shall not be:
- (A) Listed on the federal National Priorities List pursuant to the federal Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601.
- (B) Currently undergoing response activities required by an order of the regional administrator of the federal Environmental Protection Agency; or
- (C) A facility required to have a permit under Code Section 12-8-66.

(3) Qualifying the property under this part would not violate the terms and conditions under which the division operates and administers remedial programs by delegation or similar authorization from the United States Environmental Protection Agency.
(4) Any lien filed under subsection (e) of Code Section 12-8-96 or subsection (b) of Code Section 12-13-12 against the property shall be satisfied or settled and released by the director pursuant to Code Section 12-8-94 or Code Section 12-13-6.

In order to be considered a participant under the VRP:
- (1) The participant must be the property owner of the voluntary remediation property or have express permission to enter another's property to perform corrective action.
- (2) The participant must not be in violation of any order, judgment, statute, rule, or regulation subject to the enforcement authority of the director.

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

I also certify that this property is eligible for the Voluntary Remediation Program (VRP) as defined in Code Section 12-8-105 and I am eligible as a participant as defined in Code Section 12-8-106.

APPLICANT'S SIGNATURE			
APPLICANT'S NAME/TITLE (PRINT)	Glenn Howell, Member	**DATE**	July 10, 2015

QUALIFYING PROPERTY INFORMATION (For additional qualifying properties, please refer to the last page of application form)			
HAZARDOUS SITE INVENTORY INFORMATION (if applicable)			
HSI Number	10326	Date HSI Site listed	June 29, 1994
HSI Facility Name	Corners Shopping Center	NAICS CODE	
PROPERTY INFORMATION			
TAX PARCEL ID	16055700530,16055700120,16055700200	PROPERTY SIZE (ACRES)	2.7, 1.14, 0.42 (total 4.26)
PROPERTY ADDRESS	2745 Sandy Plains Road		
CITY	Marietta	COUNTY	Cobb
STATE	Georgia	ZIPCODE	30060
LATITUDE (decimal format)	34° 01' 04" N	LONGITUDE (decimal format)	84° 29' 33"W
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)	MSC Naples, LLC	PHONE #	919-247-6354
MAILING ADDRESS	4000 Blue Ridge Rd.		
CITY	Raleigh	STATE/ZIPCODE	NC 27612

ITEM #	DESCRIPTION OF REQUIREMENT	Location in VRP (i.e. pg., Table #, Figure #, etc.)	For EPD Comment Only (Leave Blank)
1.	**$5,000 APPLICATION FEE** IN THE FORM OF A CHECK PAYABLE TO THE GEORGIA DEPARTMENT OF NATURAL RESOURCES. (PLEASE LIST CHECK DATE AND CHECK NUMBER IN COLUMN TITLED "LOCATION IN VRP." PLEASE DO NOT INCLUDE A SCANNED COPY OF CHECK IN ELECTRONIC COPY OF APPLICATION.)		
2.	**WARRANTY DEED(S)** FOR QUALIFYING PROPERTY.	Attachment A	
3.	**TAX PLAT** OR OTHER FIGURE INCLUDING QUALIFYING PROPERTY BOUNDARIES, ABUTTING PROPERTIES, AND TAX PARCEL IDENTIFICATION NUMBER(S).	Appendix A	
4.	**ONE (1) PAPER COPY AND TWO (2) COMPACT DISC (CD) COPIES** OF THE VOLUNTARY REMEDIATION PLAN IN A SEARCHABLE PORTABLE DOCUMENT FORMAT (PDF).	Included	
5.	The VRP participant's initial plan and application must include, using all reasonably available current information to the extent known at the time of application, a graphic three-dimensional preliminary conceptual site model (CSM) including a preliminary remediation plan with a table of delineation standards, brief supporting text, charts, and figures (no more than 10 pages, total) that illustrates the site's surface and subsurface setting, the known or suspected source(s) of contamination, how contamination might move within the environment, the potential human health and ecological receptors, and the complete or incomplete exposure pathways that may exist at the site; the preliminary CSM must be updated as the investigation and remediation progresses and an up-to-date CSM must be included in each semi-annual status report submitted to the director by the participant; a **PROJECTED MILESTONE SCHEDULE** for investigation and remediation of the site, and after enrollment as a participant, must update the schedule in each semi-annual status report to the director describing implementation of the plan	CSM - Figure 7 Delineation Standard for PCE = 5 ug/L (Table 2) Text, charts, and figures - Attached Projected Milestone Schedule - Section 7	

	during the preceding period. A Gantt chart format is preferred for the milestone schedule. The following four (4) generic milestones are required in all initial plans with the results reported in the participant's next applicable semi-annual reports to the director. The director may extend the time for or waive these or other milestones in the participant's plan where the director determines, based on a showing by the participant, that a longer time period is reasonably necessary:		
5.a.	Within the first 12 months after enrollment, the participant must complete horizontal delineation of the release and associated constituents of concern on property where access is available at the time of enrollment;	Completed - Section 4	
5.b.	Within the first 24 months after enrollment, the participant must complete horizontal delineation of the release and associated constituents of concern extending onto property for which access was not available at the time of enrollment;	Completed - Section 4	
5.c.	Within 30 months after enrollment, the participant must update the site CSM to include vertical delineation, finalize the remediation plan and provide a preliminary cost estimate for implementation of remediation and associated continuing actions; and		
5.d.	Within 60 months after enrollment, the participant must submit the compliance status report required under the VRP, including the requisite certifications.		
6.	**SIGNED AND SEALED PE/PG CERTIFICATION** AND SUPPORTING DOCUMENTATION: "I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et seq.). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board of Registration for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances. Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." Keith Cole #21809 Printed Name and GA PE/PG Number 7/10/15 Date 7/10/15 Signature and Stamp		

ADDITIONAL QUALIFYING PROPERTIES (COPY THIS PAGE AS NEEDED)

PROPERTY INFORMATION			
TAX PARCEL ID		PROPERTY SIZE (ACRES)	
PROPERTY ADDRESS			
CITY		COUNTY	
STATE		ZIPCODE	
LATITUDE (decimal format)		LONGITUDE (decimal format)	
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)		PHONE #	
MAILING ADDRESS			
CITY		STATE/ZIPCODE	

PROPERTY INFORMATION			
TAX PARCEL ID		PROPERTY SIZE (ACRES)	
PROPERTY ADDRESS			
CITY		COUNTY	
STATE		ZIPCODE	
LATITUDE (decimal format)		LONGITUDE (decimal format)	
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)		PHONE #	
MAILING ADDRESS			
CITY		STATE/ZIPCODE	

PROPERTY INFORMATION			
TAX PARCEL ID		PROPERTY SIZE (ACRES)	
PROPERTY ADDRESS			
CITY		COUNTY	
STATE		ZIPCODE	
LATITUDE (decimal format)		LONGITUDE (decimal format)	
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)		PHONE #	
MAILING ADDRESS			
CITY		STATE/ZIPCODE	

Appendix A

Legal Description and Warranty Deed

LEGAL DESCRIPTION

ALL THAT TRACT OR PARCEL LYING AND BEING IN LAND LOTS 524 AND 557, OF THE 16TH DISTRICT, 2ND SECTION, COBB COUNTY, GEORGIA AND BEING MORE PARTICULARLY DESCRIBED AS:

COMMENCING AT THE NORTHWEST CORNER OF LAND LOT 557; THENCE ALONG THE NORTH LINE OF LAND LOT 557, S87°36'36"E A DISTANCE OF 444.61 FEET TO THE TRUE POINT OF BEGINNING; THENCE, S87°36'36"E A DISTANCE OF 47.39 FEET TO A POINT; THENCE, N 4°52'18" E A DISTANCE OF 506.36 FEET TO A POINT;THENCE, S 14°41'27" E A DISTANCE OF 928.35 FEET TO A POINT; THENCE, S 56°29'2" E A DISTANCE OF 215.38 FEET TO A POINT ON THE WEST RIGHT OF WAY OF SANDY PLAINS ROAD (RIGHT OF WAY VARIES); THENCE ALONG SAID RIGHT OF WAY, S 33°27'24" W A DISTANCE OF 55.70 FEET TO A POINT; THENCE LEAVING SAID RIGHT OF WAY, N 56°32'36" W A DISTANCE OF 151.23 FEET TO A POINT; THENCE, S 34°27'46" W A DISTANCE OF 96.01 FEET TO A POINT; THENCE, N 55°32'14" W A DISTANCE OF 265.11 FEET TO A POINT; THENCE, N 33°54'21" E A DISTANCE OF 28.28 FEET TO A POINT; THENCE, N 55°56'14.169 W A DISTANCE OF 158.33 FEET TO A POINT; THENCE, ALONG A CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 50.39 FEET, A DELTA ANGLE OF 61.63, AND A CHORD OF N 2°54'60" E A CHORD DISTANCE OF 51.62 FEET TO A POINT; THENCE, N 61°58'47" E A DISTANCE OF 83.65 FEET TO A POINT; THENCE, N 56°22'13" W A DISTANCE OF 53.61 FEET TO A POINT; THENCE, N 2°37'52" E A DISTANCE OF 174.10 FEET TO THE POINT; OF BEGINNING.

SAID DESCRIBED BEING SHOWN ON A SURVEY BY LCE ENGINEERS INC. DATED 11/18/88, SAID PARCEL CONTAINS 185512.68 SQUARE FEET (4.26 ACRES), MORE OR LESS, SUBJECT TO ANY AND ALL EASEMENTS, RESERVATIONS, RESTRICTIONS AND CONVEYANCES OF RECORD.

Appendix B

Groundwater Model

Simulation Report for PCE Fate and Transport

Corners Shopping Center

Marietta, Georgia

1. Simulation Tool

BIOCHLOR is a screening tool developed based on the Domenico analytical solute transport model with the ability to simulate contaminant transport with one-dimensional advection, three-dimensional dispersion, linear adsorption, and sequential biodegradation (Aziz et al, 2000). The advantage of BIOCHLOR over other screening models, and other analytic solutions, is that it can simulate sequential decay processes. For simulations of fate and transport at the Site, the model domain is assumed to be two-dimensional so that dilution due to vertical dispersion in the plume is ignored. This is a conservative assumption since in reality dilution due to vertical dispersion would occur.

2. Assumptions and Parameter Values in the Simulation

Due to the several rounds of remediation activities historically conducted at the Site, the most recent round of groundwater samples collected from the Site in February 2015 indicated three discrete hot spots: DVEW-7, MW-19, and MW-27. Therefore, fate and transport simulations were conducted regarding each one of the three source locations to determine the maximum extent of the plume.

From the most recent round of groundwater sampling results, it is also noticed that no PCE degradation products (i.e., TCE, DCE, and VC) were detected except at the location of TW-02. This could be possibly caused by faster decay rates of these degradation products that the rates that they were generated. Accordingly, only the fate and transport of PCE was simulated in this study.

Comparison of groundwater sampling results from May and July 2014 to those from February 2015 shows that there is an overall decreasing trend in the PCE concentration. PCE first-order decay rates were calculated for various sampling locations, as listed in Table 1. The decay rates vary from 0.486/year to 2.986/year. A first order decay rate of 0.486/year was used in the fate and transport simulation, as (1) it was derived from the most recent rounds of groundwater sampling and therefore it can present the current site condition; and (2) it's the lowest calculated the decay rate and will yield a conservative estimate of the PCE plumes at the Site. It's also noted that this decay rate (i.e., 0.486/year) falls between the minimum and maximum groundwater decay rates in literature (i.e., 0.347/year to 0.693/year; Howard et al., 1991).

Table 1. Calculated PCE First Order Decay Rates at Various Sampling Locations

Well	Date of Sampling	PCE Concentration (ppb)	Date of Sampling	PCE Concentration (ppb)	Calculated Decay Rate (1/day)	Calculated Decay Rate (1/year)
MW-17	7/9/2014	70	2/3/2015	53	0.0013	0.486
GRW-5	5/27/2014	29	2/5/2015	6.1	0.0061	2.240
DVEW-6	5/27/2014	110	2/3/2015	14	0.0082	2.986
DVEW-7	5/27/2014	630	2/2/2015	250	0.0037	1.344
DVEW-8	7/9/2014	7.8	2/3/2015	5.6	0.0016	0.579
ART-2	5/26/2014	45	2/5/2015	7.7	0.0069	2.527

For the simulation, decaying PCE sources were also assumed. Given all the other parameter values used in the simulation, a maximum source decay rate of 0.348/year was allowed in BIOCHLORE, which is smaller than the 0.486/year decay rate, and therefore will provide a conservative estimate of the PCE concentration at the source locations.

Other hydrogeology and soil property values used in the simulations were obtained from either field measurement or commonly adopted values. A summary of these parameter values are listed in Table 2.

3. Simulation of PCE Plumes

To estimate the extent and magnitude of the PCE plumes at the Site, the PCE distributions along the center of plumes were simulated till no exceedance of Type 1 RRS (5 ug/L) is reached. PCE concentrations detected from the most recent groundwater sampling round were used as source concentrations (i.e., 250 ug/L at DVEW-7, 69 ug/L at MW-19, and 17 ug/L at MW-27). Concentration distributions of PCE plumes migrating from DVEW-7, MW-19, and MW-27 are shown in Tables 3, 4, and 5, respectively. A summary of these results is shown in Table 6. Snapshots of BIOCHLOR input are illustrated in Figures 1 through 3.

Table 6. Summary of PCE Fate and Transport Simulation Results

Source Location	Maximum Plume Extent (ft)	Time to Reach Maximum Extent (years from 2015)	Time to Reach Compliance (years from 2015)
DVEW-7	<800	16	18
MW-19	<450	10	12
MW-27	<150	3.5	4.5

4. Summary

In this report, the concentration distribution and PCE at the Site is studied by using fate and transport simulations. For maximum protection, parameter values used in the simulations were selected conservatively. According to the simulation results, the maximum length of PCE plumes migrating from DVEW-7, MW-19 and MW-27 would be <800 feet, <450 feet, and < 150 feet, respectively. The PCE plumes originated from DVEW-7, MW-19, and MW-27 could reach compliance (i.e., below 5 ug/L) by degradation in 18, 12, and 4.5 years from 2015.

5. References

Aziz, C.E., C.J. Newell, J.R. Gonzales, P. Haas, T.P. Clement, and Y. Sun. 2000. BIOCHLOR Natural Attenuation Decision Support System User's Manual. USEPA Office of Research and Development.

Howard et al.. 1991. Handbook of Environmental Degradation Rates. Lewis Publishers.

McWhorter. D.B. and D.K. Sunada. 1977. Ground-Water Hydrology and Hydraulics. Water Resources Publications, Colorado.

USEPA. 1996. Soil Screening Guidance: Technical Background Document and User Guide. Office of Emergency and Remedial Response. EPA/540/R-95/128. May.

Figure 1. Simulation Input for Source at DVEW-7

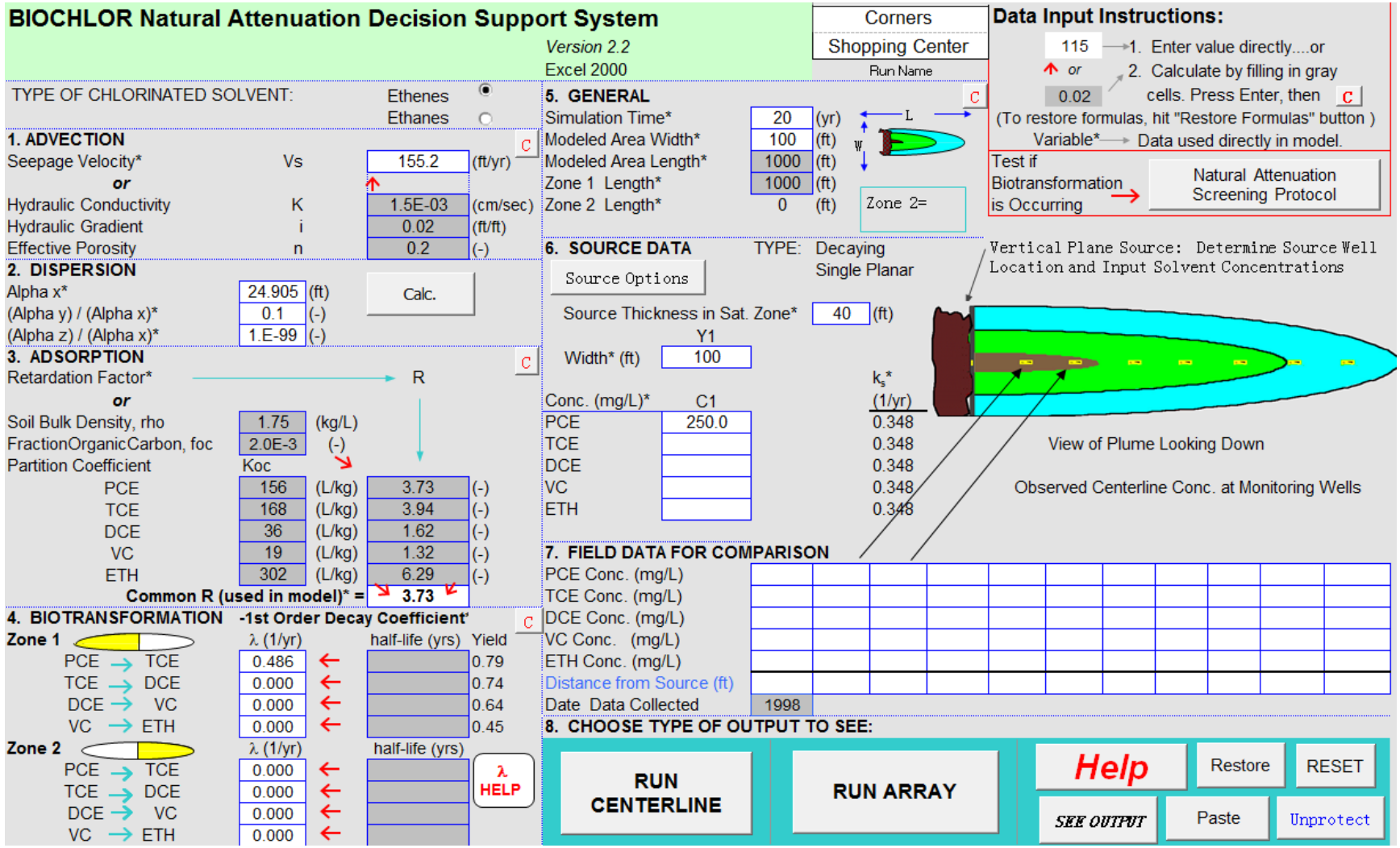


Figure 2. Simulation Input for Source at MW-19

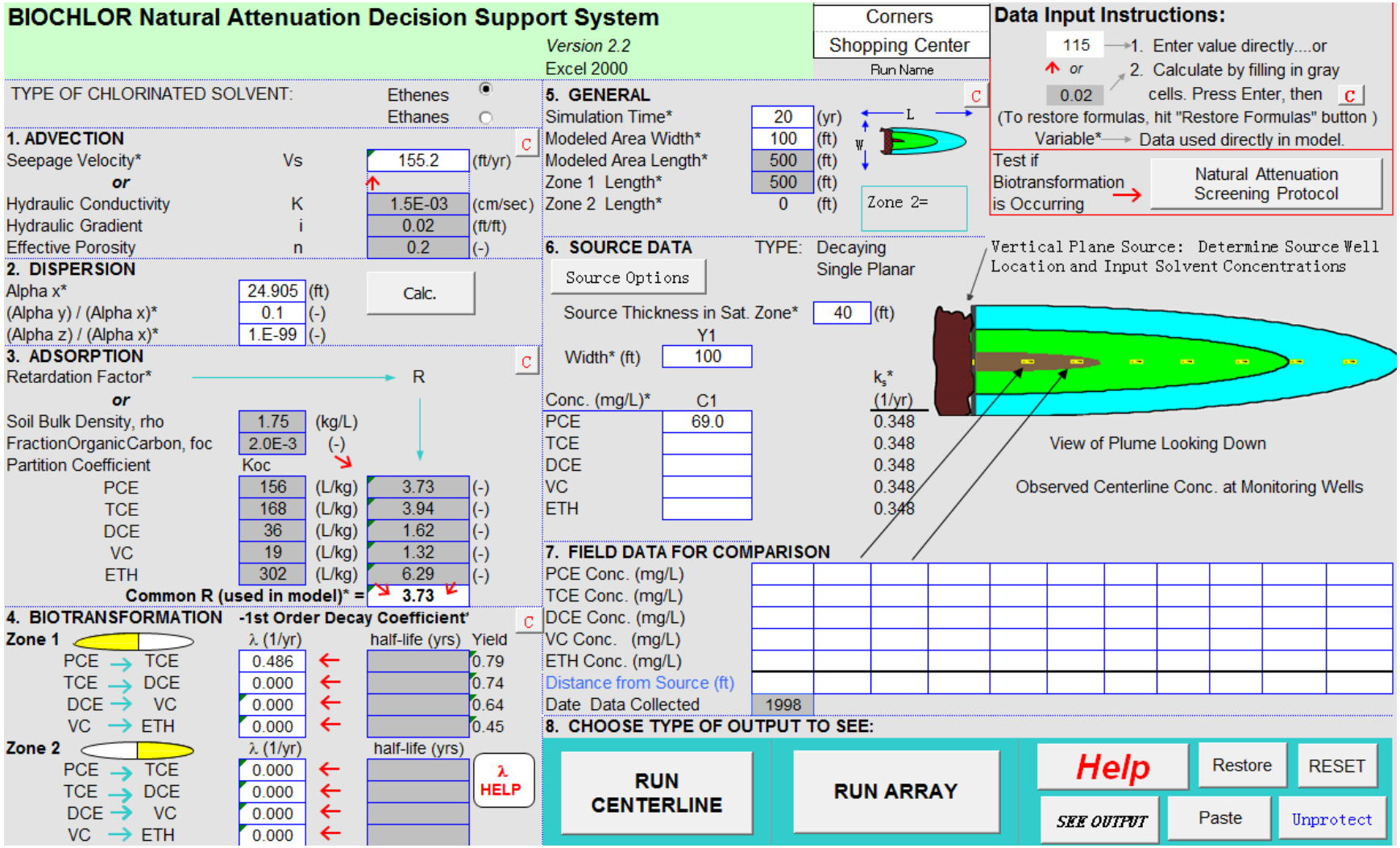


Figure 3. Simulation Input for Source at MW-27

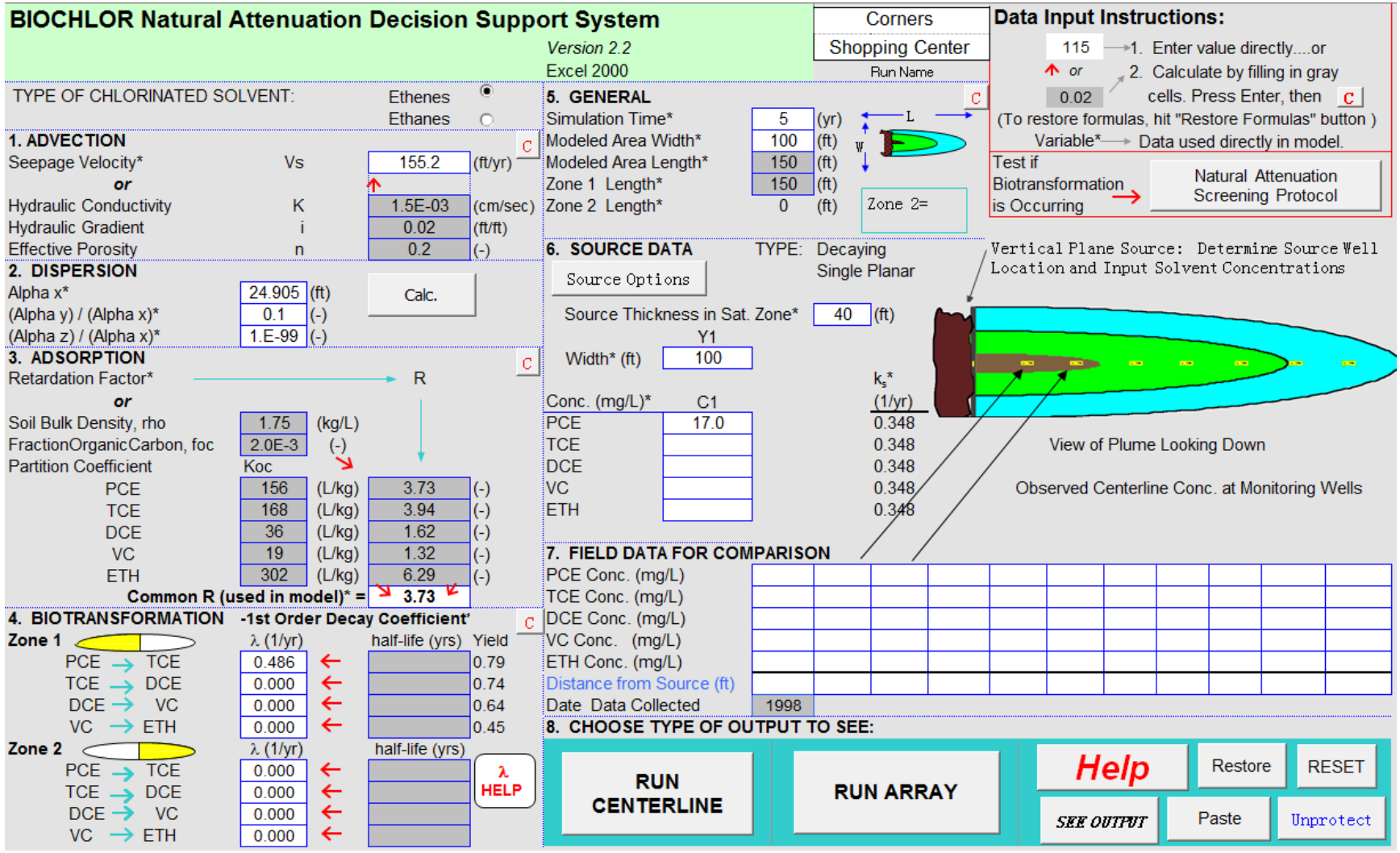


Table 2. Parameter Values Used in the Fate and Transport Simulations

Parameter	Unit	Value	Data Source
Hydraulic Conductivity	cm/sec	1.5E-03	Historical slug test results
Hydraulic Gradient	ft/ft	0.02	Average hydraulic gradient at the Site determined based on water level measurements from July 2014 and February 2015
Effective Porosity	-	0.2	Arithmetic mean for effective porosities in Silt in McWorter and Sunada (1977)
Longitudinal Dispersivity	ft	24.9	Calculated using Xu and Eckstein, 1995 equation by assuming a plume size of 1000 ft
Transverse Dispersivity	ft	2.49	1/10 of Longitudinal Dispersivity
Vertical Dispersivity	ft	2.5E-98	Assumed no vertical dispersion
Soil Bulk Density	kg/L	1.75	Commonly used value
Fraction Organic Carbon	-	2.0E-3	Commonly used value
Koc of PCE	L/kg	156	USEPA, 1996
PCE Decay Rate	1/year	0.486	See text
Source Decay Rate	1/year	0.348	See text Maximum rate allowed in the simulation, conservative
Source Thickness	ft	40	Domain is assumed to be two-dimensional (no impact on results).
Width of Source	ft	100	Estimated value based on field sampling results

Table 3. PCE Concentration Distribution along Center of Plume from DVEW-7 (ug/L)

Distance (ft)	0	100	200	300	400	500	600	700	800	900	1000
2 Year	124.64	83.61	8.24	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 Year	62.14	80.06	46.57	10.18	0.76	0.02	0.00	0.00	0.00	0.00	0.00
6 Year	30.98	48.17	48.36	27.66	8.18	1.18	0.08	0.00	0.00	0.00	0.00
8 Year	15.45	25.92	33.08	29.68	17.13	5.99	1.22	0.14	0.01	0.00	0.00
10 Year	7.70	13.39	19.30	22.13	18.69	10.93	4.25	1.07	0.17	0.02	0.00
12 Year	3.84	6.80	10.47	13.87	14.82	12.04	7.12	2.99	0.87	0.18	0.02
14 Year	1.91	3.42	5.47	7.91	9.86	9.99	7.89	4.72	2.09	0.68	0.17
16 Year	0.95	1.72	2.80	4.28	5.91	6.99	6.78	5.25	3.16	1.46	0.51
18 Year	0.48	0.86	1.42	2.25	3.32	4.38	4.95	4.64	3.53	2.14	1.02
20 Year	0.24	0.43	0.71	1.16	1.79	2.55	3.22	3.50	3.19	2.40	1.47

Table 4. PCE Concentration Distribution along Center of Plume from MW-19 (ug/L)

Distance (ft)	0	50	100	150	200	250	300	350	400	450	500
2 Year	34.40	34.48	23.08	9.44	2.28	0.32	0.02	0.00	0.00	0.00	0.00
4 Year	17.15	21.06	22.10	18.88	12.85	6.84	2.81	0.88	0.21	0.04	0.01
6 Year	8.55	11.12	13.30	14.19	13.35	10.91	7.63	4.53	2.26	0.94	0.33
8 Year	4.26	5.67	7.15	8.40	9.13	9.09	8.19	6.61	4.73	2.98	1.65
10 Year	2.13	2.86	3.70	4.55	5.33	5.90	6.11	5.86	5.16	4.14	3.02
12 Year	1.06	1.43	1.88	2.37	2.89	3.40	3.83	4.08	4.09	3.83	3.32
14 Year	0.53	0.72	0.94	1.21	1.51	1.84	2.18	2.49	2.72	2.82	2.76
16 Year	0.26	0.36	0.47	0.61	0.77	0.97	1.18	1.41	1.63	1.81	1.93
18 Year	0.13	0.18	0.24	0.31	0.39	0.50	0.62	0.76	0.92	1.07	1.21
20 Year	0.07	0.09	0.12	0.15	0.20	0.25	0.32	0.40	0.49	0.60	0.70

Table 5. PCE Concentration Distribution along Center of Plume from MW-27 (ug/L)

Distance (ft)	0	15	30	45	60	75	90	105	120	135	150
0.5 Year	14.29	12.01	8.72	5.36	2.75	1.17	0.41	0.12	0.03	0.01	0.00
1 Year	12.00	11.51	10.34	8.62	6.62	4.65	2.97	1.73	0.91	0.44	0.19
1.5 Year	10.09	10.16	9.85	9.13	8.03	6.68	5.25	3.87	2.69	1.75	1.07
2 Year	8.48	8.77	8.83	8.63	8.13	7.37	6.40	5.32	4.23	3.21	2.33
2.5 Year	7.12	7.48	7.72	7.78	7.64	7.27	6.71	5.99	5.16	4.29	3.45
3 Year	5.98	6.36	6.66	6.85	6.90	6.79	6.52	6.09	5.54	4.89	4.20
3.5 Year	5.03	5.38	5.69	5.94	6.10	6.14	6.06	5.85	5.52	5.09	4.58
4 Year	4.23	4.55	4.85	5.11	5.32	5.44	5.48	5.41	5.25	4.99	4.65
4.5 Year	3.55	3.83	4.11	4.37	4.59	4.76	4.86	4.89	4.84	4.71	4.51
5 Year	2.98	3.23	3.48	3.72	3.94	4.12	4.26	4.34	4.37	4.33	4.23

Appendix C

Groundwater and Surface Water Data

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

July 18, 2014

Ken Nye
ENVIRON International Corp.
1600 Parkwood Circle
Atlanta GA 30339

TEL: (770) 874-5010
FAX: (770) 874-8011

RE: Corners Shopping Center

Dear Ken Nye: Order No: 1407B83

Analytical Environmental Services, Inc. received 28 samples on 7/14/2014 2:08:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Tara Esbeck

Tara Esbeck
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive; Atlanta, GA 30340
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1407883

Date: 07/14/2014 Page 1 of 2

COMPANY:	ADDRESS:
ENVIRON	1600 Parkwood Circle Suite 310 Atlanta, GA 30339
PHONE: 770-874-5010	FAX: 770-874-5011
SAMPLED BY: K. Nye, H. Thompson, J. Rose, K. Hade	SIGNATURE:

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	Chlorinated VOCs (8260)	PRESERVATION (See codes)	REMARKS	No # of Containers
								H+I		
1	AIW-01 20140711	07/11/2014	1242	X		GW	X	X		2
2	AIW-02 20140711	07/11/2014	1404	X		GW	X	X		2
3	AIW-03 20140711	07/11/2014	1118	X		GW	X	X		2
4	AIW-05 20140710	07/10/2014	1940	X		GW	X	X		2
5	DVEW-01 20140708	07/08/2014	1750	X		GW	X	X		2
6	DVEW-02 20140708	07/08/2014	1852	X		GW	X	X		2
7	DVEW-03 20140708	07/08/2014	1650	X		GW	X	X		2
8	DVEW-04 20140710	07/10/2014	1613	X		GW	X	X		2
9	DVEW-05 20140710	07/10/2014	1647	X		GW	X	X		2
10	DVEW-06 20140709	07/09/2014	1745	X		GW	X	X		2
11	DVEW-08 20140709	07/09/2014	1925	X		GW	X	X		2
12	DVEW-09 20140709	07/09/2014	1500	X		GW	X	X		2
13	DVEW-10 20140709	07/09/2014	1112	X		GW	X	X		2
14	GRW-02 20140710	07/10/2014	1103	X		GW	X	X		2

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1:	7-14-14/1130	1:	7-14-14 11:30
2:	7-14-14 14:08	2:	7/14/14 14:08
3:		3:	

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
CLIENT FedEx UPS MAIL COURIER
GREYHOUND OTHER_____

PROJECT INFORMATION

PROJECT NAME: CSC
PROJECT #: 07-35252B
SITE ADDRESS: Marietta, Georgia
SEND REPORT TO: K. Nye
INVOICE TO:
(IF DIFFERENT FROM ABOVE)
QUOTE #:_____ PO#:_____

RECEIPT
Total # of Containers: 28

Turnaround Time Request
- (●) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush (auth req.)
- ( ) Other _____

STATE PROGRAM (if any): _____
E-mail? Y / N; Fax? Y / N
DATA PACKAGE: I II III IV

SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS STANDARD TAT.

SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) O = Other (specify)

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None White Copy - Original; Yellow Copy - Client

ANALYTICAL ENVIRONMENTAL SERVICES, INC
3080 Presidential Drive; Atlanta, GA 30340
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1407B83

Date: 07/14/2014 Page 2 of 2

COMPANY:	ADDRESS:
ENVIRON	1600 Parkwood Circle Suite 310 Atlanta, GA 30339
PHONE: 770-874-5010	FAX: 770-874-5011
SAMPLED BY: K. Nye, H. Thompson, J. Rose, K. Hade	SIGNATURE:

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	ANALYSIS REQUESTED: Chlorinated VOCs (8260)	PRESERVATION (See codes): H+I	REMARKS	No # of Containers
1	GRW-03 20140709	07/09/2014	2003	X		GW	X			2
2	GRW-06 20140709	07/09/2014	1740	X		GW	X			2
3	GRW-07 20140709	07/09/2014	1551	X		GW	X			2
4	GRW-08 20140709	07/09/2014	1243	X		GW	X			2
5	MW-01 20140708	07/08/2014	1540	X		GW	X			2
6	MW-11 20140709	07/09/2014	1252	X		GW	X			2
7	MW-17 20140709	07/09/2014	1615	X		GW	X			2
8	MW-20 20140709	07/09/2014	1126	X		GW	X			2
9	MW-21 20140710	07/10/2014	1244	X		GW	X			2
10	MW-24 20140711	07/11/2014	1044	X		GW	X			2
11	MW-27 20140710	07/10/2014	1118	X		GW	X			2
12	DUP-01 20140709	07/09/2014	---	X		GW	X			2
13	DUP-02 20140710	07/10/2014	---	X		GW	X			2
14	Trip Blank	---	---			W	X			2

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1:	7-14-14 / 1130	1:	7-14-14 11:30
2:	7-14-14 14:08	2:	7/14/14 14.08
3:		3:	

PROJECT INFORMATION

PROJECT NAME: CSC
PROJECT #: 07-35252B
SITE ADDRESS: Marietta, Georgia
SEND REPORT TO: K. Nye
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT

Total # of Containers: 28

Turnaround Time Request
- (●) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush (auth req.)
- ( ) Other

STATE PROGRAM (if any):
E-mail? Y / N; Fax? Y / N
DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
CLIENT FedEx UPS MAIL COURIER
GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS STANDARD TAT.

SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) O = Other (specify)

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	AIW-01 20140711
Project Name:	Corners Shopping Center	**Collection Date:**	7/11/2014 12:42:00 PM
Lab ID:	1407B83-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 01:13	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 01:13	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 01:13	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 01:13	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 01:13	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 01:13	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 01:13	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 01:13	GK
Surr: 4-Bromofluorobenzene	93.5	66.2-120		%REC	193732	1	07/17/2014 01:13	GK
Surr: Dibromofluoromethane	93.6	79.5-121		%REC	193732	1	07/17/2014 01:13	GK
Surr: Toluene-d8	96.1	77-117		%REC	193732	1	07/17/2014 01:13	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	AIW-02 20140711
Project Name:	Corners Shopping Center	**Collection Date:**	7/11/2014 2:04:00 PM
Lab ID:	1407B83-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 02:36	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 02:36	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 02:36	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 02:36	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 02:36	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 02:36	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 02:36	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 02:36	GK
Surr: 4-Bromofluorobenzene	93.4	66.2-120		%REC	193732	1	07/17/2014 02:36	GK
Surr: Dibromofluoromethane	92.3	79.5-121		%REC	193732	1	07/17/2014 02:36	GK
Surr: Toluene-d8	95.4	77-117		%REC	193732	1	07/17/2014 02:36	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	AIW-03 20140711
Project Name:	Corners Shopping Center	**Collection Date:**	7/11/2014 11:18:00 AM
Lab ID:	1407B83-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 03:04	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 03:04	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 03:04	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 03:04	GK
Tetrachloroethene	5.2	5.0		ug/L	193732	1	07/17/2014 03:04	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 03:04	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 03:04	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 03:04	GK
Surr: 4-Bromofluorobenzene	93.3	66.2-120		%REC	193732	1	07/17/2014 03:04	GK
Surr: Dibromofluoromethane	92.8	79.5-121		%REC	193732	1	07/17/2014 03:04	GK
Surr: Toluene-d8	93.9	77-117		%REC	193732	1	07/17/2014 03:04	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	AIW-05 20140710
Project Name:	Corners Shopping Center	**Collection Date:**	7/10/2014 7:40:00 PM
Lab ID:	1407B83-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 03:32	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 03:32	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 03:32	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 03:32	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 03:32	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 03:32	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 03:32	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 03:32	GK
Surr: 4-Bromofluorobenzene	93.8	66.2-120		%REC	193732	1	07/17/2014 03:32	GK
Surr: Dibromofluoromethane	93.1	79.5-121		%REC	193732	1	07/17/2014 03:32	GK
Surr: Toluene-d8	95.3	77-117		%REC	193732	1	07/17/2014 03:32	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	DVEW-01 20140708
Project Name:	Corners Shopping Center	**Collection Date:**	7/8/2014 5:50:00 PM
Lab ID:	1407B83-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 04:00	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:00	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 04:00	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:00	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:00	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:00	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:00	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 04:00	GK
Surr: 4-Bromofluorobenzene	95.3	66.2-120		%REC	193732	1	07/17/2014 04:00	GK
Surr: Dibromofluoromethane	92.9	79.5-121		%REC	193732	1	07/17/2014 04:00	GK
Surr: Toluene-d8	94.4	77-117		%REC	193732	1	07/17/2014 04:00	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	DVEW-02 20140708
Project Name:	Corners Shopping Center	**Collection Date:**	7/8/2014 6:52:00 PM
Lab ID:	1407B83-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 04:28	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:28	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 04:28	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:28	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:28	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:28	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:28	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 04:28	GK
Surr: 4-Bromofluorobenzene	97.2	66.2-120		%REC	193732	1	07/17/2014 04:28	GK
Surr: Dibromofluoromethane	92.6	79.5-121		%REC	193732	1	07/17/2014 04:28	GK
Surr: Toluene-d8	94.5	77-117		%REC	193732	1	07/17/2014 04:28	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	DVEW-03 20140708
Project Name:	Corners Shopping Center	**Collection Date:**	7/8/2014 4:50:00 PM
Lab ID:	1407B83-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 04:55	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:55	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 04:55	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:55	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:55	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:55	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 04:55	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 04:55	GK
Surr: 4-Bromofluorobenzene	94	66.2-120		%REC	193732	1	07/17/2014 04:55	GK
Surr: Dibromofluoromethane	91.4	79.5-121		%REC	193732	1	07/17/2014 04:55	GK
Surr: Toluene-d8	96.3	77-117		%REC	193732	1	07/17/2014 04:55	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	DVEW-04 20140708
Project Name:	Corners Shopping Center	**Collection Date:**	7/10/2014 4:13:00 PM
Lab ID:	1407B83-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 05:23	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 05:23	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 05:23	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 05:23	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 05:23	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 05:23	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 05:23	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 05:23	GK
Surr: 4-Bromofluorobenzene	94	66.2-120		%REC	193732	1	07/17/2014 05:23	GK
Surr: Dibromofluoromethane	92.2	79.5-121		%REC	193732	1	07/17/2014 05:23	GK
Surr: Toluene-d8	94.3	77-117		%REC	193732	1	07/17/2014 05:23	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	DVEW-05 20140710
Project Name:	Corners Shopping Center	**Collection Date:**	7/10/2014 4:47:00 PM
Lab ID:	1407B83-009	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 05:51	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 05:51	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 05:51	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 05:51	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 05:51	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 05:51	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 05:51	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 05:51	GK
Surr: 4-Bromofluorobenzene	93.7	66.2-120		%REC	193732	1	07/17/2014 05:51	GK
Surr: Dibromofluoromethane	91.6	79.5-121		%REC	193732	1	07/17/2014 05:51	GK
Surr: Toluene-d8	95.6	77-117		%REC	193732	1	07/17/2014 05:51	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	DVEW-06 20140709
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014 5:45:00 PM
Lab ID:	1407B83-010	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 06:19	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 06:19	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 06:19	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 06:19	GK
Tetrachloroethene	44	5.0		ug/L	193732	1	07/17/2014 06:19	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 06:19	GK
Trichloroethene	5.9	5.0		ug/L	193732	1	07/17/2014 06:19	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 06:19	GK
Surr: 4-Bromofluorobenzene	95.3	66.2-120		%REC	193732	1	07/17/2014 06:19	GK
Surr: Dibromofluoromethane	92	79.5-121		%REC	193732	1	07/17/2014 06:19	GK
Surr: Toluene-d8	95.5	77-117		%REC	193732	1	07/17/2014 06:19	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	DVEW-08 20140709
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014 7:25:00 PM
Lab ID:	1407B83-011	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 06:47	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 06:47	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 06:47	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 06:47	GK
Tetrachloroethene	7.8	5.0		ug/L	193732	1	07/17/2014 06:47	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 06:47	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 06:47	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 06:47	GK
Surr: 4-Bromofluorobenzene	94.6	66.2-120		%REC	193732	1	07/17/2014 06:47	GK
Surr: Dibromofluoromethane	93.1	79.5-121		%REC	193732	1	07/17/2014 06:47	GK
Surr: Toluene-d8	95.4	77-117		%REC	193732	1	07/17/2014 06:47	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	DVEW-09 20140709
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014 3:00:00 PM
Lab ID:	1407B83-012	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 07:14	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 07:14	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 07:14	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 07:14	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 07:14	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 07:14	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 07:14	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 07:14	GK
Surr: 4-Bromofluorobenzene	94.6	66.2-120		%REC	193732	1	07/17/2014 07:14	GK
Surr: Dibromofluoromethane	94.2	79.5-121		%REC	193732	1	07/17/2014 07:14	GK
Surr: Toluene-d8	95.2	77-117		%REC	193732	1	07/17/2014 07:14	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	DVEW-10 20140709
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014 11:12:00 AM
Lab ID:	1407B83-013	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 07:42	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 07:42	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 07:42	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 07:42	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 07:42	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 07:42	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 07:42	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 07:42	GK
Surr: 4-Bromofluorobenzene	93.8	66.2-120		%REC	193732	1	07/17/2014 07:42	GK
Surr: Dibromofluoromethane	92.7	79.5-121		%REC	193732	1	07/17/2014 07:42	GK
Surr: Toluene-d8	95.5	77-117		%REC	193732	1	07/17/2014 07:42	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	GRW-02 20140710
Project Name:	Corners Shopping Center	**Collection Date:**	7/10/2014 11:03:00 AM
Lab ID:	1407B83-014	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 08:10	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 08:10	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 08:10	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 08:10	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 08:10	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 08:10	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 08:10	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 08:10	GK
Surr: 4-Bromofluorobenzene	95.1	66.2-120		%REC	193732	1	07/17/2014 08:10	GK
Surr: Dibromofluoromethane	94.1	79.5-121		%REC	193732	1	07/17/2014 08:10	GK
Surr: Toluene-d8	95.1	77-117		%REC	193732	1	07/17/2014 08:10	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	GRW-03 20140709
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014 8:03:00 PM
Lab ID:	1407B83-015	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 08:38	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 08:38	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 08:38	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 08:38	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 08:38	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 08:38	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 08:38	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 08:38	GK
Surr: 4-Bromofluorobenzene	94.8	66.2-120		%REC	193732	1	07/17/2014 08:38	GK
Surr: Dibromofluoromethane	94.5	79.5-121		%REC	193732	1	07/17/2014 08:38	GK
Surr: Toluene-d8	94.8	77-117		%REC	193732	1	07/17/2014 08:38	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	GRW-06 20140709
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014 5:40:00 PM
Lab ID:	1407B83-016	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 09:06	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 09:06	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 09:06	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 09:06	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 09:06	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 09:06	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 09:06	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 09:06	GK
Surr: 4-Bromofluorobenzene	92.3	66.2-120		%REC	193732	1	07/17/2014 09:06	GK
Surr: Dibromofluoromethane	92.7	79.5-121		%REC	193732	1	07/17/2014 09:06	GK
Surr: Toluene-d8	95.9	77-117		%REC	193732	1	07/17/2014 09:06	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	GRW-07 20140709
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014 3:51:00 PM
Lab ID:	1407B83-017	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 09:33	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 09:33	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 09:33	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 09:33	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 09:33	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 09:33	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 09:33	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 09:33	GK
Surr: 4-Bromofluorobenzene	93	66.2-120		%REC	193732	1	07/17/2014 09:33	GK
Surr: Dibromofluoromethane	94.3	79.5-121		%REC	193732	1	07/17/2014 09:33	GK
Surr: Toluene-d8	96.6	77-117		%REC	193732	1	07/17/2014 09:33	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	GRW-08 20140709
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014 12:43:00 PM
Lab ID:	1407B83-018	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 10:01	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 10:01	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 10:01	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 10:01	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 10:01	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 10:01	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 10:01	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 10:01	GK
Surr: 4-Bromofluorobenzene	96.4	66.2-120		%REC	193732	1	07/17/2014 10:01	GK
Surr: Dibromofluoromethane	94.7	79.5-121		%REC	193732	1	07/17/2014 10:01	GK
Surr: Toluene-d8	95.7	77-117		%REC	193732	1	07/17/2014 10:01	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-01 20140708
Project Name:	Corners Shopping Center	**Collection Date:**	7/8/2014 3:40:00 PM
Lab ID:	1407B83-019	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 10:28	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 10:28	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193732	1	07/17/2014 10:28	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 10:28	GK
Tetrachloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 10:28	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 10:28	GK
Trichloroethene	BRL	5.0		ug/L	193732	1	07/17/2014 10:28	GK
Vinyl chloride	BRL	2.0		ug/L	193732	1	07/17/2014 10:28	GK
Surr: 4-Bromofluorobenzene	94.8	66.2-120		%REC	193732	1	07/17/2014 10:28	GK
Surr: Dibromofluoromethane	94.4	79.5-121		%REC	193732	1	07/17/2014 10:28	GK
Surr: Toluene-d8	95.4	77-117		%REC	193732	1	07/17/2014 10:28	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-11 20140709
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014 12:52:00 PM
Lab ID:	1407B83-020	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193683	1	07/17/2014 10:56	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193683	1	07/17/2014 10:56	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193683	1	07/17/2014 10:56	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/17/2014 10:56	GK
Tetrachloroethene	5.9	5.0		ug/L	193683	1	07/17/2014 10:56	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/17/2014 10:56	GK
Trichloroethene	BRL	5.0		ug/L	193683	1	07/17/2014 10:56	GK
Vinyl chloride	BRL	2.0		ug/L	193683	1	07/17/2014 10:56	GK
Surr: 4-Bromofluorobenzene	96.5	66.2-120		%REC	193683	1	07/17/2014 10:56	GK
Surr: Dibromofluoromethane	95.9	79.5-121		%REC	193683	1	07/17/2014 10:56	GK
Surr: Toluene-d8	96.5	77-117		%REC	193683	1	07/17/2014 10:56	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-17 20140709
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014 4:15:00 PM
Lab ID:	1407B83-021	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 17:47	NP
1,1-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 17:47	NP
1,2-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 17:47	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 17:47	NP
Tetrachloroethene	70	5.0		ug/L	193683	1	07/16/2014 17:47	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 17:47	NP
Trichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 17:47	NP
Vinyl chloride	BRL	2.0		ug/L	193683	1	07/16/2014 17:47	NP
Surr: 4-Bromofluorobenzene	94.2	66.2-120		%REC	193683	1	07/16/2014 17:47	NP
Surr: Dibromofluoromethane	92.3	79.5-121		%REC	193683	1	07/16/2014 17:47	NP
Surr: Toluene-d8	97.3	77-117		%REC	193683	1	07/16/2014 17:47	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-20 20140709
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014 11:26:00 AM
Lab ID:	1407B83-022	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 19:10	NP
1,1-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 19:10	NP
1,2-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 19:10	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 19:10	NP
Tetrachloroethene	13	5.0		ug/L	193683	1	07/16/2014 19:10	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 19:10	NP
Trichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 19:10	NP
Vinyl chloride	BRL	2.0		ug/L	193683	1	07/16/2014 19:10	NP
Surr: 4-Bromofluorobenzene	94.8	66.2-120		%REC	193683	1	07/16/2014 19:10	NP
Surr: Dibromofluoromethane	89.8	79.5-121		%REC	193683	1	07/16/2014 19:10	NP
Surr: Toluene-d8	95.8	77-117		%REC	193683	1	07/16/2014 19:10	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-21 20140710
Project Name:	Corners Shopping Center	**Collection Date:**	7/10/2014 12:44:00 PM
Lab ID:	1407B83-023	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 19:38	NP
1,1-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 19:38	NP
1,2-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 19:38	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 19:38	NP
Tetrachloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 19:38	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 19:38	NP
Trichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 19:38	NP
Vinyl chloride	BRL	2.0		ug/L	193683	1	07/16/2014 19:38	NP
Surr: 4-Bromofluorobenzene	94.9	66.2-120		%REC	193683	1	07/16/2014 19:38	NP
Surr: Dibromofluoromethane	90.7	79.5-121		%REC	193683	1	07/16/2014 19:38	NP
Surr: Toluene-d8	95.5	77-117		%REC	193683	1	07/16/2014 19:38	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-24 20140711
Project Name:	Corners Shopping Center	**Collection Date:**	7/11/2014 10:44:00 AM
Lab ID:	1407B83-024	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 20:06	NP
1,1-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 20:06	NP
1,2-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 20:06	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 20:06	NP
Tetrachloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 20:06	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 20:06	NP
Trichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 20:06	NP
Vinyl chloride	BRL	2.0		ug/L	193683	1	07/16/2014 20:06	NP
Surr: 4-Bromofluorobenzene	94.4	66.2-120		%REC	193683	1	07/16/2014 20:06	NP
Surr: Dibromofluoromethane	91.3	79.5-121		%REC	193683	1	07/16/2014 20:06	NP
Surr: Toluene-d8	96.7	77-117		%REC	193683	1	07/16/2014 20:06	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-27 20140710
Project Name:	Corners Shopping Center	**Collection Date:**	7/10/2014 11:18:00 AM
Lab ID:	1407B83-025	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 20:34	NP
1,1-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 20:34	NP
1,2-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 20:34	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 20:34	NP
Tetrachloroethene	7.9	5.0		ug/L	193683	1	07/16/2014 20:34	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 20:34	NP
Trichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 20:34	NP
Vinyl chloride	BRL	2.0		ug/L	193683	1	07/16/2014 20:34	NP
Surr: 4-Bromofluorobenzene	94.6	66.2-120		%REC	193683	1	07/16/2014 20:34	NP
Surr: Dibromofluoromethane	91.6	79.5-121		%REC	193683	1	07/16/2014 20:34	NP
Surr: Toluene-d8	94.6	77-117		%REC	193683	1	07/16/2014 20:34	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	DUP-01 20140709
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014
Lab ID:	1407B83-026	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 21:02	NP
1,1-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 21:02	NP
1,2-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 21:02	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 21:02	NP
Tetrachloroethene	50	5.0		ug/L	193683	1	07/16/2014 21:02	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 21:02	NP
Trichloroethene	6.2	5.0		ug/L	193683	1	07/16/2014 21:02	NP
Vinyl chloride	BRL	2.0		ug/L	193683	1	07/16/2014 21:02	NP
Surr: 4-Bromofluorobenzene	93.2	66.2-120		%REC	193683	1	07/16/2014 21:02	NP
Surr: Dibromofluoromethane	89.6	79.5-121		%REC	193683	1	07/16/2014 21:02	NP
Surr: Toluene-d8	95.6	77-117		%REC	193683	1	07/16/2014 21:02	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	DUP-02 20140710
Project Name:	Corners Shopping Center	**Collection Date:**	7/9/2014
Lab ID:	1407B83-027	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 21:30	NP
1,1-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 21:30	NP
1,2-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 21:30	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 21:30	NP
Tetrachloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 21:30	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 21:30	NP
Trichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 21:30	NP
Vinyl chloride	BRL	2.0		ug/L	193683	1	07/16/2014 21:30	NP
Surr: 4-Bromofluorobenzene	94.5	66.2-120		%REC	193683	1	07/16/2014 21:30	NP
Surr: Dibromofluoromethane	91.9	79.5-121		%REC	193683	1	07/16/2014 21:30	NP
Surr: Toluene-d8	94.8	77-117		%REC	193683	1	07/16/2014 21:30	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	TRIP BLANK
Project Name:	Corners Shopping Center	**Collection Date:**	7/11/2014
Lab ID:	1407B83-028	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 16:24	NP
1,1-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 16:24	NP
1,2-Dichloroethane	BRL	5.0		ug/L	193683	1	07/16/2014 16:24	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 16:24	NP
Tetrachloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 16:24	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 16:24	NP
Trichloroethene	BRL	5.0		ug/L	193683	1	07/16/2014 16:24	NP
Vinyl chloride	BRL	2.0		ug/L	193683	1	07/16/2014 16:24	NP
Surr: 4-Bromofluorobenzene	96.5	66.2-120		%REC	193683	1	07/16/2014 16:24	NP
Surr: Dibromofluoromethane	90.1	79.5-121		%REC	193683	1	07/16/2014 16:24	NP
Surr: Toluene-d8	94.5	77-117		%REC	193683	1	07/16/2014 16:24	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Environ Work Order Number 1407B83

Checklist completed by [signature] 7/14/14
Signature Date

Carrier name: FedEx __ UPS __ Courier ✓ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.5° Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1407B83

ANALYTICAL QC SUMMARY REPORT

BatchID: 193683

Sample ID: **MB-193683** Client ID: Units: **ug/L** Prep Date: **07/16/2014** Run No: **271787**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193683** Analysis Date: **07/16/2014** Seq No: **5735054**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
cis-1,2-Dichloroethene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
Trichloroethene	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	47.79	0	50.00		95.6	66.2	120				
Surr: Dibromofluoromethane	46.91	0	50.00		93.8	79.5	121				
Surr: Toluene-d8	47.34	0	50.00		94.7	77	117				

Sample ID: **LCS-193683** Client ID: Units: **ug/L** Prep Date: **07/16/2014** Run No: **271787**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193683** Analysis Date: **07/16/2014** Seq No: **5735052**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	33.87	5.0	50.00		67.7	63.1	140				
Trichloroethene	47.30	5.0	50.00		94.6	71.2	135				
Surr: 4-Bromofluorobenzene	47.68	0	50.00		95.4	66.2	120				
Surr: Dibromofluoromethane	45.58	0	50.00		91.2	79.5	121				
Surr: Toluene-d8	47.43	0	50.00		94.9	77	117				

Sample ID: **1407B83-021AMS** Client ID: **MW-17 20140709** Units: **ug/L** Prep Date: **07/16/2014** Run No: **271787**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193683** Analysis Date: **07/16/2014** Seq No: **5736605**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	33.97	5.0	50.00		67.9	60.2	159				
Trichloroethene	51.05	5.0	50.00	4.280	93.5	70.1	144				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1407B83

ANALYTICAL QC SUMMARY REPORT

BatchID: 193683

Sample ID: **1407B83-021AMS** Client ID: **MW-17 20140709** Units: **ug/L** Prep Date: **07/16/2014** Run No: **271787**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193683** Analysis Date: **07/16/2014** Seq No: **5736605**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: 4-Bromofluorobenzene	46.88	0	50.00		93.8	66.2	120				
Surr: Dibromofluoromethane	44.72	0	50.00		89.4	79.5	121				
Surr: Toluene-d8	48.13	0	50.00		96.3	77	117				

Sample ID: **1407B83-021AMSD** Client ID: **MW-17 20140709** Units: **ug/L** Prep Date: **07/16/2014** Run No: **271787**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193683** Analysis Date: **07/16/2014** Seq No: **5736607**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	34.33	5.0	50.00		68.7	60.2	159	33.97	1.05	19.2	
Trichloroethene	48.99	5.0	50.00	4.280	89.4	70.1	144	51.05	4.12	20	
Surr: 4-Bromofluorobenzene	47.08	0	50.00		94.2	66.2	120	46.88	0	0	
Surr: Dibromofluoromethane	44.11	0	50.00		88.2	79.5	121	44.72	0	0	
Surr: Toluene-d8	47.75	0	50.00		95.5	77	117	48.13	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1407B83

ANALYTICAL QC SUMMARY REPORT

BatchID: 193732

Sample ID: **MB-193732** Client ID: Units: **ug/L** Prep Date: **07/16/2014** Run No: **271866**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193732** Analysis Date: **07/17/2014** Seq No: **5736731**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
cis-1,2-Dichloroethene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
Trichloroethene	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	47.43	0	50.00		94.9	66.2	120				
Surr: Dibromofluoromethane	47.36	0	50.00		94.7	79.5	121				
Surr: Toluene-d8	48.16	0	50.00		96.3	77	117				

Sample ID: **LCS-193732** Client ID: Units: **ug/L** Prep Date: **07/16/2014** Run No: **271866**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193732** Analysis Date: **07/16/2014** Seq No: **5736729**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	33.12	5.0	50.00		66.2	63.1	140				
Trichloroethene	45.98	5.0	50.00		92.0	71.2	135				
Surr: 4-Bromofluorobenzene	47.23	0	50.00		94.5	66.2	120				
Surr: Dibromofluoromethane	46.16	0	50.00		92.3	79.5	121				
Surr: Toluene-d8	47.60	0	50.00		95.2	77	117				

Sample ID: **1407B83-001AMS** Client ID: **AIW-01 20140711** Units: **ug/L** Prep Date: **07/16/2014** Run No: **271866**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193732** Analysis Date: **07/17/2014** Seq No: **5736737**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	34.21	5.0	50.00		68.4	60.2	159				
Trichloroethene	47.16	5.0	50.00		94.3	70.1	144				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1407B83

ANALYTICAL QC SUMMARY REPORT

BatchID: 193732

Sample ID: **1407B83-001AMS** Client ID: **AIW-01 20140711** Units: **ug/L** Prep Date: **07/16/2014** Run No: **271866**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193732** Analysis Date: **07/17/2014** Seq No: **5736737**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: 4-Bromofluorobenzene	47.51	0	50.00		95.0	66.2	120				
Surr: Dibromofluoromethane	45.84	0	50.00		91.7	79.5	121				
Surr: Toluene-d8	47.96	0	50.00		95.9	77	117				

Sample ID: **1407B83-001AMSD** Client ID: **AIW-01 20140711** Units: **ug/L** Prep Date: **07/16/2014** Run No: **271866**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193732** Analysis Date: **07/17/2014** Seq No: **5736739**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	33.78	5.0	50.00		67.6	60.2	159	34.21	1.26	19.2	
Trichloroethene	46.86	5.0	50.00		93.7	70.1	144	47.16	0.638	20	
Surr: 4-Bromofluorobenzene	47.33	0	50.00		94.7	66.2	120	47.51	0	0	
Surr: Dibromofluoromethane	45.51	0	50.00		91.0	79.5	121	45.84	0	0	
Surr: Toluene-d8	47.80	0	50.00		95.6	77	117	47.96	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

July 22, 2014

Ken Nye
ENVIRON International Corp.
1600 Parkwood Circle
Atlanta GA 30339

TEL: (770) 874-5010
FAX: (770) 874-8011

RE: Corners Shopping Center

Dear Ken Nye: Order No: 1407G27

Analytical Environmental Services, Inc. received 1 samples on 7/17/2014 4:25:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Tara Esbeck

Tara Esbeck
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive; Atlanta, GA 30340
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1407G27

Date: 07/17/2014 Page 1 of 1

COMPANY:	ADDRESS:
ENVIRON	1600 Parkwood Circle Suite 310 Atlanta, GA 30339
PHONE: 770-874-5010	FAX: 770-874-5011
SAMPLED BY: K. Nye	SIGNATURE: K. E. N

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	Chlorinated VOCs (8260)	PRESERVATION (See codes) H+I	REMARKS	No # of Containers
1	SW-01 20140716	07/16/2014	1448	X		SW	X	X		2
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										

ANALYSIS REQUESTED

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: K. E. N	7-17-14 1535	1:	7-17-14 15:35
2:	7-17-14 16:25	2: IOANA P.	7/17/14 16:25
3:		3:	

PROJECT INFORMATION

PROJECT NAME: CSC
PROJECT #: 07-35252B
SITE ADDRESS: Marietta, Georgia
SEND REPORT TO: K. Nye
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT

Total # of Containers: 2

Turnaround Time Request
- (●) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush **(auth req.)**
- ( ) Other

STATE PROGRAM (if any):
E-mail? Y / N; Fax? Y / N
DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
CLIENT FedEx UPS MAIL (COURIER)
GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS STANDARD TAT.

SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) O = Other (specify)

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc **Date:** 22-Jul-14

Client:	ENVIRON International Corp.	**Client Sample ID:**	SW-01 20140716
Project Name:	Corners Shopping Center	**Collection Date:**	7/16/2014 2:48:00 PM
Lab ID:	1407G27-001	**Matrix:**	Surface Water

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	193939	1	07/22/2014 06:43	GK
1,1-Dichloroethene	BRL	5.0		ug/L	193939	1	07/22/2014 06:43	GK
1,2-Dichloroethane	BRL	5.0		ug/L	193939	1	07/22/2014 06:43	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	193939	1	07/22/2014 06:43	GK
Tetrachloroethene	BRL	5.0		ug/L	193939	1	07/22/2014 06:43	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	193939	1	07/22/2014 06:43	GK
Trichloroethene	BRL	5.0		ug/L	193939	1	07/22/2014 06:43	GK
Vinyl chloride	BRL	2.0		ug/L	193939	1	07/22/2014 06:43	GK
Surr: 4-Bromofluorobenzene	92.6	66.2-120		%REC	193939	1	07/22/2014 06:43	GK
Surr: Dibromofluoromethane	99.2	79.5-121		%REC	193939	1	07/22/2014 06:43	GK
Surr: Toluene-d8	99.5	77-117		%REC	193939	1	07/22/2014 06:43	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Environ-Atlanta Work Order Number 1407627

Checklist completed by JOANA P. 7/18/14
Signature Date

Carrier name: FedEx __ UPS __ Courier ✓ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes ✓ No __ Not Present __

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.4 Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1407G27

ANALYTICAL QC SUMMARY REPORT

BatchID: 193939

Sample ID: **MB-193939** Client ID: Units: **ug/L** Prep Date: **07/21/2014** Run No: **272147**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193939** Analysis Date: **07/22/2014** Seq No: **5743154**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
cis-1,2-Dichloroethene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
Trichloroethene	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	47.86	0	50.00		95.7	66.2	120				
Surr: Dibromofluoromethane	49.75	0	50.00		99.5	79.5	121				
Surr: Toluene-d8	48.41	0	50.00		96.8	77	117				

Sample ID: **LCS-193939** Client ID: Units: **ug/L** Prep Date: **07/21/2014** Run No: **272147**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193939** Analysis Date: **07/21/2014** Seq No: **5743151**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	43.85	5.0	50.00		87.7	63.1	140				
Trichloroethene	48.54	5.0	50.00		97.1	71.2	135				
Surr: 4-Bromofluorobenzene	47.44	0	50.00		94.9	66.2	120				
Surr: Dibromofluoromethane	48.63	0	50.00		97.3	79.5	121				
Surr: Toluene-d8	48.31	0	50.00		96.6	77	117				

Sample ID: **1407H03-008AMS** Client ID: Units: **ug/L** Prep Date: **07/21/2014** Run No: **272147**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193939** Analysis Date: **07/22/2014** Seq No: **5743159**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	23330	2500	25000	1505	87.3	60.2	159				
Trichloroethene	24890	2500	25000		99.6	70.1	144				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1407G27

ANALYTICAL QC SUMMARY REPORT

BatchID: 193939

Sample ID: **1407H03-008AMS** Client ID: Units: **ug/L** Prep Date: **07/21/2014** Run No: **272147**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193939** Analysis Date: **07/22/2014** Seq No: **5743159**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: 4-Bromofluorobenzene	23730	0	25000		94.9	66.2	120				
Surr: Dibromofluoromethane	25110	0	25000		100	79.5	121				
Surr: Toluene-d8	24250	0	25000		97.0	77	117				

Sample ID: **1407H03-008AMSD** Client ID: Units: **ug/L** Prep Date: **07/21/2014** Run No: **272147**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **193939** Analysis Date: **07/22/2014** Seq No: **5743161**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	22470	2500	25000	1505	83.9	60.2	159	23330	3.76	19.2	
Trichloroethene	23560	2500	25000		94.2	70.1	144	24890	5.49	20	
Surr: 4-Bromofluorobenzene	23760	0	25000		95.0	66.2	120	23730	0	0	
Surr: Dibromofluoromethane	24450	0	25000		97.8	79.5	121	25110	0	0	
Surr: Toluene-d8	24100	0	25000		96.4	77	117	24250	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

February 26, 2015

Ken Nye
ENVIRON International Corp.
1600 Parkwood Circle
Atlanta GA 30339

TEL: (770) 874-5010
FAX: (770) 874-8011

RE: Corners Shopping Center

Dear Ken Nye: Order No: 1502G87

Analytical Environmental Services, Inc. received 2 samples on 2/19/2015 5:41:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Tara Esbeck

Tara Esbeck
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive; Atlanta, GA 30340
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1502687

Date: 02/19/2015 Page 1 of 1

COMPANY:	ADDRESS:
ENVIRON	1600 Parkwood Circle Suite 310 Atlanta, GA 30339
PHONE: 770-874-5010	FAX: 770-874-5011
SAMPLED BY: K. Nye	SIGNATURE:

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	Chlorinated VOCs (8260)	No # of Containers	REMARKS
							PRESERVATION (See codes)		
							H+I		
1	AIW-04 20150218	02/18/2015	1240	X		GW	X	3	
2	MW-28 20150218	02/18/2015	1622	X		GW	X	3	
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									

ANALYSIS REQUESTED

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1:	02/19/2015 1630	1:	2-19-2015 4:30PM
2:	2-19-2015 5:41	2:	2/19/15 5:41
3:		3:	

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
CLIENT FedEx UPS MAIL COURIER
GREYHOUND OTHER_____

PROJECT INFORMATION

PROJECT NAME: CSC
PROJECT #: 07-35252C
SITE ADDRESS: Marietta, Georgia
SEND REPORT TO: K. Nye
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #:_____ PO#:_____

RECEIPT
Total # of Containers: 6

Turnaround Time Request
- ● Standard 5 Business Days
- ○ 2 Business Day Rush
- ○ Next Business Day Rush
- ○ Same Day Rush (auth req.)
- ○ Other _____

STATE PROGRAM (if any): _____
E-mail? Y / N; Fax? Y / N
DATA PACKAGE: I II III IV

SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS STANDARD TAT.

SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) O = Other (specify)

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc **Date:** 26-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	AIW-04 20150218
Project Name:	Corners Shopping Center	**Collection Date:**	2/18/2015 12:40:00 PM
Lab ID:	1502G87-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	203683	1	02/25/2015 10:36	NP
1,1-Dichloroethene	BRL	5.0		ug/L	203683	1	02/25/2015 10:36	NP
1,2-Dichloroethane	BRL	5.0		ug/L	203683	1	02/25/2015 10:36	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	203683	1	02/25/2015 10:36	NP
Tetrachloroethene	BRL	5.0		ug/L	203683	1	02/25/2015 10:36	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	203683	1	02/25/2015 10:36	NP
Trichloroethene	BRL	5.0		ug/L	203683	1	02/25/2015 10:36	NP
Vinyl chloride	BRL	2.0		ug/L	203683	1	02/25/2015 10:36	NP
Surr: 4-Bromofluorobenzene	94	70.6-123		%REC	203683	1	02/25/2015 10:36	NP
Surr: Dibromofluoromethane	99.2	78.7-124		%REC	203683	1	02/25/2015 10:36	NP
Surr: Toluene-d8	96.8	81.3-120		%REC	203683	1	02/25/2015 10:36	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-28 20150218
Project Name:	Corners Shopping Center	**Collection Date:**	2/18/2015 4:22:00 PM
Lab ID:	1502G87-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	203683	1	02/25/2015 11:00	NP
1,1-Dichloroethene	BRL	5.0		ug/L	203683	1	02/25/2015 11:00	NP
1,2-Dichloroethane	BRL	5.0		ug/L	203683	1	02/25/2015 11:00	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	203683	1	02/25/2015 11:00	NP
Tetrachloroethene	7.4	5.0		ug/L	203683	1	02/25/2015 11:00	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	203683	1	02/25/2015 11:00	NP
Trichloroethene	BRL	5.0		ug/L	203683	1	02/25/2015 11:00	NP
Vinyl chloride	BRL	2.0		ug/L	203683	1	02/25/2015 11:00	NP
Surr: 4-Bromofluorobenzene	94.4	70.6-123		%REC	203683	1	02/25/2015 11:00	NP
Surr: Dibromofluoromethane	101	78.7-124		%REC	203683	1	02/25/2015 11:00	NP
Surr: Toluene-d8	97.1	81.3-120		%REC	203683	1	02/25/2015 11:00	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Environ - Atlanta Work Order Number 1502G87

Checklist completed by Katie Forum 2/19/15
Signature Date

Carrier name: FedEx __ UPS __ Courier ✓ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes ✓ No __ Not Present __

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (0°≤6°C)* Yes ✓ No __

Cooler #1 3.4°C Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\Aes_server\I\Sample Receipt\My Documents\COCs and pH Adjustment Sheet\Sample_Cooler_Recipt_Checklist_Rev1.rtf

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1502G87

ANALYTICAL QC SUMMARY REPORT

BatchID: 203683

Sample ID: **MB-203683** Client ID: Units: **ug/L** Prep Date: **02/25/2015** Run No: **286494**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **203683** Analysis Date: **02/25/2015** Seq No: **6081592**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
cis-1,2-Dichloroethene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
Trichloroethene	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	47.06	0	50.00		94.1	70.6	123				
Surr: Dibromofluoromethane	48.37	0	50.00		96.7	78.7	124				
Surr: Toluene-d8	48.37	0	50.00		96.7	81.3	120				

Sample ID: **LCS-203683** Client ID: Units: **ug/L** Prep Date: **02/25/2015** Run No: **286494**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **203683** Analysis Date: **02/25/2015** Seq No: **6081590**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	50.44	5.0	50.00		101	64.2	137				
Trichloroethene	53.25	5.0	50.00		106	70.5	134				
Surr: 4-Bromofluorobenzene	48.51	0	50.00		97.0	70.6	123				
Surr: Dibromofluoromethane	48.60	0	50.00		97.2	78.7	124				
Surr: Toluene-d8	48.15	0	50.00		96.3	81.3	120				

Sample ID: **1502H40-001AMS** Client ID: Units: **ug/L** Prep Date: **02/25/2015** Run No: **286494**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **203683** Analysis Date: **02/25/2015** Seq No: **6082329**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	2484	250	2500		99.4	60.5	156				
Trichloroethene	2493	250	2500		99.7	71.8	139				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1502G87

ANALYTICAL QC SUMMARY REPORT

BatchID: 203683

Sample ID: **1502H40-001AMS** Client ID: Units: **ug/L** Prep Date: **02/25/2015** Run No: **286494**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **203683** Analysis Date: **02/25/2015** Seq No: **6082329**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: 4-Bromofluorobenzene	2431	0	2500		97.2	70.6	123				
Surr: Dibromofluoromethane	2476	0	2500		99.0	78.7	124				
Surr: Toluene-d8	2404	0	2500		96.1	81.3	120				

Sample ID: **1502H40-001AMSD** Client ID: Units: **ug/L** Prep Date: **02/25/2015** Run No: **286494**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **203683** Analysis Date: **02/25/2015** Seq No: **6082330**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	2322	250	2500		92.9	60.5	156	2484	6.72	20	
Trichloroethene	2434	250	2500		97.4	71.8	139	2493	2.37	20	
Surr: 4-Bromofluorobenzene	2387	0	2500		95.5	70.6	123	2431	0	0	
Surr: Dibromofluoromethane	2453	0	2500		98.1	78.7	124	2476	0	0	
Surr: Toluene-d8	2402	0	2500		96.1	81.3	120	2404	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

February 09, 2015

Ken Nye
ENVIRON International Corp.
1600 Parkwood Circle
Atlanta GA 30339

TEL: (770) 874-5010
FAX: (770) 874-8011

RE: Corners Shopping Center

Dear Ken Nye: Order No: 1502215

Analytical Environmental Services, Inc. received 9 samples on 2/3/2015 4:20:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Tara Esbeck

Tara Esbeck
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

AES

CHAIN OF CUSTODY

Work Order: 1502215

Date: 2-3-15 Page 1 of 1

Page 2 of 4

COMPANY:	ADDRESS:
ENVIRON International Corp.	1600 Parkwood Circle Suite 310 Atlanta, GA 30339
PHONE: ~~770 431~~ 770-874-5010	FAX: 770-874-5011
SAMPLED BY: Aaron D. Hottenstein	SIGNATURE: Aaron D Hottenstein

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	PRESERVATION (See codes) #1	Chlorinated VOCs	REMARKS	No # of Containers
1	DVEW-06 20150203	02/03/2015	0953	X		GW	X	X		2
2	DVEW-07 20150202	02/02/2015	1545	X		GW	X	X		2
3	MW-06 20150202	02/02/2015	1310	X		GW	X	X		2
4	MW-14 20150202	02/02/2015	1705	X		GW	X	X		2
5	MW-17 20150203	02/03/2015	1132	X		GW	X	X		2
6	DUP-01 20150202	02/02/2015	—	X		GW	X	X		2
7	DUP-02 20150203	02/03/2015	—	X		GW	X	X		2
8	DVEW-08 20150203	02/03/2015	1540	X		GW	X	X		2
9	Trip Blank	—	—			W	X			2
10										
11										
12										
13										
14										

ANALYSIS REQUESTED

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Aaron D Hottenstein	02/03/15 1548	1:	2-3-15 15:18
2:	2-3-15 16:20	2: Aaron D	2/3/15 16:20
3:		3:	

PROJECT INFORMATION

PROJECT NAME: Corners Shopping Center
PROJECT #: 07-35252C
SITE ADDRESS: Marietta, GA
SEND REPORT TO: knyc@environcorp.com
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT

Total # of Containers: 18

Turnaround Time Request
- ✓ Standard 5 Business Days
- ○ 2 Business Day Rush
- ○ Next Business Day Rush
- ○ Same Day Rush (auth req.)
- ○ Other

STATE PROGRAM (if any):
E-mail? Y / N; Fax? Y / N
DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
CLIENT FedEx UPS MAIL COURIER
GREYHOUND OTHER_____

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES. SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc **Date:** 9-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	DVEW-06 20150203
Project Name:	Corners Shopping Center	**Collection Date:**	2/3/2015 9:53:00 AM
Lab ID:	1502215-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 14:28	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 14:28	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 14:28	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 14:28	CH
Tetrachloroethene	14	5.0		ug/L	202738	1	02/05/2015 14:28	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 14:28	CH
Trichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 14:28	CH
Vinyl chloride	BRL	2.0		ug/L	202738	1	02/05/2015 14:28	CH
Surr: 4-Bromofluorobenzene	92.2	70.6-123		%REC	202738	1	02/05/2015 14:28	CH
Surr: Dibromofluoromethane	104	78.7-124		%REC	202738	1	02/05/2015 14:28	CH
Surr: Toluene-d8	97.3	81.3-120		%REC	202738	1	02/05/2015 14:28	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 9-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	DVEW-07 20150202
Project Name:	Corners Shopping Center	**Collection Date:**	2/2/2015 3:45:00 PM
Lab ID:	1502215-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 15:39	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 15:39	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 15:39	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 15:39	CH
Tetrachloroethene	250	50		ug/L	202738	10	02/06/2015 13:36	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 15:39	CH
Trichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 15:39	CH
Vinyl chloride	BRL	2.0		ug/L	202738	1	02/05/2015 15:39	CH
Surr: 4-Bromofluorobenzene	89.3	70.6-123		%REC	202738	1	02/05/2015 15:39	CH
Surr: 4-Bromofluorobenzene	92.5	70.6-123		%REC	202738	10	02/06/2015 13:36	CH
Surr: Dibromofluoromethane	102	78.7-124		%REC	202738	10	02/06/2015 13:36	CH
Surr: Dibromofluoromethane	107	78.7-124		%REC	202738	1	02/05/2015 15:39	CH
Surr: Toluene-d8	95.3	81.3-120		%REC	202738	1	02/05/2015 15:39	CH
Surr: Toluene-d8	95.6	81.3-120		%REC	202738	10	02/06/2015 13:36	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 9-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-06 20150202
Project Name:	Corners Shopping Center	**Collection Date:**	2/2/2015 1:10:00 PM
Lab ID:	1502215-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 16:51	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 16:51	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 16:51	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 16:51	CH
Tetrachloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 16:51	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 16:51	CH
Trichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 16:51	CH
Vinyl chloride	BRL	2.0		ug/L	202738	1	02/05/2015 16:51	CH
Surr: 4-Bromofluorobenzene	88.4	70.6-123		%REC	202738	1	02/05/2015 16:51	CH
Surr: Dibromofluoromethane	109	78.7-124		%REC	202738	1	02/05/2015 16:51	CH
Surr: Toluene-d8	97.9	81.3-120		%REC	202738	1	02/05/2015 16:51	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 9-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-14 20150202
Project Name:	Corners Shopping Center	**Collection Date:**	2/2/2015 5:05:00 PM
Lab ID:	1502215-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 17:15	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 17:15	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 17:15	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 17:15	CH
Tetrachloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 17:15	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 17:15	CH
Trichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 17:15	CH
Vinyl chloride	BRL	2.0		ug/L	202738	1	02/05/2015 17:15	CH
Surr: 4-Bromofluorobenzene	88.1	70.6-123		%REC	202738	1	02/05/2015 17:15	CH
Surr: Dibromofluoromethane	106	78.7-124		%REC	202738	1	02/05/2015 17:15	CH
Surr: Toluene-d8	91.6	81.3-120		%REC	202738	1	02/05/2015 17:15	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 9-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-17 20150203
Project Name:	Corners Shopping Center	**Collection Date:**	2/3/2015 11:32:00 AM
Lab ID:	1502215-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 17:39	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 17:39	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 17:39	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 17:39	CH
Tetrachloroethene	53	5.0		ug/L	202738	1	02/05/2015 17:39	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 17:39	CH
Trichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 17:39	CH
Vinyl chloride	BRL	2.0		ug/L	202738	1	02/05/2015 17:39	CH
Surr: 4-Bromofluorobenzene	87.5	70.6-123		%REC	202738	1	02/05/2015 17:39	CH
Surr: Dibromofluoromethane	109	78.7-124		%REC	202738	1	02/05/2015 17:39	CH
Surr: Toluene-d8	98	81.3-120		%REC	202738	1	02/05/2015 17:39	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 9-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	DUP-01 20150202
Project Name:	Corners Shopping Center	**Collection Date:**	2/2/2015
Lab ID:	1502215-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 18:03	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 18:03	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 18:03	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 18:03	CH
Tetrachloroethene	230	50		ug/L	202738	10	02/06/2015 14:00	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 18:03	CH
Trichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 18:03	CH
Vinyl chloride	BRL	2.0		ug/L	202738	1	02/05/2015 18:03	CH
Surr: 4-Bromofluorobenzene	83.3	70.6-123		%REC	202738	1	02/05/2015 18:03	CH
Surr: 4-Bromofluorobenzene	92.1	70.6-123		%REC	202738	10	02/06/2015 14:00	CH
Surr: Dibromofluoromethane	102	78.7-124		%REC	202738	10	02/06/2015 14:00	CH
Surr: Dibromofluoromethane	109	78.7-124		%REC	202738	1	02/05/2015 18:03	CH
Surr: Toluene-d8	96.4	81.3-120		%REC	202738	1	02/05/2015 18:03	CH
Surr: Toluene-d8	96.3	81.3-120		%REC	202738	10	02/06/2015 14:00	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 9-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	DUP-02 20150203
Project Name:	Corners Shopping Center	**Collection Date:**	2/3/2015
Lab ID:	1502215-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 18:51	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 18:51	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 18:51	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 18:51	CH
Tetrachloroethene	18	5.0		ug/L	202738	1	02/05/2015 18:51	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 18:51	CH
Trichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 18:51	CH
Vinyl chloride	BRL	2.0		ug/L	202738	1	02/05/2015 18:51	CH
Surr: 4-Bromofluorobenzene	86.5	70.6-123		%REC	202738	1	02/05/2015 18:51	CH
Surr: Dibromofluoromethane	112	78.7-124		%REC	202738	1	02/05/2015 18:51	CH
Surr: Toluene-d8	98	81.3-120		%REC	202738	1	02/05/2015 18:51	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 9-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	DVEW-08 20150203
Project Name:	Corners Shopping Center	**Collection Date:**	2/3/2015 3:40:00 PM
Lab ID:	1502215-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 18:27	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 18:27	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 18:27	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 18:27	CH
Tetrachloroethene	5.6	5.0		ug/L	202738	1	02/05/2015 18:27	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 18:27	CH
Trichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 18:27	CH
Vinyl chloride	BRL	2.0		ug/L	202738	1	02/05/2015 18:27	CH
Surr: 4-Bromofluorobenzene	87.1	70.6-123		%REC	202738	1	02/05/2015 18:27	CH
Surr: Dibromofluoromethane	110	78.7-124		%REC	202738	1	02/05/2015 18:27	CH
Surr: Toluene-d8	96.7	81.3-120		%REC	202738	1	02/05/2015 18:27	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 9-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	TRIP BLANK
Project Name:	Corners Shopping Center	**Collection Date:**	2/3/2015
Lab ID:	1502215-009	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 11:18	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 11:18	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202738	1	02/05/2015 11:18	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 11:18	CH
Tetrachloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 11:18	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 11:18	CH
Trichloroethene	BRL	5.0		ug/L	202738	1	02/05/2015 11:18	CH
Vinyl chloride	BRL	2.0		ug/L	202738	1	02/05/2015 11:18	CH
Surr: 4-Bromofluorobenzene	83.9	70.6-123		%REC	202738	1	02/05/2015 11:18	CH
Surr: Dibromofluoromethane	110	78.7-124		%REC	202738	1	02/05/2015 11:18	CH
Surr: Toluene-d8	99.4	81.3-120		%REC	202738	1	02/05/2015 11:18	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Environ International Corp Work Order Number 1502215

Checklist completed by Signature JasonB Date 2/3/15

Carrier name: FedEx __ UPS __ Courier ✓ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (0°≤6°C)* Yes ✓ No __

Cooler #1 3.2 Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\Aes_server\I\Sample Receipt\My Documents\COCs and pH Adjustment Sheet\Sample_Cooler_Recipt_Checklist_Rev1.rtf

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1502215

ANALYTICAL QC SUMMARY REPORT

BatchID: 202738

Sample ID: **MB-202738** Client ID: Units: **ug/L** Prep Date: **02/05/2015** Run No: **285233**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **202738** Analysis Date: **02/05/2015** Seq No: **6050381**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
cis-1,2-Dichloroethene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
Trichloroethene	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	44.96	0	50.00		89.9	70.6	123				
Surr: Dibromofluoromethane	54.14	0	50.00		108	78.7	124				
Surr: Toluene-d8	49.18	0	50.00		98.4	81.3	120				

Sample ID: **LCS-202738** Client ID: Units: **ug/L** Prep Date: **02/05/2015** Run No: **285233**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **202738** Analysis Date: **02/05/2015** Seq No: **6051796**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	63.91	5.0	50.00		128	64.2	137				
Trichloroethene	55.54	5.0	50.00		111	70.5	134				
Surr: 4-Bromofluorobenzene	45.79	0	50.00		91.6	70.6	123				
Surr: Dibromofluoromethane	52.56	0	50.00		105	78.7	124				
Surr: Toluene-d8	47.96	0	50.00		95.9	81.3	120				

Sample ID: **1502215-001AMS** Client ID: **DVEW-06 20150203** Units: **ug/L** Prep Date: **02/05/2015** Run No: **285233**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **202738** Analysis Date: **02/05/2015** Seq No: **6051792**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	61.84	5.0	50.00		124	60.5	156				
Trichloroethene	58.14	5.0	50.00	2.830	111	71.8	139				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1502215

ANALYTICAL QC SUMMARY REPORT

BatchID: 202738

Sample ID: **1502215-001AMS**	Client ID: **DVEW-06 20150203**	Units: **ug/L**	Prep Date: **02/05/2015**	Run No: **285233**
SampleType: **MS**	TestCode: **TCL VOLATILE ORGANICS SW8260B**	BatchID: **202738**	Analysis Date: **02/05/2015**	Seq No: **6051792**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: 4-Bromofluorobenzene	46.35	0	50.00		92.7	70.6	123				
Surr: Dibromofluoromethane	51.19	0	50.00		102	78.7	124				
Surr: Toluene-d8	47.11	0	50.00		94.2	81.3	120				

Sample ID: **1502215-001AMSD**	Client ID: **DVEW-06 20150203**	Units: **ug/L**	Prep Date: **02/05/2015**	Run No: **285233**
SampleType: **MSD**	TestCode: **TCL VOLATILE ORGANICS SW8260B**	BatchID: **202738**	Analysis Date: **02/05/2015**	Seq No: **6051793**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	59.59	5.0	50.00		119	60.5	156	61.84	3.71	20	
Trichloroethene	56.25	5.0	50.00	2.830	107	71.8	139	58.14	3.30	20	
Surr: 4-Bromofluorobenzene	46.37	0	50.00		92.7	70.6	123	46.35	0	0	
Surr: Dibromofluoromethane	51.24	0	50.00		102	78.7	124	51.19	0	0	
Surr: Toluene-d8	47.99	0	50.00		96.0	81.3	120	47.11	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

February 13, 2015

Ken Nye
ENVIRON International Corp.
1600 Parkwood Circle
Atlanta GA 30339

TEL: (770) 874-5010
FAX: (770) 874-8011

RE: Corners Shopping Center

Dear Ken Nye: Order No: 1502650

Analytical Environmental Services, Inc. received 12 samples on 2/6/2015 4:25:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Tara Esbeck

Tara Esbeck
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1502060

Date: 02/06/15 Page 1 of 1

COMPANY: ENVIRON International Corp.
ADDRESS: 1600 Parkwood Circle Suite 310 Atlanta, GA 30339
PHONE: 770-874-5010
FAX: 770-874-5011
SAMPLED BY: Aaron Hotterstein / Patrick Cares
SIGNATURE: Aaron D Hotterstein

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	PRESERVATION (See codes)	REMARKS	No # of Containers
1	ART-02 20150205	02/05/15	1400	X		GW	X		2
2	GRW-04 20150206	02/06/15	1315	X		GW	X		2
3	GRW-05 20150205	02/05/15	1655	X		GW	X		2
4	GRW-09 20150206	02/06/15	1309	X		GW	X		2
5	MW-11 20150203	02/03/15	1654	X		GW	X		2
6	MW-12 20150205	02/05/15	1157	X		GW	X		2
7	MW-18 20150205	02/05/15	1512	X		GW	X		2
8	MW-19 20150205	02/05/15	1027	X		GW	X		2
9	MW-20 20150205	02/05/15	1105	X		GW	X		2
10	MW-27 20150205	02/05/15	1437	X		GW	X		2
11	AIW-03 20150206	02/06/15	1010	X		GW	X		2
12	Trip Blank	—	—			W	X	TB (2 vials) on other COC too.	
13									
14									

ANALYSIS REQUESTED: Chlorinated VOCs

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Aaron D Hotterstein	02/06/15 1550	1:	2-6-15 15:50
2:	2-6-15 16:25	2: Jennifer DeBose	2/6/15 16:25
3:		3:	

PROJECT INFORMATION
PROJECT NAME: Corners Shopping Center
PROJECT #: 07-35252C
SITE ADDRESS: Marietta, GA
SEND REPORT TO: knye@environcorp.com
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT
Total # of Containers: 24

Turnaround Time Request
- (✓) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush (auth req.)
- ( ) Other

STATE PROGRAM (if any):
E-mail? Y / N: Fax? Y / N
DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
CLIENT FedEx UPS MAIL (COURIER)
GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc **Date:** 12-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	ART-02 20150205
Project Name:	Corners Shopping Center	**Collection Date:**	2/5/2015 2:00:00 PM
Lab ID:	1502650-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 18:42	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 18:42	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 18:42	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 18:42	CH
Tetrachloroethene	7.7	5.0		ug/L	202868	1	02/09/2015 18:42	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 18:42	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 18:42	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 18:42	CH
Surr: 4-Bromofluorobenzene	90	70.6-123		%REC	202868	1	02/09/2015 18:42	CH
Surr: Dibromofluoromethane	107	78.7-124		%REC	202868	1	02/09/2015 18:42	CH
Surr: Toluene-d8	104	81.3-120		%REC	202868	1	02/09/2015 18:42	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	GRW-04 20150206
Project Name:	Corners Shopping Center	**Collection Date:**	2/6/2015 1:15:00 PM
Lab ID:	1502650-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 19:06	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:06	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 19:06	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:06	CH
Tetrachloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:06	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:06	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:06	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 19:06	CH
Surr: 4-Bromofluorobenzene	84.7	70.6-123		%REC	202868	1	02/09/2015 19:06	CH
Surr: Dibromofluoromethane	107	78.7-124		%REC	202868	1	02/09/2015 19:06	CH
Surr: Toluene-d8	102	81.3-120		%REC	202868	1	02/09/2015 19:06	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	GRW-05 20150205
Project Name:	Corners Shopping Center	**Collection Date:**	2/5/2015 4:55:00 PM
Lab ID:	1502650-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 19:30	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:30	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 19:30	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:30	CH
Tetrachloroethene	6.1	5.0		ug/L	202868	1	02/09/2015 19:30	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:30	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:30	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 19:30	CH
Surr: 4-Bromofluorobenzene	88.6	70.6-123		%REC	202868	1	02/09/2015 19:30	CH
Surr: Dibromofluoromethane	106	78.7-124		%REC	202868	1	02/09/2015 19:30	CH
Surr: Toluene-d8	104	81.3-120		%REC	202868	1	02/09/2015 19:30	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	GRW-09 20150206
Project Name:	Corners Shopping Center	**Collection Date:**	2/6/2015 1:09:00 PM
Lab ID:	1502650-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 19:53	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:53	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 19:53	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:53	CH
Tetrachloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:53	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:53	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 19:53	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 19:53	CH
Surr: 4-Bromofluorobenzene	89	70.6-123		%REC	202868	1	02/09/2015 19:53	CH
Surr: Dibromofluoromethane	113	78.7-124		%REC	202868	1	02/09/2015 19:53	CH
Surr: Toluene-d8	105	81.3-120		%REC	202868	1	02/09/2015 19:53	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-11 20150203
Project Name:	Corners Shopping Center	**Collection Date:**	2/3/2015 4:54:00 PM
Lab ID:	1502650-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 20:17	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 20:17	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 20:17	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 20:17	CH
Tetrachloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 20:17	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 20:17	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 20:17	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 20:17	CH
Surr: 4-Bromofluorobenzene	91	70.6-123		%REC	202868	1	02/09/2015 20:17	CH
Surr: Dibromofluoromethane	110	78.7-124		%REC	202868	1	02/09/2015 20:17	CH
Surr: Toluene-d8	106	81.3-120		%REC	202868	1	02/09/2015 20:17	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-12 20150205
Project Name:	Corners Shopping Center	**Collection Date:**	2/5/2015 11:57:00 AM
Lab ID:	1502650-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 20:41	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 20:41	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 20:41	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 20:41	CH
Tetrachloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 20:41	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 20:41	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 20:41	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 20:41	CH
Surr: 4-Bromofluorobenzene	89.3	70.6-123		%REC	202868	1	02/09/2015 20:41	CH
Surr: Dibromofluoromethane	114	78.7-124		%REC	202868	1	02/09/2015 20:41	CH
Surr: Toluene-d8	103	81.3-120		%REC	202868	1	02/09/2015 20:41	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-18 20150205
Project Name:	Corners Shopping Center	**Collection Date:**	2/5/2015 3:12:00 PM
Lab ID:	1502650-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 21:05	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 21:05	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 21:05	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 21:05	CH
Tetrachloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 21:05	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 21:05	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 21:05	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 21:05	CH
Surr: 4-Bromofluorobenzene	91.6	70.6-123		%REC	202868	1	02/09/2015 21:05	CH
Surr: Dibromofluoromethane	115	78.7-124		%REC	202868	1	02/09/2015 21:05	CH
Surr: Toluene-d8	103	81.3-120		%REC	202868	1	02/09/2015 21:05	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-19 20150205
Project Name:	Corners Shopping Center	**Collection Date:**	2/5/2015 10:27:00 AM
Lab ID:	1502650-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/10/2015 16:28	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/10/2015 16:28	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/10/2015 16:28	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/10/2015 16:28	CH
Tetrachloroethene	69	5.0		ug/L	202868	1	02/10/2015 16:28	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/10/2015 16:28	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/10/2015 16:28	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/10/2015 16:28	CH
Surr: 4-Bromofluorobenzene	86.5	70.6-123		%REC	202868	1	02/10/2015 16:28	CH
Surr: Dibromofluoromethane	106	78.7-124		%REC	202868	1	02/10/2015 16:28	CH
Surr: Toluene-d8	99.2	81.3-120		%REC	202868	1	02/10/2015 16:28	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-20 20150205
Project Name:	Corners Shopping Center	**Collection Date:**	2/5/2015 11:05:00 PM
Lab ID:	1502650-009	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/10/2015 17:15	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/10/2015 17:15	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/10/2015 17:15	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/10/2015 17:15	CH
Tetrachloroethene	13	5.0		ug/L	202868	1	02/10/2015 17:15	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/10/2015 17:15	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/10/2015 17:15	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/10/2015 17:15	CH
Surr: 4-Bromofluorobenzene	84.9	70.6-123		%REC	202868	1	02/10/2015 17:15	CH
Surr: Dibromofluoromethane	105	78.7-124		%REC	202868	1	02/10/2015 17:15	CH
Surr: Toluene-d8	99.8	81.3-120		%REC	202868	1	02/10/2015 17:15	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	MW-27 20150205
Project Name:	Corners Shopping Center	**Collection Date:**	2/5/2015 2:37:00 PM
Lab ID:	1502650-010	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/11/2015 12:04	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/11/2015 12:04	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/11/2015 12:04	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/11/2015 12:04	CH
Tetrachloroethene	17	5.0		ug/L	202868	1	02/11/2015 12:04	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/11/2015 12:04	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/11/2015 12:04	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/11/2015 12:04	CH
Surr: 4-Bromofluorobenzene	83.9	70.6-123		%REC	202868	1	02/11/2015 12:04	CH
Surr: Dibromofluoromethane	108	78.7-124		%REC	202868	1	02/11/2015 12:04	CH
Surr: Toluene-d8	102	81.3-120		%REC	202868	1	02/11/2015 12:04	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	AIW-03 20150206
Project Name:	Corners Shopping Center	**Collection Date:**	2/6/2015 10:10:00 AM
Lab ID:	1502650-011	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/11/2015 12:27	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/11/2015 12:27	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/11/2015 12:27	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/11/2015 12:27	CH
Tetrachloroethene	8.5	5.0		ug/L	202868	1	02/11/2015 12:27	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/11/2015 12:27	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/11/2015 12:27	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/11/2015 12:27	CH
Surr: 4-Bromofluorobenzene	90.1	70.6-123		%REC	202868	1	02/11/2015 12:27	CH
Surr: Dibromofluoromethane	108	78.7-124		%REC	202868	1	02/11/2015 12:27	CH
Surr: Toluene-d8	97	81.3-120		%REC	202868	1	02/11/2015 12:27	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	TRIP BLANK
Project Name:	Corners Shopping Center	**Collection Date:**	2/6/2015
Lab ID:	1502650-012	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 13:16	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 13:16	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 13:16	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 13:16	CH
Tetrachloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 13:16	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 13:16	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 13:16	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 13:16	CH
Surr: 4-Bromofluorobenzene	91	70.6-123		%REC	202868	1	02/09/2015 13:16	CH
Surr: Dibromofluoromethane	102	78.7-124		%REC	202868	1	02/09/2015 13:16	CH
Surr: Toluene-d8	96.8	81.3-120		%REC	202868	1	02/09/2015 13:16	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Environ International Corp Work Order Number 1502660

Checklist completed by Tanya DeBos 2/6/2015
Signature Date

Carrier name: FedEx __ UPS __ Courier ✓ Client __ US Mail __ Other _____

Shipping container/cooler in good condition?	Yes ✓	No __	Not Present __
Custody seals intact on shipping container/cooler?	Yes __	No __	Not Present ✓
Custody seals intact on sample bottles?	Yes __	No __	Not Present ✓
Container/Temp Blank temperature in compliance? (0°≤6°C)*	Yes ✓	No __	

Cooler #1 3.2°C Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present?	Yes ✓	No __
Chain of custody signed when relinquished and received?	Yes ✓	No __
Chain of custody agrees with sample labels?	Yes ✓	No __
Samples in proper container/bottle?	Yes ✓	No __
Sample containers intact?	Yes ✓	No __
Sufficient sample volume for indicated test?	Yes ✓	No __
All samples received within holding time?	Yes ✓	No __
Was TAT marked on the COC?	Yes ✓	No __
Proceed with Standard TAT as per project history?	Yes __	No __ Not Applicable ✓
Water - VOA vials have zero headspace?	No VOA vials submitted __	Yes ✓ No __
Water - pH acceptable upon receipt?	Yes ✓	No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\Aes_server\I\Sample Receipt\My Documents\COCs and pH Adjustment Sheet\Sample_Cooler_Recipt_Checklist_Rev1.rtf

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1502650

ANALYTICAL QC SUMMARY REPORT

BatchID: 202868

Sample ID: **MB-202868** Client ID: Units: **ug/L** Prep Date: **02/09/2015** Run No: **285433**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **202868** Analysis Date: **02/09/2015** Seq No: **6055439**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
cis-1,2-Dichloroethene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
Trichloroethene	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	48.29	0	50.00		96.6	70.6	123				
Surr: Dibromofluoromethane	52.38	0	50.00		105	78.7	124				
Surr: Toluene-d8	48.94	0	50.00		97.9	81.3	120				

Sample ID: **LCS-202868** Client ID: Units: **ug/L** Prep Date: **02/09/2015** Run No: **285433**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **202868** Analysis Date: **02/09/2015** Seq No: **6055438**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	67.83	5.0	50.00		136	64.2	137				
Trichloroethene	59.06	5.0	50.00		118	70.5	134				
Surr: 4-Bromofluorobenzene	47.85	0	50.00		95.7	70.6	123				
Surr: Dibromofluoromethane	49.21	0	50.00		98.4	78.7	124				
Surr: Toluene-d8	47.75	0	50.00		95.5	81.3	120				

Sample ID: **1502653-001AMS** Client ID: Units: **ug/L** Prep Date: **02/09/2015** Run No: **285433**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **202868** Analysis Date: **02/09/2015** Seq No: **6056668**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	78.34	5.0	50.00		157	60.5	156				S
Trichloroethene	62.78	5.0	50.00		126	71.8	139				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1502650

ANALYTICAL QC SUMMARY REPORT

BatchID: 202868

Sample ID: **1502653-001AMS** Client ID: Units: **ug/L** Prep Date: **02/09/2015** Run No: **285433**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **202868** Analysis Date: **02/09/2015** Seq No: **6056668**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: 4-Bromofluorobenzene	45.98	0	50.00		92.0	70.6	123				
Surr: Dibromofluoromethane	50.97	0	50.00		102	78.7	124				
Surr: Toluene-d8	49.85	0	50.00		99.7	81.3	120				

Sample ID: **1502653-001AMSD** Client ID: Units: **ug/L** Prep Date: **02/09/2015** Run No: **285433**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **202868** Analysis Date: **02/09/2015** Seq No: **6056671**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	67.94	5.0	50.00		136	60.5	156	78.34	14.2	20	
Trichloroethene	58.18	5.0	50.00		116	71.8	139	62.78	7.61	20	
Surr: 4-Bromofluorobenzene	45.76	0	50.00		91.5	70.6	123	45.98	0	0	
Surr: Dibromofluoromethane	49.89	0	50.00		99.8	78.7	124	50.97	0	0	
Surr: Toluene-d8	48.84	0	50.00		97.7	81.3	120	49.85	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

February 10, 2015

Ken Nye
ENVIRON International Corp.
1600 Parkwood Circle
Atlanta GA 30339

TEL: (770) 874-5010
FAX: (770) 874-8011

RE: Corners Shopping Center

Dear Ken Nye: Order No: 1502653

Analytical Environmental Services, Inc. received 6 samples on 2/6/2015 4:25:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Tara Esbeck

Tara Esbeck
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC
3080 Presidential Drive, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1502653

Date: 02/06/15 Page 1 of 1

COMPANY: ENVIRON International Corp.

ADDRESS: 1600 Parkwood Circle Suite 310 Atlanta, GA 30339

PHONE: 770-874-5010

FAX: 770-874-5011

SAMPLED BY: Aaron Hottenstein

SIGNATURE: Aaron D. Hottenstein

ANALYSIS REQUESTED: chlorinated VOCs

PRESERVATION (See codes): H+I

Visit our website **www.aesatlanta.com** to check on the status of your results, place bottle orders, etc.

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	chlorinated VOCs (H+I)	REMARKS	No # of Containers
1	TW-01 20150204	02/04/15	1558	X		GW	X		2
2	TW-02 20150204	02/04/15	1545	X		GW	X		2
3	TW-03 20150204	02/04/15	1702	X		GW	X		2
4	TW-04 20150204	02/04/15	1720	X		GW	X		2
5	TW-05 20150205	02/05/15	0950	X		GW	X		2
6	Trip Blank	—	—			W	X	TB (2 vials total in cooler) on other COC too.	2
7									
8									
9									
10									
11									
12									
13									
14									

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Aaron D. Hottenstein	02/06/15 1550	1: [signature]	2-6-15 1550
2: [signature]	2-6-15 1625	2: [signature]	2/6/15 16:25PM
3:		3:	

PROJECT INFORMATION

PROJECT NAME: Corners Shopping Center

PROJECT #: 07-35252C

SITE ADDRESS: Marietta, GA

SEND REPORT TO: kaye@environcorp.com

INVOICE TO: (IF DIFFERENT FROM ABOVE)

QUOTE #: PO#:

RECEIPT

Total # of Containers: 12

Turnaround Time Request
- ☑ Standard 5 Business Days
- ○ 2 Business Day Rush
- ○ Next Business Day Rush
- ○ Same Day Rush (auth req.)
- ○ Other

STATE PROGRAM (if any):

E-mail? Y / N; Fax? Y / N

DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
CLIENT FedEx UPS MAIL (COURIER circled)
GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES. SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc **Date:** 10-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	TW-01 20150204
Project Name:	Corners Shopping Center	**Collection Date:**	2/4/2015 3:58:00 PM
Lab ID:	1502653-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 15:41	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 15:41	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 15:41	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 15:41	CH
Tetrachloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 15:41	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 15:41	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 15:41	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 15:41	CH
Surr: 4-Bromofluorobenzene	94	70.6-123		%REC	202868	1	02/09/2015 15:41	CH
Surr: Dibromofluoromethane	101	78.7-124		%REC	202868	1	02/09/2015 15:41	CH
Surr: Toluene-d8	97.3	81.3-120		%REC	202868	1	02/09/2015 15:41	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 10-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	TW-02 20150204
Project Name:	Corners Shopping Center	**Collection Date:**	2/4/2015 3:45:00 PM
Lab ID:	1502653-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 16:53	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 16:53	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 16:53	CH
cis-1,2-Dichloroethene	5.5	5.0		ug/L	202868	1	02/09/2015 16:53	CH
Tetrachloroethene	210	50		ug/L	202868	10	02/10/2015 14:28	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 16:53	CH
Trichloroethene	20	5.0		ug/L	202868	1	02/09/2015 16:53	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 16:53	CH
Surr: 4-Bromofluorobenzene	88.9	70.6-123		%REC	202868	1	02/09/2015 16:53	CH
Surr: 4-Bromofluorobenzene	110	70.6-123		%REC	202868	10	02/10/2015 14:28	CH
Surr: Dibromofluoromethane	99	78.7-124		%REC	202868	10	02/10/2015 14:28	CH
Surr: Dibromofluoromethane	106	78.7-124		%REC	202868	1	02/09/2015 16:53	CH
Surr: Toluene-d8	95.1	81.3-120		%REC	202868	10	02/10/2015 14:28	CH
Surr: Toluene-d8	99.2	81.3-120		%REC	202868	1	02/09/2015 16:53	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 10-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	TW-03 20150204
Project Name:	Corners Shopping Center	**Collection Date:**	2/4/2015 5:02:00 PM
Lab ID:	1502653-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/10/2015 14:52	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/10/2015 14:52	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/10/2015 14:52	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/10/2015 14:52	CH
Tetrachloroethene	5.0	5.0		ug/L	202868	1	02/10/2015 14:52	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/10/2015 14:52	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/10/2015 14:52	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/10/2015 14:52	CH
Surr: 4-Bromofluorobenzene	95.3	70.6-123		%REC	202868	1	02/10/2015 14:52	CH
Surr: Dibromofluoromethane	108	78.7-124		%REC	202868	1	02/10/2015 14:52	CH
Surr: Toluene-d8	102	81.3-120		%REC	202868	1	02/10/2015 14:52	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 10-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	TW-04 20150204
Project Name:	Corners Shopping Center	**Collection Date:**	2/4/2015 5:20:00 PM
Lab ID:	1502653-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 17:47	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 17:47	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 17:47	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 17:47	CH
Tetrachloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 17:47	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 17:47	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 17:47	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 17:47	CH
Surr: 4-Bromofluorobenzene	91	70.6-123		%REC	202868	1	02/09/2015 17:47	CH
Surr: Dibromofluoromethane	109	78.7-124		%REC	202868	1	02/09/2015 17:47	CH
Surr: Toluene-d8	101	81.3-120		%REC	202868	1	02/09/2015 17:47	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 10-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	TW-05 20150205
Project Name:	Corners Shopping Center	**Collection Date:**	2/5/2015 9:50:00 AM
Lab ID:	1502653-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 18:13	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 18:13	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 18:13	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 18:13	CH
Tetrachloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 18:13	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 18:13	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 18:13	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 18:13	CH
Surr: 4-Bromofluorobenzene	90	70.6-123		%REC	202868	1	02/09/2015 18:13	CH
Surr: Dibromofluoromethane	109	78.7-124		%REC	202868	1	02/09/2015 18:13	CH
Surr: Toluene-d8	105	81.3-120		%REC	202868	1	02/09/2015 18:13	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 10-Feb-15

Client:	ENVIRON International Corp.	**Client Sample ID:**	TRIP BLANK
Project Name:	Corners Shopping Center	**Collection Date:**	2/6/2015
Lab ID:	1502653-006	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 12:52	CH
1,1-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 12:52	CH
1,2-Dichloroethane	BRL	5.0		ug/L	202868	1	02/09/2015 12:52	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 12:52	CH
Tetrachloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 12:52	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 12:52	CH
Trichloroethene	BRL	5.0		ug/L	202868	1	02/09/2015 12:52	CH
Vinyl chloride	BRL	2.0		ug/L	202868	1	02/09/2015 12:52	CH
Surr: 4-Bromofluorobenzene	90.2	70.6-123		%REC	202868	1	02/09/2015 12:52	CH
Surr: Dibromofluoromethane	106	78.7-124		%REC	202868	1	02/09/2015 12:52	CH
Surr: Toluene-d8	98.2	81.3-120		%REC	202868	1	02/09/2015 12:52	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Environ International Corp Work Order Number 1502653

Checklist completed by [signature] 2/7/15
Signature Date

Carrier name: FedEx __ UPS __ Courier ✓ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (0°≤6°C)* Yes ✓ No __

Cooler #1 3.2°C Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\Aes_server\I\Sample Receipt\My Documents\COCs and pH Adjustment Sheet\Sample_Cooler_Recipt_Checklist_Rev1.rtf

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1502653

ANALYTICAL QC SUMMARY REPORT

BatchID: 202868

Sample ID: **MB-202868** Client ID: Units: **ug/L** Prep Date: **02/09/2015** Run No: **285433**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **202868** Analysis Date: **02/09/2015** Seq No: **6055439**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
cis-1,2-Dichloroethene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
Trichloroethene	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	48.29	0	50.00		96.6	70.6	123				
Surr: Dibromofluoromethane	52.38	0	50.00		105	78.7	124				
Surr: Toluene-d8	48.94	0	50.00		97.9	81.3	120				

Sample ID: **LCS-202868** Client ID: Units: **ug/L** Prep Date: **02/09/2015** Run No: **285433**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **202868** Analysis Date: **02/09/2015** Seq No: **6055438**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	67.83	5.0	50.00		136	64.2	137				
Trichloroethene	59.06	5.0	50.00		118	70.5	134				
Surr: 4-Bromofluorobenzene	47.85	0	50.00		95.7	70.6	123				
Surr: Dibromofluoromethane	49.21	0	50.00		98.4	78.7	124				
Surr: Toluene-d8	47.75	0	50.00		95.5	81.3	120				

Sample ID: **1502653-001AMS** Client ID: **TW-01 20150204** Units: **ug/L** Prep Date: **02/09/2015** Run No: **285433**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **202868** Analysis Date: **02/09/2015** Seq No: **6056668**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	78.34	5.0	50.00		157	60.5	156				S
Trichloroethene	62.78	5.0	50.00		126	71.8	139				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ENVIRON International Corp.
Project Name: Corners Shopping Center
Workorder: 1502653

ANALYTICAL QC SUMMARY REPORT

BatchID: 202868

Sample ID: **1502653-001AMS**	Client ID: **TW-01 20150204**	Units: **ug/L**	Prep Date: **02/09/2015**	Run No: **285433**
SampleType: **MS**	TestCode: **TCL VOLATILE ORGANICS SW8260B**	BatchID: **202868**	Analysis Date: **02/09/2015**	Seq No: **6056668**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: 4-Bromofluorobenzene	45.98	0	50.00		92.0	70.6	123				
Surr: Dibromofluoromethane	50.97	0	50.00		102	78.7	124				
Surr: Toluene-d8	49.85	0	50.00		99.7	81.3	120				

Sample ID: **1502653-001AMSD**	Client ID: **TW-01 20150204**	Units: **ug/L**	Prep Date: **02/09/2015**	Run No: **285433**
SampleType: **MSD**	TestCode: **TCL VOLATILE ORGANICS SW8260B**	BatchID: **202868**	Analysis Date: **02/09/2015**	Seq No: **6056671**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	67.94	5.0	50.00		136	60.5	156	78.34	14.2	20	
Trichloroethene	58.18	5.0	50.00		116	71.8	139	62.78	7.61	20	
Surr: 4-Bromofluorobenzene	45.76	0	50.00		91.5	70.6	123	45.98	0	0	
Surr: Dibromofluoromethane	49.89	0	50.00		99.8	78.7	124	50.97	0	0	
Surr: Toluene-d8	48.84	0	50.00		97.7	81.3	120	49.85	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Appendix D

Calculation of Risk-Based Vapor Intrusion Criteria

OSWER VAPOR INTRUSION ASSESSMENT
Vapor Intrusion Screening Level (VISL) Calculator Version 3.3.1, May 2014 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-05	Enter target risk for carcinogens
Target Hazard Quotient for Non-Carcinogens	THQ	1	Enter target hazard quotient for non-carcinogens
Average Groundwater Temperature (°C)	Tgw	25	Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations

	CAS	Chemical Name	Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Soil Source?	Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Groundwater Source?	Target Indoor Air Conc. @ TCR = 10E-06 or THQ = 1	Toxicity Basis	Target Sub-Slab and Exterior Soil Gas Conc. @ TCR = 10E-06 or THQ = 1	Target Ground Water Conc. @ TCR = 10E-06 or THQ = 1	Is Target Ground Water Conc. < MCL?	Temperature for Groundwater Vapor Conc.	Lower Explosive Limit**	LEL Source	Inhalation Unit Risk	IUR Source*	Reference Concentration	RFC Source*	Mutagenic Indicator	Target Indoor Air Conc. for Carcinogens @ TCR = 10E-06	Target Indoor Air Conc. for Non-Carcinogens @ THQ = 1
			Cvp > Cia,target?	Chc > Cia,target?	MIN(Cia,c;Cia,nc)		Csg	Cgw	Cgw<MCL?	Tgw or 25	LEL		IUR		RfC		i	Cia,c	Cia,nc
			Yes/No	Yes/No	(ug/m^3)	C/NC	(ug/m^3)	(ug/L)	Yes/No (MCL ug/L)	C	(% by vol)		(ug/m^3)$^{-1}$		(mg/m^3)			(ug/m^3)	(ug/m^3)
x	127-18-4	Tetrachloroethylene	Yes	Yes	1.8E+02	NC	1.8E+03	2.4E+02	No (5)	25			2.60E-07	I	4.00E-02	I		4.7E+02	1.8E+02

Notes:

(1) **Inhalation Pathway Exposure Parameters (RME):**

Exposure Scenario	Units	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario in cell E5) Symbol	Selected (based on scenario in cell E5) Value
Averaging time for carcinogens	(yrs)	ATc_R	70	ATc_C	70	ATc	70
Averaging time for non-carcinogens	(yrs)	ATnc_R	26	ATnc_C	25	ATnc	25
Exposure duration	(yrs)	ED_R	26	ED_C	25	ED	25
Exposure frequency	(days/yr)	EF_R	350	EF_C	250	EF	250
Exposure time	(hr/day)	ET_R	24	ET_C	8	ET	8

(2) **Generic Attenuation Factors:**

Source Medium of Vapors	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario in cell E5) Symbol	Selected (based on scenario in cell E5) Value
Groundwater	AFgw_R	0.001	AFgw_C	0.001	AFgw	0.001
Sub-Slab and Exterior Soil Gas	AFss_R	0.1	AFss_C	0.1	AFss	0.1

(3) **Formulas**
Cia, target = MIN(Cia,c; Cia,nc)
Cia,c (ug/m3) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)
Cia,nc (ug/m3) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET)

(4) **Special Case Chemicals**
Trichloroethylene

	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario in cell E5) Symbol	Selected (based on scenario in cell E5) Value
mIURTCE_R		1.00E-06	mIURTCE_C	0.00E+00	mIURTCE	0.00E+00
IURTCE_R		3.10E-06	IURTCE_C	4.10E-06	IURTCE	4.10E-06

Mutagenic Chemicals — The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride.

Age Cohort	Exposure Duration (years)	Age-dependent adjustment factor
0 - 2 years	2	10
2 - 6 years	4	3
6 - 16 years	10	3
16 - 26 years	10	1

Mutagenic-mode-of-action (MMOA) adjustment factor 25 — This factor is used in the equations for mutagenic chemicals.

Vinyl Chloride — See the Navigation Guide equation for Cia,c for vinyl chloride.

Notation:
NVT = Not sufficiently volatile and/or toxic to pose inhalation risk in selected exposure scenario for the indicated medium
C = Carcinogenic
NC = Non-carcinogenic
I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at: http://www.epa.gov/iris/subst/index.html
P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at: http://hhpprtv.ornl.gov/pprtv.shtml
A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at: http://www.atsdr.cdc.gov/mrls/index.html
CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at:
H = HEAST. EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at: http://epa-heast.ornl.gov/heast.shtml
S = See RSL User Guide, Section 5
X = PPRTV Appendix
E = The Engineering ToolBox. Available online at http://www.engineeringtoolbox.com/explosive-concentration-limits-d_423.html
N = Centers for Disease Control and Prevention (CDC) National Institute for Occupational Safety and Health (NIOSH). Pocket Guide to Chemical Hazards. Available online at: http://www.cdc.gov/niosh/npg/default.html
M = Chemical-specific MSDS
Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (4) above).
VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).
TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).
Yellow highlighting indicates site-specific parameters that may be edited by the user.
Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.
**Lower explosive limit is the minimum concentration of the compound in air (% by volume) that is needed for the gas to ignite and explode.

OSWER VAPOR INTRUSION ASSESSMENT
Vapor Intrusion Screening Level (VISL) Calculator Version 3.3.1, May 2014 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Residential	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-06	Enter target risk for carcinogens
Target Hazard Quotient for Non-Carcinogens	THQ	1	Enter target hazard quotient for non-carcinogens
Average Groundwater Temperature (°C)	Tgw	25	Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations

	CAS	Chemical Name	Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Soil Source?	Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Groundwater Source?	Target Indoor Air Conc. @ TCR = 1E-06 or THQ = 1	Toxicity Basis	Target Sub-Slab and Exterior Soil Gas Conc. @ TCR = 1E-06 or THQ = 1	Target Ground Water Conc. @ TCR = 1E-06 or THQ = 1	Is Target Ground Water Conc. < MCL?	Temperature for Groundwater Vapor Conc.	Lower Explosive Limit**	LEL Source	Inhalation Unit Risk	IUR Source*	Reference Concentration	RFC Source*	Mutagenic Indicator	Target Indoor Air Conc. for Carcinogens @ TCR = 1E-06	Target Indoor Air Conc. for Non-Carcinogens @ THQ = 1
			Cvp > Cia,target?	Chc > Cia,target?	MIN(Cia,c;Cia,nc)		Csg	Cgw	Cgw<MCL?	Tgw or 25	LEL		IUR		RfC		i	Cia,c	Cia,nc
			Yes/No	Yes/No	(ug/m^3)	C/NC	(ug/m^3)	(ug/L)	Yes/No (MCL ug/L)	C	(% by vol)		(ug/m^3)$^{-1}$		(mg/m^3)			(ug/m^3)	(ug/m^3)
x	127-18-4	Tetrachloroethylene	Yes	Yes	1.1E+01	C	1.1E+02	1.5E+01	No (5)	25			2.60E-07	I	4.00E-02	I		1.1E+01	4.2E+01

Notes:

(1) **Inhalation Pathway Exposure Parameters (RME):**

Exposure Scenario	Units	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario in cell E5) Symbol	Selected (based on scenario in cell E5) Value
Averaging time for carcinogens	(yrs)	ATc_R	70	ATc_C	70	ATc	70
Averaging time for non-carcinogens	(yrs)	ATnc_R	26	ATnc_C	25	ATnc	26
Exposure duration	(yrs)	ED_R	26	ED_C	25	ED	26
Exposure frequency	(days/yr)	EF_R	350	EF_C	250	EF	350
Exposure time	(hr/day)	ET_R	24	ET_C	8	ET	24

(2) **Generic Attenuation Factors:**

Source Medium of Vapors		Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario in cell E5) Symbol	Selected (based on scenario in cell E5) Value
Groundwater	(-)	AFgw_R	0.001	AFgw_C	0.001	AFgw	0.001
Sub-Slab and Exterior Soil Gas	(-)	AFss_R	0.1	AFss_C	0.1	AFss	0.1

(3) **Formulas**

Cia, target = MIN(Cia,c; Cia,nc)
Cia,c (ug/m3) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)
Cia,nc (ug/m3) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET)

(4) **Special Case Chemicals**

Trichloroethylene

	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario in cell E5) Symbol	Selected (based on scenario in cell E5) Value
mIURTCE_R		1.00E-06	mIURTCE_C	0.00E+00	mIURTCE	1.00E-06
IURTCE_R		3.10E-06	IURTCE_C	4.10E-06	IURTCE	3.10E-06

Mutagenic Chemicals — The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride.

Age Cohort	Exposure Duration (years)	Age-dependent adjustment factor
0 - 2 years	2	10
2 - 6 years	4	3
6 - 16 years	10	3
16 - 26 years	10	1

Mutagenic-mode-of-action (MMOA) adjustment factor 72 — This factor is used in the equations for mutagenic chemicals.

Vinyl Chloride — See the Navigation Guide equation for Cia,c for vinyl chloride.

Notation:

NVT = Not sufficiently volatile and/or toxic to pose inhalation risk in selected exposure scenario for the indicated medium
C = Carcinogenic
NC = Non-carcinogenic
I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at: http://www.epa.gov/iris/subst/index.html
P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at: http://hhpprtv.ornl.gov/pprtv.shtml
A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at: http://www.atsdr.cdc.gov/mrls/index.html
CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at:
H = HEAST. EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at: http://epa-heast.ornl.gov/heast.shtml
S = See RSL User Guide, Section 5
X = PPRTV Appendix
E = The Engineering ToolBox. Available online at http://www.engineeringtoolbox.com/explosive-concentration-limits-d_423.html
N = Centers for Disease Control and Prevention (CDC) National Institute for Occupational Safety and Health (NIOSH). Pocket Guide to Chemical Hazards. Available online at: http://www.cdc.gov/niosh/npg/default.html
M = Chemical-specific MSDS
Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (4) above).
VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).
TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).
Yellow highlighting indicates site-specific parameters that may be edited by the user.
Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.
**Lower explosive limit is the minimum concentration of the compound in air (% by volume) that is needed for the gas to ignite and explode.

Appendix E

Risk Reduction Standard Calculations

Table E1 - Example Calculation of Type 4 Risk Reduction Standards for Groundwater - Construction Worker
Corners Shopping Center
Marietta, Georgia

ROUTE-SPECIFIC RRSs:

Oral:

$$(RRS_o)_{C\ or\ NC} = \frac{(TCR\ or\ THI)\ x\ BW\ x\ (AT_C\ or\ AT_{NC})}{IR_w\ x\ EF\ x\ ED\ x\ [SF_O\ or\ (1/RfD_O)]}$$

Cancer Effects RRS: RRS_C

Non-Cancer Effects RRS: RRS_{NC}

RRS = Minimum result of RRS_C and RRS_{NC}.

where:

AT_C	Averaging time for cancer effects (25,550 days).
AT_{NC}	Averaging time for non-cancer effects; ED x 365 days/year.
BW	Body weight (70 kg adult) (GAEPD, 2003).
ED	Exposure duration (1 year) (GAEPD, 2003).
EF	Exposure frequency (180 days/year) (GAEPD, 2003).
IR_w	Ingestion rate of drinking water (0.01 L/day).
RfDo	Reference dose for ingestion (mg/kg/day).
RRS	Risk reduction standard for groundwater (mg/L); minimum of the RRS_C (based on cancer effects) and the RRS_{NC} (based on non-cancer effects)
TCR	Target cancer risk (unitless); results presented for TCR value of 10^{-5} (10^{-4} for Class C carcinogens).
THI	Target hazard index (unitless); results presented for THI value of 1.

SAMPLE CALCULATIONS, Tetrachloroethene, Construction Exposure (Type 4).

CANCER EFFECTS:

Oral:

$$(RRS_O)_C = \frac{10^{-5}\ x\ 70\ kg\ x\ 25{,}550\ days}{0.01\ L/day\ x\ 180\ days/yr\ x\ 1\ yr\ x\ (0.0021\ kg\text{-}day/mg)}$$

$$= 4{,}700\ mg/L$$

CANCER EFFECTS RRS:

RRS_C = **4,700 mg/L**

NON-CANCER EFFECTS:

Oral:

$$(RRS_o)_{NC} = \frac{1\ x\ 70\ kg\ x\ 365\ days}{0.01\ L/day\ x\ 180\ days/yr\ x\ 1\ yrs\ x\ (1/0.006\ mg/kg\text{-}day)}$$

$$= 85\ mg/L$$

NON-CANCER EFFECTS RRS:

RRS_{NC} = **85 mg/L**

RRS = Minumum result of RRS_C (4,700 mg/L) and RRS_{NC} (85 mg/L) = 85 mg/L

Table E2 - Example Calculation of Type 4 Risk Reduction Standards for Groundwater - Utility Worker
Corners Shopping Center
Marietta, Georgia

ROUTE-SPECIFIC RRSs:

Oral:

$$(RRS_o)_{C\ or\ NC} = \frac{(TCR\ or\ THI)\ x\ BW\ x\ (AT_C\ or\ AT_{NC})}{IR_w\ x\ EF\ x\ ED\ x\ EV\ x\ [SF_O\ or\ (1/RfD_O)]}$$

Cancer Effects RRS: RRS_C

Non-Cancer Effects RRS: RRS_{NC}

RRS = Minimum result of RRS_C and RRS_{NC}.

where:

AT_C	Averaging time for cancer effects (25,550 days).
AT_{NC}	Averaging time for non-cancer effects; ED x 365 days/year.
BW	Body weight (70 kg adult) (GAEPD, 2003).
ED	Exposure duration (25 years) (GAEPD, 2003).
EF	Exposure frequency (10 days/year) (GAEPD, 2003).
IR_w	Ingestion rate of drinking water (0.01 L/day).
RfDo	Reference dose for ingestion (mg/kg/day).
RRS	Risk reduction standard for groundwater (mg/L); minimum of the RRS_C (based on cancer effects) and the RRS_{NC} (based on non-cancer effects)
TCR	Target cancer risk (unitless); results presented for TCR value of 10^{-5} (10^{-4} for Class C carcinogens).
THI	Target hazard index (unitless); results presented for THI value of 1.

SAMPLE CALCULATIONS, Tetrachloroethene, Utility Exposure (Type 4).

CANCER EFFECTS:

Oral:

$$(RRS_O)_C = \frac{10^{-5}\ x\ 70\ kg\ x\ 25{,}550\ days}{0.01\ L/day\ x\ 10\ days/yr\ x\ 25\ yrs\ x\ (0.0021\ kg\text{-}day/mg)}$$

$$= 3{,}400\ mg/L$$

CANCER EFFECTS RRS:

RRS_C = **3,400 mg/L**

NON-CANCER EFFECTS:

Oral:

$$(RRS_o)_{NC} = \frac{1\ x\ 70\ kg\ x\ 9{,}125\ days}{0.01\ L/day\ x\ 10\ days/yr\ x\ 25\ yrs\ x\ (1/0.006\ mg/kg\text{-}day)}$$

$$= 1{,}500\ mg/L$$

NON-CANCER EFFECTS RRS:

RRS_{NC} = **1,500 mg/L**

RRS = Minumum result of RRS_C (3,400 mg/L) and RRS_{NC} (1,500 mg/L) = 1,500 mg/L